SWIM-TI Yellow Profile Technical Specification

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LEONARDO-FINMECCANICA, THALES, INDRA, FREQUENTIS, AIRBUS, HONEYWELL, EUROCONTROL	

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Abstract

This document is the final SESAR 1 SWIM-TI Technical Specification including functional, non-functional and interfaces requirements applicable to the Yellow Profile.

Authoring & Approval

Prepared By - *Authors of the document.*		
Name & Company	Position & Title	Date
[redacted] LEONARDO-FINMECCANICA	[redacted]	04/07/2016
[redacted] EUROCONTROL		04/07/2016
[redacted] FREQUENTIS		04/07/2016
[redacted] THALES		14/12/2015
[redacted] BOEING		14/12/2015
[redacted] THALES		14/12/2015
[redacted] HONEYWELL		14/12/2015
[redacted] AIRBUS		14/12/2015
[redacted] AIRBUS		14/12/2015
[redacted] EUROCONTROL		04/07/2016

Reviewed By - *Reviewers internal to the project.*		
Name & Company	Position & Title	Date
[redacted] FREQUENTIS	[redacted]	10/04/2016
[redacted] INDRA		10/12/2015
[redacted] THALES		10/12/2015

Reviewed By - *Other SESAR projects, Airspace Users, staff association, military, Industrial Support, other organisations.*		
Name & Company	Position & Title	Date
[redacted] EUROCONTROL	[redacted]	01/07/2016
[redacted] THALES		18/07/2013
[redacted] THALES		18/07/2013
[redacted] NATMIG		18/07/2013
[redacted] NATMIG		18/07/2013
[redacted] THALES		18/07/2013
[redacted] INDRA		18/07/2013
[redacted] THALES		18/07/2013
[redacted] ENAV		17/12/2013
[redacted] NORACON		17/12/2013

Approved for submission to the SJU By - *Representatives of the company involved in the project.*		
Name & Company	Position & Title	Date
[redacted] LEONARDO-FINMECCANICA	[redacted]	04/07/2016
[redacted] INDRA		04/07/2016
[redacted] EUROCONTROL		04/07/2016
[redacted] FREQUENTIS		04/07/2016
[redacted] THALES		04/07/2016
[redacted] HONEYWELL		04/07/2016
[redacted] AIRBUS		04/07/2016

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Rejected By - *Representatives of the company involved in the project.*		
Name & Company	Position & Title	Date

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Table of Contents

EXECUTIVE SUMMARY **11**

1 INTRODUCTION **12**

1.1 PURPOSE OF THE DOCUMENT 12
1.2 INTENDED READERSHIP 12
1.3 INPUTS FROM OTHER PROJECTS 12
1.4 STRUCTURE OF THE DOCUMENT 12
1.5 REQUIREMENTS DEFINITIONS – GENERAL GUIDANCE 13
1.6 FUNCTIONAL BLOCK PURPOSE 13
1.7 FUNCTIONAL BLOCK OVERVIEW 13
1.8 GLOSSARY OF TERMS 13
1.9 ACRONYMS AND TERMINOLOGY 20

2 GENERAL FUNCTIONAL BLOCK DESCRIPTION **27**

2.1 CONTEXT 27
2.2 FUNCTIONAL BLOCK MODES AND STATES 27
2.3 MAJOR FUNCTIONAL BLOCK CAPABILITIES 27
2.4 USER CHARACTERISTICS 29
2.4.1 YELLOW PROFILE SWIM PROFILE ASSERTION 29
2.4.1.1 SCOPE 29
2.4.1.2 RATIONALE 29
2.4.1.3 STRUCTURE 29
2.4.1.4 CONFORMANCE STATEMENTS 35
2.5 OPERATIONAL SCENARIOS 41
2.6 FUNCTIONAL 42
2.6.1 FUNCTIONAL DECOMPOSITION 42
2.6.2 FUNCTIONAL ANALYSIS 42
2.7 SERVICE VIEW 43

3 SWIM YELLOW PROFILE FUNCTIONAL AND NON-FUNCTIONAL REQUIREMENTS **44**

3.1 OVERALL FUNCTIONAL AND NON-FUNCTIONAL REQUIREMENTS 46
3.1.1 CAPABILITIES 46
3.1.2 ADAPTABILITY 49
3.1.3 PERFORMANCE CHARACTERISTICS 50
3.1.3.1 TIME BEHAVIOUR REQUIREMENTS 50
3.1.3.2 RESOURCE UTILIZATION REQUIREMENTS 50
3.1.3.3 CAPACITY REQUIREMENTS 50
3.1.4 SAFETY & SECURITY 52
3.1.4.1 CONFIDENTIALITY REQUIREMENTS 60
3.1.4.2 INTEGRITY REQUIREMENTS 60
3.1.4.3 NON-REPUDIATION REQUIREMENTS 61
3.1.4.4 ACCOUNTABILITY REQUIREMENTS 61
3.1.4.5 AUTHENTICITY REQUIREMENTS 62
3.1.4.6 SAFETY REQUIREMENTS 62
3.1.5 MAINTAINABILITY 63
3.1.5.1 MODULARITY REQUIREMENTS 63
3.1.5.2 REUSABILITY REQUIREMENTS 63
3.1.5.3 ANALYSABILITY REQUIREMENTS 63
3.1.5.4 MODIFIABILITY REQUIREMENTS 63
3.1.5.5 TESTABILITY REQUIREMENTS 63
3.1.6 RELIABILITY 64
3.1.6.1 MATURITY REQUIREMENTS 64
3.1.6.2 AVAILABILITY REQUIREMENTS 65
3.1.6.3 FAULT TOLERANCE REQUIREMENTS 69
3.1.6.4 RECOVERABILITY REQUIREMENTS 70
3.1.7 INTERNAL DATA REQUIREMENTS 71

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3.1.8 Design and Construction Constraints 72
3.1.8.1 Co-existence Requirements 73
3.1.8.2 Interoperability Requirements 73
3.1.8.3 Installability Requirements 126
3.1.8.4 Replaceability Requirements 126
3.1.9 Interface Requirements 127
3.1.9.1 External Service Interface Bindings 127
3.1.9.2 Network Interface Bindings 128
3.1.9.3 Network Requirements 133
3.2 Messaging Functional and non-Functional Requirements 142
3.2.1 Capabilities 142
3.2.1.1 Distribution 142
3.2.1.2 Filtering 153
3.2.1.3 Data Management 154
3.2.1.4 Messages Routing 169
3.2.1.5 Protocol Bridge 174
3.2.1.6 Other Functional Requirements 174
3.2.2 Adaptability 187
3.2.3 Performance Characteristics 188
3.2.3.1 Time behaviour Requirements 188
3.2.3.2 Resource utilization Requirements 194
3.2.3.3 Capacity Requirements 194
3.2.4 Safety & Security 195
3.2.4.1 Confidentiality Requirements 195
3.2.4.2 Integrity Requirements 196
3.2.4.3 Non-repudiation Requirements 196
3.2.4.4 Accountability Requirements 197
3.2.4.5 Authenticity Requirements 197
3.2.4.6 Safety Requirements 197
3.2.5 Maintainability 198
3.2.5.1 Modularity Requirements 198
3.2.5.2 Reusability Requirements 198
3.2.5.3 Analysability Requirements 198
3.2.5.4 Modifiability Requirements 198
3.2.5.5 Testability Requirements 198
3.2.6 Reliability 199
3.2.6.1 Maturity Requirements 199
3.2.6.2 Availability Requirements 199
3.2.6.3 Fault tolerance Requirements 199
3.2.6.4 Recoverability Requirements 199
3.2.7 Internal Data Requirements 200
3.2.8 Design and Construction Constraints 201
3.2.8.1 Co-existence Requirements 202
3.2.8.2 Interoperability Requirements 202
3.2.8.3 Installability Requirements 202
3.2.8.4 Replaceability Requirements 202
3.2.9 Interface Requirements 203
3.2.9.1 Service Interface Bindings 204
3.2.9.2 Internal Service Interface Bindings 249
3.3 Security Functional and non-Functional Requirements 252
3.3.1 Capabilities 252
3.3.1.1 Confidentiality Ensuring Requirements 252
3.3.1.2 Information Origin Authentication Requirements 262
3.3.1.3 Policy Management Requirements 272
3.3.1.4 Policy Enforcement Requirements 276
3.3.1.5 Authentication Requirements 278
3.3.1.6 Authorization Requirements 287
3.3.1.7 Audit Requirements 296

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3.3.1.8 Security Enablers 309
3.3.2 Adaptability 313
3.3.3 Performance Characteristics 314
3.3.3.1 Time behaviour Requirements 314
3.3.3.2 Resource utilization Requirements 314
3.3.3.3 Capacity Requirements 315
3.3.4 Safety & Security 316
3.3.4.1 Confidentiality Requirements 317
3.3.4.2 Integrity Requirements 318
3.3.4.3 Non-repudiation Requirements 318
3.3.4.4 Accountability Requirements 318
3.3.4.5 Authenticity Requirements 319
3.3.4.6 Safety Requirements 319
3.3.5 Maintainability 320
3.3.5.1 Modularity Requirements 320
3.3.5.2 Reusability Requirements 320
3.3.5.3 Analysability Requirements 320
3.3.5.4 Modifiability Requirements 320
3.3.5.5 Testability Requirements 320
3.3.6 Reliability 321
3.3.6.1 Maturity Requirements 321
3.3.6.2 Availability Requirements 321
3.3.6.3 Fault tolerance Requirements 321
3.3.6.4 Recoverability Requirements 321
3.3.7 Internal Data Requirements 322
3.3.8 Design and Construction Constraints 323
3.3.8.1 Co-existence Requirements 324
3.3.8.2 Interoperability Requirements 324
3.3.8.3 Installability Requirements 326
3.3.8.4 Replaceability Requirements 326
3.3.9 Interface Requirements 327
3.3.9.1 Internal Service Interface Bindings 327
3.4 Supervision Functional and non-Functional Requirements 336
3.4.1 Capabilities 336
3.4.1.1 Service Control and Lifecycle Requirements 336
3.4.1.2 Status Monitoring, Reporting, and Publication Requirements 336
3.4.1.3 Subscription Management Requirements 338
3.4.1.4 Service Level Agreement (SLA) Compliance Monitoring Requirements 338
3.4.1.5 Alarms Requirements 342
3.4.1.6 Logging Requirements 342
3.4.1.7 Statistical Information and Reports Requirements 358
3.4.1.8 Configuration Information Management Requirements 358
3.4.2 Adaptability 370
3.4.3 Performance Characteristics 371
3.4.3.1 Time behaviour Requirements 371
3.4.3.2 Resource utilization Requirements 371
3.4.3.3 Capacity Requirements 371
3.4.4 Safety & Security 372
3.4.4.1 Confidentiality Requirements 372
3.4.4.2 Integrity Requirements 372
3.4.4.3 Non-repudiation Requirements 372
3.4.4.4 Accountability Requirements 372
3.4.4.5 Authenticity Requirements 372
3.4.4.6 Safety Requirements 372
3.4.5 Maintainability 373
3.4.5.1 Modularity Requirements 373
3.4.5.2 Reusability Requirements 373
3.4.5.3 Analysability Requirements 373

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3.4.5.4 Modifiability Requirements 373
3.4.5.5 Testability Requirements 373
3.4.6 Reliability 374
3.4.6.1 Maturity Requirements 374
3.4.6.2 Availability Requirements 374
3.4.6.3 Fault tolerance Requirements 374
3.4.6.4 Recoverability Requirements 374
3.4.7 Internal Data Requirements 375
3.4.8 Design and Construction Constraints 376
3.4.8.1 Co-existence Requirements 376
3.4.8.2 Interoperability Requirements 376
3.4.8.3 Installability Requirements 376
3.4.8.4 Replaceability Requirements 376
3.4.9 Interface Requirements 377
3.5 Recording Functional and non-Functional Requirements 388
3.5.1 Capabilities 388
3.5.2 Adaptability 390
3.5.3 Performance Characteristics 391
3.5.3.1 Time behaviour Requirements 391
3.5.3.2 Resource utilization Requirements 391
3.5.3.3 Capacity Requirements 391
3.5.4 Safety & Security 392
3.5.4.1 Confidentiality Requirements 392
3.5.4.2 Integrity Requirements 392
3.5.4.3 Non-repudiation Requirements 392
3.5.4.4 Accountability Requirements 392
3.5.4.5 Authenticity Requirements 392
3.5.4.6 Safety Requirements 392
3.5.5 Maintainability 393
3.5.5.1 Modularity Requirements 393
3.5.5.2 Reusability Requirements 393
3.5.5.3 Analysability Requirements 393
3.5.5.4 Modifiability Requirements 393
3.5.5.5 Testability Requirements 393
3.5.6 Reliability 394
3.5.6.1 Maturity Requirements 394
3.5.6.2 Availability Requirements 394
3.5.6.3 Fault tolerance Requirements 394
3.5.6.4 Recoverability Requirements 394
3.5.7 Internal Data Requirements 395
3.5.8 Design and Construction Constraints 396
3.5.8.1 Co-existence Requirements 396
3.5.8.2 Interoperability Requirements 396
3.5.8.3 Installability Requirements 397
3.5.8.4 Replaceability Requirements 397
3.5.9 Interface Requirements 398

4 ASSUMPTIONS 399

5 REFERENCES 400

5.1 Use of copyright / patent material /classified material 403
5.1.1 Classified Material 404

APPENDIX A CONCRETE CASES OF PS-MEP SERVICES USING AMQP AND WS-N 405

A.1 Generic Considerations 405
A.2 EAD B2B as an example of WS-N based Publish/Subscribe 406
A.2.1 Introduction 406
A.2.2 Subscription Management 406

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A.2.3 PUBLICATION REGISTRATION MANAGEMENT 407
A.2.4 MESSAGE DISTRIBUTION 407
A.2.4.1 INTRODUCTION 407
A.2.4.2 PULL MESSAGE DISTRIBUTION 407
A.2.5 ADMINISTRATION 407
A.3 NM B2B AS AN EXAMPLE OF WS-* + AMQP 1.0 BASED PUBLISH/SUBSCRIBE 408
A.3.1 INTRODUCTION 408
A.3.2 SUBSCRIPTION MANAGEMENT 408
A.3.3 PUBLICATION REGISTRATION MANAGEMENT 409
A.3.4 MESSAGE DISTRIBUTION 409
A.3.4.1 INTRODUCTION 409
A.3.4.2 PULL MESSAGE DISTRIBUTION 410
A.3.4.3 PUSH MESSAGE DISTRIBUTION 410
A.3.5 ADMINISTRATION 411
APPENDIX B INTERFACE EVOLUTION ANALYSIS 412

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List of tables

Table 2-1: SWIM-TI Functional Blocks Applicable To Yellow Profile 27
Table 2-2: SESAR Enablers Relevant for SWIM-TI Yellow Profile TS 41
Table 2-3: Brief Description of SWIM-TI Sharable Functions Applicable To Yellow Profiles 43

List of figures

None

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Executive summary

The purpose of this deliverable is to provide the final SESAR 1 SWIM-TI technical specification for the SWIM Yellow Profile. SWIM-TI TS 3.1 requirements (14.01.04.D43-004 [12]) have been analysed and improved according to maintenance activities planned and agreed by P14.01.03 and P14.01.04 in collaboration with SJU.

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1 Introduction

This document represents the TS (Technical specification) covering functional, non-functional and interface requirements identified for SWIM Technical Infrastructure and applicable to the SWIM Yellow Profile. This specification is based on the SWIM-TI functional, technical and deployment views described in the SWIM-TI TAD [13].

1.1 Purpose of the document

This specification provides functional, non-functional, applicable standards and interface requirements applicable to the SWIM-TI Yellow Profile. The SWIM-TI functional, technical and deployment views described in the SWIM-TI TAD [13] have been analysed against the Yellow Profile SPA (§2.4) and applicable requirements have been specified.

1.2 Intended readership

The intended audience of this document is:

- SJU/IS in order to manage the SWIM Technical Infrastructure TS.
- SWP14.2 projects in order to review this TS and to implement and verify the requirements.
- B.4.3 in order to review this TS according to its relationship with architectural aspects.
- 08.03.10 in order to review this TS according to its relationship with service instances provisioning and consumption.
- Any other SESAR projects interested in the SWIM Technical Infrastructure TSs.

1.3 Inputs from other projects

This document is based on the following inputs:

- SWIM-TI TAD [13].
- SWIM Profiles [14].
- SWIM-TI Verification Reports [8][9].
- ISRM 2.0 [7].

1.4 Structure of the document

This document is organized as follows:

Chapter 1: Purpose and scope, requirements guidelines, SWIM Technical Infrastructure high level overview.

Chapter 2: General SWIM Technical Infrastructure description including context description, applicable SWIM-TI functional blocks analysis.

Chapter 3: SWIM-TI Yellow Profile functional, non-functional, applicable standards and interface requirements.

Chapter 4: Assumptions.

Chapter 5: Referenced documents.

Appendix A: Concrete Cases Of PS-MEP Services using AMQP and WS-N.

Appendix B: This appendix includes Interface Evolution analysis applicable to ATM services using interface bindings part of this Technical Specification.

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1.5 Requirements Definitions – General Guidance

14.01.04 requirements guidelines include programme level guidelines [2] which have been extended with project level guidelines [15] concerning requirement identifiers coding schema, requirements writing rules, project specific requirements attributes and links.

In particular, a number of P14.01.04 specific requirements attributes have been defined and specified. Each of the attributes can be considered as a dimension on which filtering can be applied. Combined filtering on multiple distinct attributes is meant to be meaningful. Conformance statements provided in this technical specification are possible examples of filtering criteria.

Requirements provided in this Technical Specification have been exported to a spreadsheet allowing specification "user" to apply simple and more complex/structured filtering criteria. References to this file are included in the P14.01.04 Technical Specifications Catalogue [15].

Due to tools used to manage this Technical Specification, it could happen that text and/or requirements tables are formatted as hidden text. Please make sure that Microsoft Word is configured to show hidden text (¶).

1.6 Functional block Purpose

SWIM-TI is the enabler for the SWIM concept realization: *to increase the common situational awareness improving the ability to deliver the right information to the right people at the right time*. SWIM-TI contributes to the services' solution aspects providing means supporting an effective and secure ATM-specific services provisioning and consumption among SWIM Enabled ATM systems.

SWIM-TI is built by specific technical elements identified and implemented in accordance with the needs of each ATM system and service. These technical elements consist of functionalities specified by providing requirements, architectural items, interfacing layers and standard technologies.

For further details about SWIM-TI architecture, refer to the SWIM-TI TAD [13].

The purpose of the SWIM Yellow Profile, as profiling of the SWIM-TI as introduced above, is detailed in §2.4.

1.7 Functional block Overview

Yellow Profile detailed overview is provided in §2. Yellow Profile SWIM Profile Assertion is provided in §2.4.

1.8 Glossary of terms

Term	Definition
Access Control	ITU-T IdM X.1252 defines this term as a procedure used to determine if an entity should be granted access to resources, facilities, services, or information based on pre-established rules and specific rights or authority associated with the requesting party
Address	ITU-T IdM X.1252 defines this term as an identifier for a specific termination point that is used for routing
Agent	ITU-T IdM X.1252 defines this term as an entity that acts on behalf of another entity.
Alarm	An indication of an error or an abnormal and/or undesirable condition for a resource. An example of an alarm would be for a "connection down" in a data communications channel, or a non-booting processor in a hardware platform. Alarms originate with the hardware, software, and data communications infrastructure, and the infrastructure provides an indication to the Supervision when an alarm is raised or cleared. The Supervision notifies the local owner

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Term	Definition
	or authorized requester when an alarm is raised or cleared for a monitored resource.
Alliance	ITU-T IdM X.1252 defines this term as an agreement between two or more independent entities that defines how they relate to each other and how they jointly conduct activities.
Archive	Information storage that is used for by the automation for long-term retention of information produced and/or used at the local SWIM Node. An archive may be offline with respect to the SWIM Node, meaning that it is not directly accessible to processes and services running on the SWIM Node; or it may be online with respect to the SWIM Node, meaning that the archive is directly accessible to processes and services running on the SWIM Node. Information that is logged by the SWIM Supervision is retained online for a configurable time period, after which it is archived and is then no longer guaranteed to be available in the same manner as information that has not reached its retention time limit. Each SWIM Node will have local processes and procedures for storing, maintaining, and accessing archived information. Archived information will be available to the reporting capability; however, the response time for accessing archived information will vary according to the storage approach used by the node.
Assertion	ITU-T IdM X.1252 defines this term as a statement made by an entity without accompanying evidence of its validity.
ATM Service or SWIM ATM Service	A service representing the exchange of well-defined ATM information.
Attribute	ITU-T IdM X.1252 defines this term as information bound to an entity that specifies a characteristic of the entity.
Attribute Based Access Control (ABAC)	In attribute-based access control (ABAC), access is based on attributes of the user. The user has to prove these attributes to the access control engine. An attribute-based access control policy specifies which attributes need to be satisfied in order to grant access to an object.
Attribute Value	ITU-T IdM X.1252 defines this term as a particular instance of the class of information indicated by an attribute type.
(Entity) Authentication	ITU-T IdM X.1252 defines this term as a process used to achieve sufficient confidence in the binding between the entity and the presented identity.
Authorization	ITU-T IdM X.1252 defines this term as the granting of rights and, based on these rights, the granting of access.
Authorized requester	A human user or automated process, at the local SWIM Node or at a remote SWIM Node, that has been authenticated and is authorized per security requirements to make a service request.
Binding	ITU-T IdM X.1252 defines this term as an explicit established association, bonding, or tie.
Bridge Certificate Authority (BCA)	The Bridge Certification Authority (BCA) architecture addresses the shortcomings of the two basic PKI architectures, and to link PKIs that implement different architectures. The BCA does not issue certificates directly to users. The BCA is not intended to be used as a trust point by the users of the PKI, unlike the “root” CA in a hierarchy. The BCA establishes peer-to-peer trust relationships with the different user communities, which allows the users to keep their natural trust points. These relationships are combined to form a “bridge of trust” enabling users from the different user communities to interact with each other through the BCA with a specified level of trust.
Certificate	ITU-T IdM X.1252 defines this term as a set of security-relevant data issued by a security authority or a trusted third party, that, together with security information, is used to provide the integrity and data origin authentication services for the data.

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Term	Definition
Certificate Service Provider (CSP)	It is anticipated that security of the European SWIM-TI neither be handled by a single certification authority nor even by a single hierarchy of certification authorities. The main reason is that a few organizations (e.g. CFMU and some Airlines) have already deployed a PKI with an associated third party CA (or Certificate Service Provider (CSP)). The objective is not to replace the existing CAs by a single new one but rather to build a SWIM-TI capable of federating existing CAs and the SWIM-TI dedicated CA
Channel Protection	Channel Protection or transport level security, provides point-to-point protection of the communication. The protection will not go beyond intermediaries. This may be acceptable or not depending on the context. The Transport Layer Security TLS (cryptographic protocol) is a well-known and widely used protocol to provide transport level security. TLS encrypts the data using asymmetric cryptography for key exchange, symmetric encryption for confidentiality and Message Authentication Codes for message integrity.
Claim	ITU-T IdM X.1252 defines this term as to state as being the case, without being able to give proof.
Confidentiality Ensuring	Confidentiality Ensuring aims at providing the ability to ensure "non-disclosure" of information. This service relies on the policy enforcement features and to the cryptographic mechanisms provided by the Cryptography security enabler to ensure information confidentiality at message level.
Credential	ITU-T IdM X.1252 defines this term as a set of data presented as evidence of a claimed identity and/or entitlements.
Data Origin Authentication	Equivalent expression for Information Origin Authentication
Data Validation	Data validation allows checking for conformance to message/data type descriptions. The conformance conditions are expressed in form of well-defined policy assertions assigned to the SWIM service definition.
Dead letter queue	In message queuing, in the dead letter queue are stored messages that meet one or more of the following criteria : message that is sent to a queue that does not exist.; queue length limit exceeded; message length limit exceed; message is rejected by another queue exchange.
Delegation	ITU-T IdM X.1252 defines this term as an action that assigns authority, responsibility, or a function to another entity.
Digital Identity	ITU-T IdM X.1252 defines this term as a digital representation of the information known about a specific individual, group or organization.
Digital Signature (algorithm)	Digital Signature is a mathematical scheme for demonstrating the authenticity of a digital message or document. A valid digital signature gives a recipient reason to believe that a known sender created the message, and that it was not altered in transit. Unlike a Message Authentication Code, a Digital Signature also provides support for non-repudiation.
Enabling Service	A service provided by the SWIM-TI.
Entity	ITU-T IdM X.1252 defines this term as something that has separate and distinct existence and that can be identified in context. An entity can be a physical person, an animal, a juridical person, an organization, an active or passive thing, a device, a software application, a service, etc., or a group of these entities. In the context of telecommunications, examples of entities include access points, subscribers, users, network elements, networks, software applications, services and devices, interfaces, etc.
European Network of Excellence in Cryptology (ECRYPT)	ECRYPT (European Network of Excellence for Cryptology) is a 4-year European research initiative launched on 1 February 2004. The stated objective is to, "intensify the collaboration of European researchers in information security and more in particular in cryptology and digital watermarking".

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Term	Definition
Failure Transparency	Failure transparency masks from an object the failure and possible recovery of other objects (or itself) to enable fault tolerance. When this transparency is provided, the designer can work in an idealized world in which the corresponding class of failures does not occur.
Federation	ITU-T IdM X.1252 defines this term as an association of users, service providers, and identity service providers.
Functional Status	Indicates the ability of the SWIM Node or an element of the SWIM Node to provide the services.
Identification	ITU-T IdM X.1252 defines this term as the process of recognizing an entity by contextual characteristics.
Identifier	ITU-T IdM X.1252 defines this term as one or more attributes used to identify an entity within a context.
Identity	ITU-T IdM X.1252 defines this term as a representation of an entity in the form of one or more attributes that allow the entity or entities to be sufficiently distinguished within context. For identity management (IdM) purposes, the term identity is understood as contextual identity (subset of attributes), i.e., the variety of attributes is limited by a framework with defined boundary conditions (the context) in which the entity exists and interacts. Each entity is represented by one holistic identity that comprises all possible information elements characterizing such entity (the attributes). However, this holistic identity is a theoretical issue and eludes any description and practical usage because the number of all possible attributes is indefinite.
Identity Management (IdM)	ITU-T IdM X.1252 defines this term as a set of functions and capabilities (e.g., administration, management and maintenance, discovery, communication exchanges, correlation and binding, policy enforcement, authentication and assertions) used for assurance of identity information (e.g., identifiers, credentials, attributes); assurance of the identity of an entity and supporting business and security applications.
Identity Provider (IdP)	ITU-T IdM X.1252 defines this term as an entity that verifies, maintains, manages, and may create and assign identity information of other entities. Depending on the type of digital identity, an Identity Provider may be Public Key Infrastructure (PKI) or Security Token Infrastructure (STI). IdP is also named Identity Service Provider (IdSP).
Information Origin Authentication	SWIM-TI service to authenticate the originator entity of a message by several techniques at message level and transport level.
Interface Control Document (ICD)	An interface control document (ICD) in systems engineering and software engineering, describes the interface or interfaces between subsystems or to a system or subsystem.
IOP Status	Indicates the ability of the SWIM Node to provide Shared Object services.
Messaging FB or SWIM-TI Messaging FB	Messaging Functional Block provides a decoupled, interoperable and effective communications between information producer and the information consumers. It supports different message exchange patterns (e.g. publish/subscribe, request/response, push, etc.), different subscription styles (e.g. durable, non-durable) and different set of QoS (e.g. best-effort and reliable delivery).
Mutual Authentication	ITU-T IdM X.1252 defines this term as a process by which two entities (e.g., a client and a server) authenticate each other such that each is assured of the other's identity.
Non-Repudiation	ITU-T IdM X.1252 defines this term as the ability to protect against denial by one of the entities involved in an action of having participated in all or part of the action.
Pan-European Network Service	A joint EUROCONTROL-ANSPs led initiative to provide a common IP based network service across the European region covering voice and data

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Term	Definition
(PENS)	communication and providing efficient support to existing services and new requirements that are emerging from future Air Traffic Management (ATM) concepts.
Persistent	ITU-T IdM X.1252 defines this term as existing and able to be used in services outside the direct control of the issuing assigner, without a stated time-limit.
Policy (Security)	An agreement upon which entities (e.g. Systems) can collaborate. A typical example of this is Authorization Policy and Audit Policy.
Policy Life Cycle Management (Security)	The Policies lifecycle management is a key concept enabling (security) policies management and proper (security) policies enforcement.
Public Key Cryptography	Public Key Cryptography refers to a cryptographic technique in which one key is secret private and a corresponding key one is public. Information are is encrypted using the public key and can only be decrypted by the corresponding secret/private key or vice-versa, information is encrypted using the private key and can only be decrypted by the corresponding public key.. Public Key Cryptography can also be used for Digital Signatures; in this case the private key is used for signing, and the corresponding public key for verifying.
Public Key Infrastructure	A Public Key Infrastructure (PKI) is a system, which may include hardware, software, human in the loop, policies and procedures, needed to create, manage, distribute, use, store and revoke digital identities in X.509 certificates based IdM. PKIs represent the instantiation of the ITU-T X.1252 IdP when the X.509 certificates based security is adopted.
Recording Functional Block or SWIM-TI Recording FB	Recording FB includes the ability to collect, store and to retrieve on demand of information related to communication being performed via the SWIM Interfaces and supervision actions and events.
Registry Functional Block or SWIM-TI Registry FB	Registry FB includes two main groups of functions: - Information Management enabling the management several kinds of ATM-specific service meta-data allowing to discover, to subscribe and to publish/update these information. - Policy Management enabling the definition, validation and distribution of several kinds of policies including security. It covers policy administration (including creation, maintenance, change and deletion) and policy distribution and transformation and policy auditing.
Replication Transparency	Replication transparency masks the use of a group of mutually behaviorally compatible objects to support an interface. Replication is often used to enhance performance and availability.
Revocation	ITU-T IdM X.1252 defines this term as the annulment by someone having the authority, of something previously done.
SAML Token	Security Assertion Markup Language (Token)
Schematron	In markup languages, Schematron is a rule-based validation language for making assertions about the presence or absence of patterns in XML trees. It is a structural schema language expressed in XML using a small number of elements and XPath.
Security Attribute	An abstraction representing the basic properties or characteristics of an entity with respect to safeguarding information; typically associated with internal data structures (e.g., records, buffers, files) within the information system and used to enable the implementation of access control and flow control policies, reflect special dissemination, handling or distribution instructions, or support other aspects of the information security policy.

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Term	Definition
Security Domain	ITU-T IdM X.1252 defines this term as a set of elements, a security policy, a security authority, and a set of security-relevant activities in which the elements are managed in accordance with the security policy.
Security Functional Block or SWIM-TI Security FB	Security Functional Block provides confidentiality, integrity, access control, accountability and non-repudiation functionalities, allowing data exchanged through the SWIM-TI to be protected
Security Token	Security tokens are used to prove one's identity electronically. The token acts like an electronic key to access something. Besides the information needed to authenticate an identity, a token can provide additional information (identity attributes) that are used for (e.g.) authorization purposes. Security tokens imply trust of a third party that issues the security tokens.
Security Token Infrastructure (STI)	A Security Tokens Infrastructure (STI) is a system, which may include hardware, software, human in the loop, policies and procedures, needed to create, manage, distribute, use, store and revoke digital identities in security token based IdM. STIs represent the instantiation of the ITU-T X.1252 IdP when the security tokens based security is adopted.
Security Token Service (STS)	A Security Token Service (STS) is a software based identity provider responsible for issuing and verifying security tokens as part of a claims-based identity management.
Service	When used without further qualification, Service indicates either a SWIM Service or a SWIM Enabling Service that is to be managed by SWIM Supervision at the local SWIM Node.
Service Agent SOA Design Pattern	Service agents can be designed to automatically respond to predefined conditions without invocation via a published contract. Refer to SOA Patterns http://www.soapatterns.org/service_agent.php
Service Virtualization (Through Service Agent SOA design pattern)	Service Virtualization helps insulate service infrastructure details such as service endpoint location, service inter-connectivity, policy enforcement, service versioning and dynamic service management information from service consumers. Refer to: http://www.soapatterns.org/service_virtualization.php
Shared Object Functional Block or SWIM-TI Shared Object FB	Shared Object FB is a special category that holds a pattern used to share data across multiple SWIM Nodes according to specific roles and rules.
Supervision Functional Block or SWIM-TI Supervision FB	Monitoring and Control FB includes control, fault management and performance monitoring at SWIM Node level (local supervision).
SWIM Enabled System/Application	A SWIM Enabled System/Application is a system/application exchanging information with other ATM actors according to the SWIM ATM Services and the appropriate SWIM-TI.
SWIM Message Exchange Pattern (MEP)	SWIM Exchange Pattern is a definition to provide data exchanges of a SWIM profile. The message exchange patterns can be defined in terms of a set of technical attributes including interaction pattern, security, quality of service, network infrastructure, middleware functional needs and mandated standards.
SWIM Node Application	A SWIM Node Application represents an application or a software system that supports a particular business function and that can be managed as an independent unit. A SWIM Node Application can be local to a SWIM Node Computer or distributed over multiple SWIM Node Computers. A SWIM Node Application can be composed of other application elements (processes, software components) and other SWIM Node Applications (sub-

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Term	Definition
	applications).
SWIM Node Computer	SWIM Node Computer is a special collection of SWIM TI managed entities that provides computing capabilities (such as processor, memory and file systems) for running SWIM TI applications and software components. A SWIM Node Computer is uniquely named and independently managed in a SWM Node.
SWIM Node or SWIM-TI Node	A SWIM-TI Node is an autonomous point of presence in the Distributed System (of Systems) that interacts with other SWIM-TI Nodes in the Distributed System (of Systems).
SWIM Profile Assertion (SPA)	Declaration of the existence of a SWIM Profile combined with precisions on scope and motivation and with design considerations.
SWIM Service	A service that is managed by the SWIM Supervision capability at a local SWIM Node. SWIM Supervision is responsible for the data, process control, event-reporting, and statistics for these services.
SWIM Supervision Service	A service whose functionality is part of the SWIM Supervision capability. SWIM Supervision Services are a subset of SWIM Services.
SWIM Technical Infrastructure (SWIM-TI)	The SWIM Technical Infrastructure (SWIM-TI) contributes to the services' solution, aspects providing means supporting effective and secure ATM-specific service provision and consumption among SWIM-enabled ATM systems.
SWIM-TI Administrative Console	Any application allowing authorized users to manage or control one or more SWIM Functions. Technical details of such consoles depend on implementation choices (e.g. CLI or graphical interfaces) but each console shall guarantee a certain level of security and compliance with current regulations.
SWIM-TI Solution	Software and Hardware representing the implementation of (applicable) SWIM-TI Technical Specifications.
Symmetric Key Cryptography (algorithms)	A Symmetric Key algorithm uses the same cryptographic key (shared secret key) for both encryption of plaintext and decryption of cipher text.
System Instance	A System Instance (SI) is a stakeholder system in the SoS which provides and consumes data in an ATC context e.g. CFMU, Airports.
System of systems (SoS)	System of systems (SoS) is the viewing of multiple, dispersed, independent systems in context as part of a larger, more complex system. A system is a group of interacting, interrelated and interdependent components that form a complex and unified whole.
Technical Status	Indicates whether the SWIM Node or an element of the SWIM Node is working.
X.509 certificates	In cryptography, X.509 is an ITU-T standard for a public key infrastructure (PKI) and Privilege Management Infrastructure (PMI). X.509 specifies, amongst other things, standard formats for public key certificates, certificate revocation lists, attribute certificates, and a certification path validation algorithm.
XML Encryption	XML Encryption is a specification (by W3C recommendation) that defines how to encrypt the contents of an XML element. Note: W3C (World Wide Web Consortium) is the main standards organization for the world wide web.
XML Signature	XML Signature is the XML syntax for digital signatures.

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1.9 Acronyms and Terminology

Term	Definition
A/C	Aircraft
A/G	Air/Ground
ABAC	Attribute Based Access Control
ACC	Air Traffic Control Centre
ACCS	Air Command and Control System (NATO terminology)
ADD	Architecture Description Document
AFF-MEP	Asynchronous Fire & Forget Message Exchange Pattern
AIM	Aeronautical Information Management
AIRM	Aeronautical Information Reference Model
AIS	Aeronautical Information Services
AIXM	Aeronautical Information eXchange Model
AMHS	Aeronautical Message Handling System
AMQP	Advanced Message Queuing Protocol
AOC	Airline Operations Centre
ARR-MEP	Asynchronous Request/Reply Message Exchange Pattern
ASM	Any-Source Multicast
ATC	Air Traffic Control
ATFCM	Air Traffic Flow and Capacity Management
ATM	Air Traffic Management
ATN	Aeronautical Telecommunication Network
ATN/IPS	ATN using Internet Protocol Suite technologies
B2B	Business to Business
BCA	Bridge Certification Authority
BP	Blue Profile
BPMN	Business Process Model and Notation

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Term	Definition
CA	Certification Authority (in the context of PKI)
CBA	Cost Benefit Analysis
CC	Capability Configuration
CDM	Collaborative Decision Making
CDP	CRLs Distribution Point
CONOPS	Concept of Operations
COTS	Commercial Off The Shelf
CRL	(X.509) Certificate Revocation List
CRUD	Create, Read, Update and Delete (operations)
CSP	Certificate Service Provider
DDS	Data Distribution Service
DM	Dense Mode
DSP	Data-link Service Provider
EAD	European AIS Database
ECRYPT	European Network of Excellence in Cryptology
EFB	Electronic Flight Bag
EN	Enabler
ESB	Enterprise Service Bus
FAA	Federal Aviation Administration
FB	Functional Block
FR	Functional Requirement
FDRR-MEP	Fully Decoupled Request/Reply Message Exchange Pattern
FHA	Fault Hazard Analysis
FMS	Flight Management System
FO	Flight Object
G/G	Ground/Ground
GAT	General Air Traffic

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Term	Definition
HA	High Availability
HMI	Human-machine interface
HTTP(S)	HyperText Transfer Protocol (Secure)
IATA	International Air Transport Association
ICD	Interface Control Document
ICOG	Interoperability Consultancy Group
IdM	Identity Management
IdP	Identity Provider
IdSP	Identity Service Provider
IFE	In-Flight Entertainment
IGMP	Internet Group Management Protocol
IM	Information Management
INTEROP	Interoperability Requirements
IP	Internet Protocol
IPR	Intellectual Property Rights
IS	Industrial Support
ISRM	Information Service Reference Model
iSWIM	Initial SWIM (AF5 in the context of PCP)
IT	Information Technology
LAN	Local Area Network
LDAP	Lightweight Directory Access Protocol
MEP	Message Exchange Pattern
MET	Meteo or Meteorological
MEX	Metadata EXchange
MLD	Multicast Listener Discovery
MSG or MSG FB	SWIM-TI Messaging FB or briefly Messaging FB
MQbRR	Message Queuing based Request-Response

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Term	Definition
MQbPS	Message Queuing based Publish-Subscribe
NAF	NATO Architecture Framework
NATO	North Atlantic Treaty Organization
NFR	Non-Functional Requirement
NM	Network Management (CFMU)
NOP	Network OPerations or Network Operations Portal
NOTAM	NOTice To AirMen
NOV	NAF Operational View
NSOV	NAF Service-Oriented View
NSV	NAF System View
NTV	NAF Technical View
OASIS	Organization for the Advancement of Structured Information Standards
OCSP	Online Certificate Status Protocol
OFA	Operational Focus Area
OMG	Object Management Group
OPULL-MEP	Observer Pull Message Exchange Pattern
OPUSH-MEP	Observer Push Message Exchange Pattern
OS	Operating System
OSED	Operational Service and Environment Definition
OSI	Open Systems Interconnection
OTS	Off The Shelf
PAP	Policy Administration Point
PCP	EUR Pilot Common Project.
PDP	Policy Decision Point
PDR	Preliminary Design Review
PENS	Pan-European Network Service
PEP	Policy Enforcement Point

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Term	Definition
PIM	Protocol Independent Multicast
PIM-SM	PIM Sparse Mode
PIM-SSM	PIM Source-Specific Multicast
PIP	Policy Information Point
PIR	Project Initiation Report
PKI	Public Key Infrastructure
PP	Purple Profile
PSM	Platform Specific Model
PSPULL-MEP	Publish/Subscribe Pull Message Exchange Pattern
PSPUSH-MEP	Publish/Subscribe Push Message Exchange Pattern
QoS	Quality of Service
RA	Registration Authority (in the context of PKI)
RBAC	Role Based Access Control
RCP	Required Telecommunication Performance
REC or REC FB	Recording Functional Block or SWIM-TI Recording FB
REG or REG FB	Registry Functional Block or SWIM-TI Registry FB
REST	REpresentation State Transfer
RFC	Request For Comments (Internet Engineering Task Force terminology)
RPO	Recovery Point Objective
RSA	Rivest Shamir Adleman
RST	Request Security Token
RSTR	Request Security Token Response
RTD	Research and Technological Development
SAML	Security Assertion Markup Language
SAR	System Acceptance Review
SCVP	Server-Based Certificate Validation Protocol
SEC FB or SEC	Security Functional Block or SWIM-TI Security Functional Block

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Term	Definition
SEMP	System Engineering Management Plan
SESAR	Single European Sky ATM Research Programme
SESAR Programme	The programme which defines the Research and Development activities and Projects for the SJU.
SI	System Instance
SJU	SESAR Joint Undertaking (Agency of the European Commission)
SJU Work Programme	The programme which addresses all activities of the SESAR Joint Undertaking Agency
SLA	Service Level Agreement
SM	Sparse Mode
SMTP	Simple Mail Transfer Protocol
SO	Shared Object
SO or SO FB	Shared Object Functional Block or SWIM-TI Shared Object FB
SOA	Service Oriented Architecture
SOAP	Simple Object Access Protocol
SoS	System of Systems
SPA	SWIM Profile Assertion
SPD	SWIM Profile Descriptor
SPI	SWIM Profile Instantiation
SPR	Safety, Performance Requirements
SPV	SuPerVision
SPV or SPV FB	Supervision Functional Block or SWIM-TI Supervision FB
SRR-MEP	Synchronous Request/Reply Message Exchange Pattern
SSDD	System/Segment Design Document
SSL	Secure Socket Layer
SSM	Source-Specific Multicast
SSO	Single Sign-On
STI	Security Token Infrastructure
STS	Secure Token Service

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Term	Definition
SW	SoftWare
SWIM	System Wide Information Management
SWIM-TI	SWIM Technical Infrastructure
TAD	Technical Architecture Description
TCP	Transmission Control Protocol
TLS	Transport Layer Security
TRR	Test Readiness Review
TS	Technical Specification
UDDI	Universal Description Discovery and Integration
UDP	User Datagram Protocol
UML	Unified Modeling Language TM
UTC	Coordinated Universal Time [International Telecommunication Union (ITU)]
VA	Validation Authority (in the context of PKI)
VoIP	Voice over IP
VPN	Virtual Private Network
WAN	Wide Area Network
WIMP	What-if Manager Publisher (in the context of Flight Object concept/Blue Profile FDD Profile Part)
WP	Work Package
WS	Web Services
WSDL	Web Services Description Language
WSS	Web Services Security
XACML	eXtensible Access Control Markup Language
YP	Yellow Profile

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2 General Functional block Description

Even if the title of this chapter refers to a single FB, it concerns all the SWIM-TI functional, non-functional, standards and interface requirements applicable to the Yellow Profile. In both §2 and §3 the name of the chapters have not been updated in order to be compliant with SJU/IS Technical Specification (TS) template.

2.1 Context

A brief SWIM-TI overview is provided in §1.6. Refer to SWIM-TI TAD [13] for further details. In §2.3, §2.4 and §2.5 sections below introduction of key elements of the Yellow Profiles is provided.

SWIM-TI Technical Specifications deal with the "how" aspect of the SWIM-TI. More precisely, the Technical Specifications provide normative requirements concerning the SWIM-TI technical view [13].

As described in the SWIM-TI TAD [13], *the key component that can provide/realize/deploy the functions of the Functional decomposition view of the SWIM-TI is the SWIM-TI Node. A SWIM-TI Node is an autonomous point of presence in the Distributed System (of Systems) that interacts with other SWIM-TI Nodes in the Distributed System (of Systems).*

The point of presence makes a set of functionality via one SWIM-TI Node available to any SWIM-TI Node or allows use of the functionality that is made available by a SWIM-TI Node via one or more SWIM-TI Nodes.

The SWIM-TI Node is a generic element that could be specialised in categories. At the time of writing, there are two categories of specifications:

- The first category of specifications that are captured and grouped under the notions of SWIM Profile, Profile Part, Role and Self-standing set.
- The second category of specifications consists of those captured and grouped under the notions of shareable functions.

This Technical Specification applies to the first category restricting the scope according to the Yellow Profile SPA (§2.4). When applicable, the second category is also covered by specifications with "consumer" role of Self-standing set concerning shareable functions (e.g. PKI).

2.2 Functional block Modes and States

N/A.

2.3 Major Functional block Capabilities

In this section the SWIM-TI functional view applicable to the Yellow Profile is provided. The table below provided those SWIM-TI Functional Blocks, representing the SWIM-TI functional decomposition, applicable to the Yellow Profile.

Functional Block Name	Functional Block Code	Applicable SWIM Profiles	References
Messaging	**MSG**	Blue Profile **Yellow Profile** Purple Profile	**MSG Requirements applicable to the Yellow Profile are provided in §3.2.**
Security	**SEC**	Blue Profile **Yellow Profile** Purple Profile	**SEC Requirements applicable to the Yellow Profile are provided in §3.3.**
Supervision	**SPV**	Blue Profile **Yellow Profile**	**SPV Requirements applicable to the Yellow Profile are provided in §3.4.**
Recording	**REC**	Blue Profile **Yellow Profile**	**REC Requirements applicable to the Yellow Profile are provided in §3.5.**

Table 2-1: SWIM-TI Functional Blocks Applicable To Yellow Profile

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2.4 User Characteristics

The technical specification of this SWIM profile has been produced according to the SWIM Profile concept, guidelines and design [14]. In this section the SWIM Profile Assertion for the Yellow Profile is provided [14] in accordance with SWIM Profile design [14].

2.4.1 Yellow Profile SWIM Profile Assertion

2.4.1.1 Scope

Many types of information sharing in ATM do not have an immediate high safety critical context and can be satisfied by infrastructure that is less demanding and less sophisticated. Many services can be satisfied by a middleware providing generic functionality with a "Best Effort" QoS.

The YP is explicitly targeted at:

- support for a wide variety of interactions in a flexible manner and that is affordable for the service consumer.
- the interaction must be able to run over Internet and must be sufficiently secured
- use of technology based on the Web Services stack of standards
- the technology must be supported out-of-the-box by the mainstream development frameworks as well as mainstream execution frameworks.
- keeping as many options open as possible re. deployment

The YP is explicitly not targeted at contexts that require/impose:

- real-time or near real-time uses
- extremely high availability
- severe constraints re. available resources

The YP favours consistency above availability in the context of Brewer's CAP theorem.

2.4.1.2 Rationale

The Step 1 Profiles B2B EAD and B2B NOP both already covered a significant number of aspects in the scope described above. Both Step 1 Profiles, were architected in an SOA vision. Yet, some aspects were not elaborated because there was no need in their specific business context.
For some aspects both Step 1 Profiles complement each other and cover some of the gaps in the other Step 1 Profile. For other aspects, requirements are absent.
The YP is the generalisation of the Step 1 Profiles B2B EAD and B2B NOP through merging of specifications, widening specifications and modernizing specifications.

2.4.1.3 Structure

2.4.1.3.1 Considerations

2.4.1.3.1.1 Interoperability

####### 2.4.1.3.1.1.1 Overview

The technology interoperability for the YP is first of all based on the use of the Web Services stack of standards including bindings to lower layer protocols.

- An exhaustive implementation of the Web Services stack is problematic for a number of reasons: e.g. not all elements of the stack are broadly/equally supported, the standards are

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not always interpreted in a uniform manner and the exhaustive stack represents a significant amount of complexity that is not always needed or that may never be needed.

The use of the Web Services stack of standards for synchronous messaging is widespread and widely used. However use of Web Services stack of standard for asynchronous messaging is not considered suitable, despite the existence of specifications:

- The W3C Recommendation “SOAP over Java Message Service 1.0” of February 2012 does not define an interoperable wire protocol.
- The W3C Note “SOAP Version 1.2 Email Binding” of July 2002 only targets SOAP 1.2, lacks reliability features and has never seen widespread adoption.
- In order to be able to satisfy a wide variety of interactions, the AMQP v1.0 protocol has been selected to provide the support for the entire domain of asynchronous messaging.

The security solutions are another cornerstone element of technology interoperability of the YP.

- Many aspects of the distributed security needs (confidentiality, integrity, authenticity, accountability and non-repudiation) are targeted to be dealt with using technology based on PKI. Not all security technology and sophistication is needed in all cases.

- Specific aspects of the distributed security needs (e.g. authenticity) can be dealt with in a federated and/or centralized manner and abstract the client from the PKI technology. Whereas this provides potential added value to the client (e.g. single sign on), it also puts a burden on the client that may not be worth the investment.

The SWIM-TI part of syntactic interoperability is based on a variety of formats.

- Specific formats are required for the OGC protocols.

- Not all stakeholders in the targeted scope of the YP will have a need for interoperability through all of the formats.

A structure that mandates widely adopted minimal subsets of standards that are broadly shared amongst the stakeholders of the targeted scope of the YP, combined with optional sets of the standards would allow to accommodate both generic requirements as well as more specific requirements.

2.4.1.3.1.1.2 Variations and combinations

The subset of Web Services technologies that is SOAP based has been conceived to provide a framework that can be extended in a quasi-unlimited manner. The SOAP framework allows for a large number of variations and combinations.

Also an enumeration of applicable standards is not sufficient to promote and support interoperability:

- Some standards have two or more variants/versions that are current and valid (e.g. SOAP1.1 and SOAP1.2). Participants that are not aligned on variant or version to use, will not be able interoperate.

- Most standards have optional elements. Participants that are not aligned on the inclusion/exclusion of optional elements will not be able interoperate or will experience significant problems.

- There are standards with overlapping functionality (e.g. TLS and WS-SecureConversation). Participants that are not aligned on which standard to use in which context will not be able to interoperate or will experience significant problems.

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- Many security controls that address security needs (e.g. integrity, confidentiality, authenticity) can be realized through different standards both within the scope of the SWIM-TI (e.g. TLS and WS-Security) as well as in combination with security controls outside the scope of the SWIM-TI (e.g. confidentiality provided at network level). Participants that are not aligned on the standards used for security controls and the related security needs will not be able to interoperate.

- Some protocols allow to be part of protocol stacks that are assembled in a different manner (e.g. HTTP over TLS over TCP and HTTP over TCP). Participants that are not aligned on the stacking of protocols will not be able to interoperate.

Moreover, the standards themselves suffer from some issues that impact interoperability:

- Some standards suffer from quality problems such as errors and ambiguities (e.g. SOAP 1.1, WSDL 1.1). Participants that are not aligned on the interpretation of standards will not be able to interoperate or will experience significant problems.

- Some standards are recent and considered of higher quality than older versions but do not get market adoption or significant use (e.g. WSDL 2.0). Communication between participants based on elements that are not supported by all participants will not be able to interoperate.

- Some specifications have not yet reached the official standard status. Despite not having reached an official standard status, such specifications may need to be applied by all participants in a communication to be able to interoperate.

The large number of allowed variations and combinations represents a high number of distinct configurations that do not interoperate or will experience significant interoperability problems even if they all use the same standards. Support for all possible distinct configurations would represent a very large, complex and costly footprint. Most probably there would be no COTS available that provides such support.

The YP makes a selection of these combinations. The selection is performed on the base of following principles:

- Elimination:

  - Standards that do not provide functionality that is identified as needed and that do not provide functionality for which a need is anticipated, are eliminated

  - Standards that have been obsoleted by other standards and for which there is no more significant use, are eliminated.

  - Standards that do not provide unique added value, are eliminated.

- Optional:

  - Standards that are not supported/adopted/usable by mainstream middleware COTS (IBM, Microsoft, Oracle, Apache) are eliminated or allowed as an additional option besides a mandatory standard

  - Standards that are not supported/adopted/usable by mainstream development frameworks (Java-based and.NET-based) are eliminated or allowed as an additional option besides a mandatory standard.

- Consumer friendliness:

  In some cases a service consumer may want/need to reuse existing infrastructure and existing experience with some specific standards for which another equivalent and equally valid standard

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exists. Depending on the possible impact and difficulty for a consumer to adapt, in such case the service provider may be mandated to provide access to the service in multiple ways.

The backbone of the SOAP framework is the SOAP protocol itself. There are 2 versions that are current, valid and standard: SOAP1.1 and SOAP1.2. Despite the presence of a number of improvements in SOAP1.2, SOAP1.1 is not deprecated. The WSI organisation that issues recommendations on how to use various elements in the SOAP framework to promote interoperability does not give preference to one of both as it published the WSI Basic Profile 1.2 (for SOAP1.1) and WSI Basic Profile 2.0 (for SOAP1.2) at exactly the same moment: November 9, 2010

- Minimal security at the level of external service interfaces:

Any configuration of standards linked with a service interface must include a security control that provides a means to verify the integrity of the data that is communicated as well as a security control that allows authentication of either consumer, either provider or both.

- "One size does not fit all":

Distinct Use Cases within the YP can have some form of competing requirements. An example of such competing requirements consists of different ways of securing (confidentiality, integrity and authenticity), the exchange of multiple messages between consumer and provider (see http://en.wikipedia.org/wiki/WS-Security#Performance).

- A first solution: the exchange of all the messages can be performed through TLS which provide a form of shared security context and which will provide good performance. However the security controls do not have an end-to-end scope.

- A second solution: each message can be signed and encrypted using WS-Security: the security controls do have an end-to-end scope. However performance will suffer very significantly.

- A third solution: WS-Security and WS-SecureConversation are combined: the performance will be significantly better than in the second solution and the security controls do have an end-to-end scope. However the performance will not be as good as the first solution and there is a significant increase of complexity and interdependencies between distinct standards and versions.

When each of above represents the correct solution for a Use Case, a technical configuration for each of above could be included in the Yellow Profile.

- Variations in security:

The flexibility and extensibility provided by the SOAP framework allows distinct security mechanisms to be combined, allowing for very sophisticated and complex solutions. In order to be able to limit the number of security mechanisms, the complexity and footprint of the SWIM Profile, the requirements related to security needs and controls to provide the functionality, are structured along 3 main axes.

- The scope of the protection: transport level and network level. The Use Cases that can be satisfied with one type of scope cannot typically be satisfied with the other type of scope. For instance message level security is required to support non-repudiation, transport level security is required for performance. Message level security provides an end-to-end scope, transport level security a point-to-point protection.

- Local identity management versus federated identity management. Local identity management is very flexible and provides autonomy but fails to scale. Federated identity management scales very well but adds complexity.

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- The type of credentials. The requirements explicitly mention the need for user/password authentication as well as X.509 certificate based authentication. To take advantage of a federated identity management, additionally a SAML Token is required.

The supported number of variations is kept to a minimum when the security mechanisms cover and support the variations of the 3 main structuring elements of security.

2.4.1.3.1.2 Reuse and size

Merging alone of two Step 1 Profiles that complement each other into a single profile combined with additional requirements will lead to a greater functional and non-functional footprint. This will increase the probability of reuse but may make the Profile too heavyweight to match the affordable dimension of the scope.
See also §2.4.1.3.1.1.2.

2.4.1.3.1.3 Constraints, competing requirements and risks

There is a high probability that for some of the participants using the YP - intentionally covering a large scope -, distinct forms of regulation and/or certification will be imposed on the technical infrastructure.
Generalizing these regulations and/or certifications would at best create a significant amount of unnecessary requirements for many participants. In less favourable conditions, the requirements provided by regulations and/or certifications could be conflicting.

2.4.1.3.1.4 Modular structure

The considerations above provide indications that a number of variations of requirements will exist within the context of the YP having a significant shared common footprint of requirements with specific extensions that should not be imposed onto all implementations.
Also, some QoS criteria will not be uniformly shared.

2.4.1.3.1.5 Lifecycle of the SWIM Profile

The Web Services stack of standards is very mature.

- According to Gartner, IBM and Microsoft are satisfied with the status of the Web Services stack and they have finalized their contributions around 2009. No major gaps have been identified in the technology either. The probability of major changes or a high frequency of changes in future is thus very low.

- There is a ubiquitous support in development frameworks and execution frameworks for the common aspects of the Web Services stack of standards and there are no signs/announcements of major players quitting the technology or parts of the technology.

The AMQP v1.0 specification has become an OASIS standard in October 2012 and the same specification has also become an ISO/IEC standard in May 2014.

- Despite the relatively recent adoption of the standard, the foundations for AMQP v1.0 go way back and have been laid already in 2003.

- Commercial solutions with full support for AMQP v1.0 are available for instance from Microsoft, IBM and IIT Software. One major commercial middleware player, Oracle, provides no support at all for AMQP v1.0. Open Source AMQP v1.0 solutions are available for instance from Apache (multiple) and AMQP.Net Lite. Full support for Open Source AMQP v1. 0 solutions is available for instance from Red Hat.

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- The AMQP v1.0 core standard looks very stable: no corrections/errata have been published since October 2012 and there is no public information of any working groups active on a successor of the AMQP v1.0 core standard. A number of extensions to the core standard have been identified and standardisation work on these extensions is ongoing. Some of these extensions could reveal to be useful in the context of the Yellow Profile. This is the case for two extensions in particular: Global Addressing and Management. When published and standardised and found suitable and appropriate, these could be incorporated in the Yellow Profile.

The PKI related technology is very mature. Little or no change is to be expected from this side.
The technology related to federation of security and policy management is less mature and there is a significant probability that changes are to be expected.
From a FR and NFR point of view, many requirements have been issued in a Bottom-Up manner and have not yet been confirmed by Top-Down requirements. There is a high probability that FR and/or NFR of the YP will change.

2.4.1.3.1.6 Design rules

There is no conflict of the scope of the YP with the design rules described in SWIM Profile definition §5.2.4 [14].

2.4.1.3.1.7 Design criteria

The inventoried needs clearly indicate that the YP should provide a Synchronous Request/Reply, Publish/Subscribe Push and Publish/Subscribe Pull as a minimum MEPs.
The inventoried needs indicate that the YP should provide asynchronous messaging for a number of use cases.
The inventoried needs clearly indicate that some business contexts have strict and/or higher requirements on availability and response time than other business contexts.
The inventoried needs clearly indicate that some business contexts have security requirement that are absent from other business contexts.

2.4.1.3.2 Recommended structure

Considering:

- the need to provide a minimum solution that is consumer-friendly, affordable, lightweight, flexible and mainstream and the need to provide a minimum solution that covers distinct security needs,

- the need for a subset of Stakeholders to build on top of the minimum solution that represents a common technology footprint and to add significant security functionality to it, in terms of strength, manageability and scalability, but leading to a significant increase of complexity,

- the need for a subset of Stakeholders to build on top of the minimum solution that represents a common technology footprint and to add significant performance and reliability functionality to it such as availability and response time, but leading to a significant increase of cost at the provider side,

- and the need for a subset of Stakeholders to build on top of the minimum solution that represents a common technology footprint and to add asynchronous messaging functionality to it based on an open standardised wire protocol,

a single solution including all features would create a too large footprint for too many Stakeholders.
As the elements that are only of interest for a subset of Stakeholders, share a common technology footprint, these elements are distinguished as 3 optional Profile Parts of the Yellow Profile that can be

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combined with the minimum solution that is shared by all Stakeholders. This minimum solution is the “core” part of the Yellow Profile. One optional Profile Part provides the additional security functionality and another optional Profile Part provides the performance and reliability functionality.

"Core" YP:

- Common MEP's
- FR that can easily be met with out-of-box technology solutions
- NFR based on what is commonly available today in a more or less out-of-the-box manner
- Broadly supported elements of the Web Service stack of standards
- Support for big data sets
- Support for binary data
- Broadly supported compression techniques
- PKI based security solutions
- Support for message signing to satisfy integrity and authenticity needs
- Support for AMQP v1.0 messaging technology

"Security+" Profile Part for the YP:

- Side-by-side, only depends on the "core", does not depend on any other set of requirements and can be combined with any other Profile Part in the YP.
- Scope:
  - Support for Federated security and Policy Management
  - (More) strictness on TLS
  - (More) strictness on symmetrical/asymmetrical Keys
  - (More) strictness on security patching capabilities

"Advanced" Profile Part for the YP:

- Side-by-side, only depends on the "core", does not depend on any other set of requirements and can be combined with any other Profile Part in the YP.
- Scope:
  - Additional Messaging FR: e.g. message persistence, subscriber persistence
  - Higher availability
  - Lower maximum transit time in the SWIM-TI

"Messaging+" Profile Part for the YP:

- Side-by-side, only depends on the "core", does not depend on any other set of requirements and can be combined with any other Profile Part in the YP.
- Scope:
  - Support for additional MEPs.

2.4.1.4 Conformance Statements

As documented in the requirements guidelines [15], even if grouping of requirements in Profiles, Profile Parts, Roles and Selfstanding Sets reduces the amount of variability, there typically still remains a certain amount of variability within such groups. This variability can be interpreted differently by different involved parties. Different interpretations can lead to situations whereby interoperability is impeded. In order to avoid possibly distinct interpretations and resulting implementations of the technical specification of a SWIM Profile that do not interoperate, clarification is provided through a special kind of requirements that contain criteria to claim conformance for any of the groupings (Profiles, Profile Parts, Roles and Selfstanding Sets). In this section conformance requirements (or statements) applicable to this technical specification are provided.
Furthermore, in §3.1.8 additional design constraints concerning identified Profile Parts are provided.

[REQ]

Identifier	REQ-14.01.04-TS-1011.0010
Requirement	A conforming implementation for any role in the Yellow Profile shall only make use of requirements expressed in the applicable Yellow Profile Profile Parts

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Title	Conformance all Roles
Status	<In Progress>
Rationale	Clarification on Yellow Profile conformance for all Roles
Category	<MetaData>
Validation Method	
Verification Method	<Review of Design>
Profile Part	<YP Core><YP Security+><YP Advanced><YP Messaging+>
Domain of interest	<ICD><SLA><Governance><Function/Behaviour>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Subscription handler><Publisher><Publication consumer><Publication mediator><Identity Management consumer>
Selfstanding set	<Not applicable>
Conformance	<Yes>
High Level	<No>
Testability	<Applicable but not testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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[REQ]

Identifier	REQ-14.01.04-TS-1011.0020
Requirement	A conforming implementation for a <Service provider> role shall select one or more Selfstanding Sets of the type <Service Binding> and one or more Selfstanding Sets of the type <Network Binding>
Title	Conformance Service Provider
Status	<In Progress>
Rationale	Clarification on <Service provider> conformance. A service provider can select what is needed to provide the service. Selfstanding Sets of the type <Network Binding> applicable to a given Selfstanding Set of the type <Service Binding> are provided in its REQ Trace table.
Category	<MetaData>
Validation Method	
Verification Method	<Review of Design>
Profile Part	<YP Core><YP Security+><YP Advanced><YP Messaging+><BP Core><BP FDD><PP Core><PP Messaging Bridging>
Domain of interest	<ICD><SLA><Governance><Function/Behaviour>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider>
Selfstanding set	<Not applicable>
Conformance	<Yes>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

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Relationship	Linked Element Type	Identifier	Compliance
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[REQ]

Identifier	REQ-14.01.04-TS-1011.0040
Requirement	A conforming implementation for a <Publisher> role shall support one or more Selfstanding Sets of the type <Service Binding> that include the value <Publisher> in the attribute Role and one or more Selfstanding Sets of the type <Network Binding>
Title	Conformance Publisher
Status	<In Progress>
Rationale	Clarification on <Publisher> conformance. A Publisher can select what is needed to publish. Selfstanding Sets of the type <Network Binding> applicable to a given Selfstanding Set of the type <Service Binding> are provided in its REQ Trace table.
Category	<MetaData>
Validation Method	
Verification Method	<Review of Design>
Profile Part	<YP Core><YP Security+><YP Advanced><YP Messaging+><BP Core><BP FDD><PP Core><PP Messaging Bridging>
Domain of interest	<ICD><SLA><Governance><Function/Behaviour>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Publisher>
Selfstanding set	<Not applicable>
Conformance	<Yes>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

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[REQ]

Identifier	REQ-14.01.04-TS-1011.0050
Requirement	A conforming implementation for a <Subscription handler> role shall support one or more Selfstanding Sets of the type <Service Binding> that include the value <Subscription handler> in the attribute Role and one or more Selfstanding Sets of the type <Network Binding>
Title	Conformance Subscription Handler
Status	<In Progress>
Rationale	Clarification on <Subscription handler> conformance. A subscription handler can select what is needed to handle to subscriptions. Selfstanding Sets of the type <Network Binding> applicable to a given Selfstanding Set of the type <Service Binding> are provided in its REQ Trace table.
Category	<MetaData>
Validation Method	
Verification Method	<Review of Design>
Profile Part	<YP Core><YP Security+><YP Advanced><YP Messaging+><BP Core><BP FDD><PP Core><PP Messaging Bridging>
Domain of interest	<ICD><SLA><Governance><Function/Behaviour>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Subscription handler>
Selfstanding set	<Not applicable>
Conformance	<Yes>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

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<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-1011.0080
Requirement	A conforming implementation for a <Publication mediator> role shall support one or more Selfstanding Sets of the type <Service Binding> that include the value <Publication mediator> in the attribute Role and all Selfstanding Sets of the type <Network Binding>.
Title	Conformance Publication mediator
Status	<In Progress>
Rationale	Clarification on <Publication mediator> conformance. A publication mediator can select what is needed to make the publications available. Selfstanding Sets of the type <Network Binding> applicable to a given Selfstanding Set of the type <Service Binding> are provided in its REQ Trace table.
Category	<MetaData>
Validation Method	
Verification Method	<Review of Design>
Profile Part	<YP Core><YP Security+><YP Advanced><YP Messaging+><BP Core><BP FDD><PP Core><PP Messaging Bridging>
Domain of interest	<ICD><SLA><Governance><Function/Behaviour>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<Yes>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
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<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
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<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
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2.5 Operational Scenarios

P14.01.04 Technical Specifications are driven by user and technical Use Cases detailed in collaboration with 14.01.03.

Furthermore, in the table here below the SESAR Enablers relevant for the Yellow Profile are provided. The current analysis is based on the latest Data Set available in the SESAR Programme (https://www.atmmasterplan.eu//enablers), namely version "Data Set 15".

Enablers (Data Set 15) belonging to the SWIM Operational Focus Area (ENB02.01.01) have been analysed to evaluate their relationships (if any) with the SWIM-TI and especially with the SWIM-TI Technical Specifications. In accordance with this analysis, all the requirements have been linked to one or more applicable Enablers. The semantic of this relationship is that the realization of the traced enabler includes the implementation of the concerning SWIM-TI requirements. It has to be noted that in many cases, the scope of the enabler is not fully covered by the SWIM-TI layer. In such cases, the full scope of the enable is covered by both the application and infrastructure layers.

Table 2-2: SESAR Enablers Relevant for SWIM-TI Yellow Profile TS

Enabler Code	Brief Description	Applicable SWIM Profiles / SWIM-TI Functions
GGSWIM-10c	Evolution to manage the SWIM infrastructure, including such aspects as access control, information security, quality of service monitoring etc. This technical enabler considers not only the local supervision but also the supervision of different nodes in the SWIM network.	**Yellow Profile (YP), SWIM-TI Information Security, SWIM-TI Identity Management, SWIM-TI Supervision. (only local supervision)**
SWIM-SUPT-06b	Evolution to manage the SWIM infrastructure, including such aspects as access control, information security, quality of service monitoring etc. This technical enabler considers not only the local supervision but also the supervision of remote technical infrastructure in the SWIM network.	**Yellow Profile (YP), SWIM-TI Information Security, SWIM-TI Identity Management, SWIM-TI Supervision. (only local supervision)**
GGSWIM-51c	Ground-ground messaging services that support exchange of messages between any centres (ATCC, Airport ATC, Military, etc).	**Yellow Profile (YP), SWIM-TI Messaging**
GGSWIM-58c	One or more (i.e. federated) registry systems to provide the European ATM Service catalogue service. The registry stores information about services and related standards, policies, certifications and categories (taxonomies). The registry provides the ability to publish, discover, subscribe and manage dependencies between the services. (Step 3)	**Yellow Profile (YP), SWIM-TI Run-Time Registry**
SWIM-SUPT-01b	One or more (i.e. federated) registry systems to provide the European ATM Service catalogue service. The registry stores information about services and related standards, policies, certifications and categories (taxonomies). The registry provides the ability to publish, discover, subscribe and manage dependencies between the services. (Step 2)	**Yellow Profile (YP), SWIM-TI Run-Time Registry**
GGSWIM-59c	SWIM Technical infrastructure to support transport and message level security, identity management (local and federated) to provide authentication and authorization. Also includes	**Yellow Profile (YP), SWIM-TI Information Security, SWIM-TI Identity Management**

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	use of public key cryptography (PKI). (Step 3)	
SWIM-SUPT-03b	SWIM Technical infrastructure to support transport and message level security, identity management (local and federated) to provide authentication and authorization. Also includes use of public key cryptography (PKI). (Step 2)	**Yellow Profile (YP), SWIM-TI Information Security, SWIM-TI Identity Management**
SWIM-INFR-05a	Provision of the additional functionality needed by the individual Stakeholder to support their SWIM applications provision/consumption of General SWIM Service. This enabler addresses the need for each stakeholder to provide the necessary additional functionality to address the messaging protocol, security, resilience, and other SWIM Profile related aspects for the provision/consumption/exchange of these general (i.e. not High Criticality) types of SWIM Services with other stakeholders, by means of Internet Protocol (IP) connectivity via in-common IP network(s). (Step 1)	**Yellow Profile**
SWIM-INFR-05b	Provision of the additional functionality needed by the individual Stakeholder to support their SWIM applications provision/consumption of General SWIM Service. This enabler addresses the need for each stakeholder to provide the necessary additional functionality to address the messaging protocol, security, resilience, and other SWIM Profile related aspects for the provision/consumption/exchange of these general (i.e. not High Criticality) types of SWIM Services with other stakeholders, by means of Internet Protocol (IP) connectivity via in-common IP network(s). (Step 2)	**Yellow Profile**

2.6 Functional

2.6.1 Functional decomposition

Refer to SWIM-TI TAD §2.1.1 [13].

2.6.2 Functional analysis

The functional view of the Yellow Profile is provided in Table 2-1. In the table below the sharable functions [13] applicable to this SWIM-TI profile are provided.

Sharable Function	Code	Brief Description
Registry	**REG**	**The Registry is the sharable function to retrieve META Information about the Services and the ATM Information provided by them. It also generically provides discovery/subscription, publication, classification, management (including create, delete, updated, read) and deployment functions for diverse entities such as policies, standards, certifications and categories.**
Identity Management	**PKI,**	**The SWIM-TI PKI is responsible for signing, emitting and**

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Sharable Function	Code	Brief Description
	STI	**maintaining certificates and revocation lists after verification of requester identity for the benefit of SWIM stakeholders that have not this facility. The SWIM-TI STI is responsible for signing, emitting and maintaining security tokens.**

Table 2-3: Brief Description of SWIM-TI Sharable Functions Applicable To Yellow Profiles

Functional, non-functional, applicable standards and interface requirements applicable to the SWIM-TI Yellow Profile for the Messaging, Security, Supervision and Recording are provided in §3. The technical specifications concerning the SWIM-TI Identity Management and the SWIM-TI Run-time Registry are provided in 14.01.04.D44-002 and 14.01.04.D44-003 respectively [15].

2.7 Service View

N/A.

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3 SWIM Yellow Profile Functional and non-Functional Requirements

In this chapter functional, non-functional and interface requirements are provided. The chapter is organized in several sub-chapters. The first level of decomposition is between requirements that apply to all the technical functions (§3.1) – or in general to the SWIM Node at a whole - and those that are specific to a given technical function (§3.2, §3.3, etc.). The technical functions are from functional and technical views detailed in the SWIM-TI TAD [13].

The second level of decomposition is between functional, non-functional and interface requirements. In particular, each sub-chapter §3.X is structured as follows:

- Functional requirements (§3.X.1).
- Non-functional requirements, which include the following NFRs:
  - Adaptability (§3.X.2), which contains requirements related to growth and expandability.
  - Performance Characteristics (§3.X.3), which contains requirements concerning capacity, accuracy, timing performances, software resource usage, etc..
  - Safety and Security (§3.X.4), which contains security and privacy requirements, including access limitations, data protection and recovery methods; it also includes safety requirements(according to the safety analysis based on respective standards – when available).
  - Maintainability (§3.X.5), which contains quantitative maintainability requirements.
  - Reliability (§3.X.6) which contains requirements concerning the robustness to abnormal operating conditions.
  - Internal Data Requirements (§3.X.7).
  - Design and Construction Constraints (§3.X.8).
  - Interface requirements (§3.X.9), which contains the specification of the interfaces (including external, internal and network bindings).

If in one or more sub-sections of §3.2, §3.3, etc., no requirements concerning a given category (e.g. Design and Construction Constraints) are provided, all those (if any) included in the concerning §3.1 section (e.g. §3.1.8) are applicable. This approach has been adopted to avoid the duplication of (similar) requirements.

The third level of decomposition concerns the NFRs: all the sections have been organized according to NFR characteristics and sub-characteristics defined in the ISO/IEC 25010:2011. For instance, §3.X.3 (Performance Characteristics) has been traced to ISO/IEC 25010:2011 “Performance efficiency” NFR characteristic. According to that, §3.X.3 has been decomposed by providing a section for each ISO/IEC 25010:2011 “Performance efficiency” sub-characteristics (i.e. time behaviour, resource utilization and capacity requirements). The adoption of ISO/IEC 25010:2011 as reference is coherent and consistent with the SWIM Profiles definition [14].

In the TAD [13], the SWIM-TI Security functional and technical views are described. This specification includes all the identified requirements representing the “what” and the “how” concerning those views. This specification is then complemented by the SWIM-TI Identity Management Technical Specification [15]. In accordance with ISO/IEC 25010:2011, for each §3.X sub-chapters, a specific section concerning the security has been provided. Requirements included in those sections are security requirements applicable to the SWIM Node or/and to the specific technical function (e.g. Messaging). The same applies to the SWIM-TI Security for which security requirements have been identified. For instance, the access to SWIM-TI Security function configurations shall be restricted to authorized users only: this is an example of “security requirement” applicable to the SWIM-TI Security technical functions.

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For additional details about SWIM-TI TSs requirements guidelines and the mapping between ISO/IEC 25010:2011 characteristics and TS table of content, refer to [15].

The interface requirements sections section (§3.X.9) has been decomposed according to interface binding kinds described in the TAD [13]. In particular, when applicable, following decomposition is adopted:

- Service Interface bindings, which contains the specifications concerning the “Service Binding”. This kind of binding is external to the SWIM-TI and related to an ATM specific service only.
- Internal Service Interface bindings, which contains the specifications concerning the “Internal Service Binding”. This kind of binding is internal to the SWIM-TI only and related to any such internal service (e.g. PKI services).
- Network Interface bindings, which contains the specifications concerning the “Network Binding”. This kind of binding is external to the SWIM-TI and related to the Network only.
- External Service Interface bindings, which contains the specifications concerning the “External Service Binding”. This kind of binding is external to the SWIM-TI and not a <Service binding> or a <Network binding> (e.g. Time Service).

A given binding of type “Service Binding” or “Internal Service Binding” or “External Service Binding” relies on one specific “Network Binding” (traced in the concerning REQ Trace table). Yellow Profile “Service Binding” specifications are provided in §3.2.9.1. “Network Binding” specifications applicable to the Yellow Profile “Service Binding” and “Internal Service Binding” are provided in §3.1.9.2.

Internal Service Interface bindings identified for the Yellow Profile are:

- X.509 certificates management, which includes interfaces at SWIM-TI layer provided by SWIM-TI PKIs to allow Information Security related functions to retrieve, renewal, verify, etc. X.509 certificates used by security controls at transport (e.g. TLS/SSL) or message levels. This interface bindings – consumer role - are provided in §3.3.9.1. The source of these bindings is the 14.01.04.D44-002 (SWIM-TI Identity Management Technical Specification).
- Security tokens management, which includes interfaces at SWIM-TI layer provided by SWIM-TI STIs to allow Information Security related functions to retrieve, renewal, verify, etc. security tokens used by security controls at message levels. This interface bindings – consumer role - are provided in §3.3.9.1. The source of these bindings is the 14.01.04.D44-002 (SWIM-TI Identity Management Technical Specification).
- SWIM-TI Registry interface bindings, which includes interface at SWIM-TI layer provided by the SWIM-TI Run-Time Registry(ies) to allow the lookup of ATM services endpoint and policies management. This interface bindings – consumer role - are provided in §3.2.9.2. The source of these bindings is the 14.01.04.D44-003 (SWIM-TI Run-Time Registry Technical Specification).

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3.1 Overall Functional and non-Functional requirements

It is to be noted that all specifications that refer to configurability through policy, can be satisfied by a local policy as well as by a common policy. Hence the mention of a policy does not mandate the use of a common policy unless there is an explicit mention that the policy is managed through the Registry.

3.1.1 Capabilities

This section includes functional requirements applicable to the SWIM Node at a whole.

[REQ]

Identifier	REQ-14.01.04-TS-0011.0020
Requirement	The SWIM-TI shall provide a consumer access to services on an access threshold policy basis for overload prevention.
Title	SWIM-TI Performance Overload Protection
Status	<Validated>
Rationale	This requirement prevents a single consumer from using all available resources, allowing other consumers requests to be processed. For instance, the total number of requests for each Service Consumer by a maximum value or a maximum ratio (number of requests within a time window) will be restricted. This requirement covers NIST security controls SC-5 (1) and AC-23.
Category	<Performance><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscriber><Publisher><Publication consumer>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	SWIM-TI	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
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[REQ]

Identifier	REQ-14.01.04-TS-0211.0050
Requirement	The SWIM-TI shall provide policy based resources performance management including:

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	- Resource computation policy. - Resource communication policy. - Resource memory utilization policy. - Scheduling policies.
Title	SWIM-TI performance and scalability
Status	<Validated>
Rationale	The SWIM-TI resources provide the end-to-end communications for SWIM-TI users. It is possible to provide where necessary to support performance, the policies for resource utilisation and scheduling (Ref: OMG performance QoS characteristics). Each technical infrastructure resource effecting performance can have policy based management to define computation, communication and memory resource utilisation and scheduling. This requirement covers NIST security controls SC-5
Category	<Performance><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscriber><Publisher><Publication consumer>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	SWIM-TI	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0011.0040
Requirement	The Service SLA agreements established between service providers and consumers shall be stored in the Registry.
Title	SWIM SLA Policy Management
Status	<In Progress>
Rationale	The ability to store and update service SLAs (e.g. service performance level, availability)
Category	<Functional>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core>
Domain of interest	<SLA><Governance>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer>
Selfstanding set	<Not applicable>
Conformance	<No>

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High Level	<Yes>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	SWIM-TI	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
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3.1.2 Adaptability

This section includes adaptability requirements as documented in ISO/IEC 25010:2011. In particular, requirements included in this section refer to adaptability sub-characteristic of portability NFRs.

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

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3.1.3 Performance Characteristics

This section includes performance efficiency requirements as documented in ISO/IEC 25010:2011. The structure of the section is in accordance with performance efficiency NFR sub-characteristics described in ISO/IEC 25010:2011: (§3.1.3.1) time behaviour, (§3.1.3.2) resource utilization and (§3.1.3.3) capacity.

SWIM-TI Performance & Scalability

The SWIM-TI (SWIM node) performance will be based on measurements and constraints. The basis of the performances is Operational Work Packages, the ISRM, ICOG study, ED-133 OMG QoS Performance patterns and the NFR assessments for the Step 1 EAD B2B Profile and the Step 1 NOP B2B Profile.

- The information from these sources is a set of measurable entities including Latency, Throughput, Efficiency and Demand.
- Some of the available measurements apply to overall performances covering the ATM specific service, the SWIM-TI and the Communication Network e.g. Latency. It will be possible to transpose the SWIM-TI performance from the data.

The SWIM-TI QoS will provide network signalling priority (e.g. best-effort) and payload quality of service identifier (e.g. payload QoS).

SWIM-TI scalability is supporting the growth of demand on services e.g. the number of service consumers and volume of information exchange.

The set of requirements should include only SWIM-TI specific performance/scalability.

Policies

The SWIM-TI performance and scalability requirements use policies to manage performances. The use of policies is in the use-cases to apply efficiency measures to messages such as the use of compression and message priority. The measures are related to specific rules of the policy and may have a relationship with a particular stakeholder and the context/importance of the message.

Further and more specialised performance policies related to efficiency characteristics will be defined later. These later specializations relate for resource-utilization and describe the utilization of computation, communication, and memory resources for network elements.

As a significant contributor to the performance QoS characteristic, the policies will be supporting the performance objectives (functional & non-functional) defined for the SWIM-TI and support the end-users' expectations (often formalized within Service Level Agreements, SLA).

3.1.3.1 Time behaviour Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.1.3.2 Resource utilization Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.1.3.3 Capacity Requirements

[REQ]

Identifier	REQ-14.01.04-TS-0211.0030

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Requirement	The SWIM-TI shall support a minimum bandwidth of 100Mbps for data throughput rate.
Title	SWIM-TI Scalability Capacity
Status	<In Progress>
Rationale	This is based only an on estimate minimum required throughput rate proposed by ICOG study for the Blue Profile. If such throughput rate is required, then the SWIM-TI must be capable to support it. If the Network allows for such rate then, the SWIM-TI should also be able to support this rate.
Category	<Performance>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core>
Domain of interest	<SLA>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

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3.1.4 Safety & Security

This section includes security requirements as documented in ISO/IEC 25010:2011. The structure of the section is in accordance with security NFR sub-characteristics described in ISO/IEC 25010:2011: (§3.1.4.1) confidentiality, (§3.1.4.2) integrity, (§3.1.4.3) non-repudiation, (§3.1.4.4) accountability and (§3.1.4.5) authenticity. Furthermore, according to SJU guidelines, a dedicated subsection (§3.1.4.6) is provided for safety requirements.

[REQ]

Identifier	REQ-14.01.04-TS-0411.0030
Requirement	The SWIM-TI Administrative Console shall notify user of: + Privacy and security notices consistent with applicable national and international laws, + Date and time of the last log-on.
Title	SWIM-TI administration console notifications
Status	<In Progress>
Rationale	SWIM-TI offers different functions that need to be managed and tuned by human users. For this reason administrative console can be attached to SWIM-TI to control one or more SWIM Functions. Technical details of such consoles depends on implementation choices (e.g. shell or graphical interfaces) but each console shall guarantee a certain level of security and compliance with current regulations. This requirement ensures that SWIM-TI Administration Console offers some necessary notification to the user logging-in into the system. This requirement covers NIST Security Control 800.53 AC-8, AC-9.
Category	<Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Advanced><BP FDD>
Domain of interest	<SLA><Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	SWIM-TI	N/A
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0411.0040

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Requirement	The SWIM-TI Administrative Consoles remote connections shall be established using only encrypted VPN connections.
Title	Remote connection for administration console
Status	<In Progress>
Rationale	SWIM-TI provides different functions that need to be managed and tuned by human users. For this reason administrative console can be attached to SWIM-TI to control one or more SWIM Functions. Technical details of such consoles depend on implementation choices (e.g. shell or graphical interfaces) but each console shall guarantee a certain level of security and compliance with current regulations. This requirement ensures that SWIM-TI Administration Console communicating through external networks (e.g. the Internet) enhances confidentiality and integrity over remote connections using encrypted virtual private networks (VPNs). This requirement covers NIST Security Control 800.53, AC-17 and SC-11.
Category	<Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+><BP FDD>
Domain of interest	<SLA><Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator><Identity Management provider><Identity Management consumer>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Applicable but not testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	SWIM-TI	N/A
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0411.0050
Requirement	The SWIM-TI Administration Console shall obscure typing feedback on screen for authentication password.
Title	SWIM-TI administration console authentication feedback
Status	<Validated>
Rationale	SWIM-TI provides different functions that need to be managed and tuned by human users. For this reason administrative console can be attached to SWIM-TI to control one or more SWIM Functions. Technical details of such consoles depend on implementation choices (e.g. shell or graphical interfaces) but each console shall guarantee a certain level of security and compliance with current regulations. This requirement ensures that SWIM-TI Administration Console hide sensitive

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	authentication information, i.e. password, when it is typed during log-in, preventing password stealing from unauthorized personnel. This requirement covers NIST Security Control 800.53 AC-8, IA-6.
Category	<Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+><BP FDD>
Domain of interest	<SLA><Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	SWIM-TI	N/A
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0411.0060
Requirement	Adopted deployment shall comply with the current national security regulations each of the Countries where it is subjected to those regulations.
Title	SWIM Node compliance with national security regulations
Status	<In Progress>
Rationale	The requirement assures that national security regulation has to be complied with when implementing a SWIM node for a given country. This requirement covers NIST Security Control 800.53 IA-8.
Category	<Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core>
Domain of interest	<SLA><Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A

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<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	SWIM-TI	N/A
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0411.0070
Requirement	The SWIM-TI shall be able to operate at least in two modes of operation: - normal, allowing all functionalities, - safe mode, allowing only mission critical functionalities.
Title	SWIM-TI Operational Modes
Status	<In Progress>
Rationale	Due to the mission critical environment in which SWIM-TI is implied, it is necessary to restrict the types of activities that shall be carried out when certain adverse conditions are met, e.g. reduced communication bandwidth or limited computational resources. In such conditions it is fundamental to guarantee that mission critical functionalities provided by SWIM-TI are kept on by entering in a safe mode of operation for SWIM-TI. This requirement ensures that if a functionality is deemed mission critical it is privileged when shortages of resources occur. This requirement covers the following NIST security controls: CP-12.
Category	<Security><Reliability>
Validation Method	
Verification Method	<Review of Design><Analysis>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<SLA><Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<ALLOCATED_TO>	<Functional block>	SWIM-TI	N/A
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
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<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>

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<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0411.0080
Requirement	The SWIM-TI shall allow to specify mission critical functionalities in order to define a safe mode of operation.
Title	SWIM-TI Safe Mode Definition
Status	<In Progress>
Rationale	Due to the mission critical environment in which SWIM-TI is implied, it is necessary to restrict the types of activities that shall be carried out when certain adverse conditions are met, e.g. reduced communication bandwidth or limited computational resources. In such conditions it is fundamental to guarantee that mission critical functionalities provided by SWIM-TI are kept on by entering in a safe mode of operation for SWIM-TI. This requirement covers the following NIST security controls: CP-12.
Category	<Functional><Security><Reliability>
Validation Method	
Verification Method	<Review of Design><Analysis>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<SLA><Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<ALLOCATED_TO>	<Functional block>	SWIM-TI	N/A
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
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[REQ]

Identifier	REQ-14.01.04-TS-0411.0090
Requirement	Access control to SWIM-TI management functionalities shall be granted leveraging on RBAC mechanisms.
Title	Partitioning of functionalities

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Status	<In Progress>
Rationale	Management functionalities include, for example, functions necessary to administer databases, network components, workstations, or servers typically require privileged user access. In order to allow access only to authorized users, SWIM-TI shall use an RBAC model to gain access to management functionalities. This requirement covers NIST security control SC-2
Category	<Security><Design>
Validation Method	
Verification Method	<Review of Design><Analysis>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD><Governance>
Point of view	<SWIM-TI provider>
Roles	<Identity Management provider><Identity Management consumer><Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<ALLOCATED_TO>	<Functional block>	SWIM-TI	N/A
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
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<SATISFIES>	<Enabler>	A/C-57	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0411.0100
Requirement	Access control to SWIM-TI security functionalities shall be implemented according to least privilege principle and leveraging on RBAC mechanisms.
Title	Security function isolation
Status	<In Progress>
Rationale	This requirement is necessary to protect the integrity of security related functionalities of SWIM-TI. Security functionalities include, for example, functions necessary to configure PKI services, administer Identity Store and define and enforce Security Policies. These functionalities typically require privileged user access. This requirement covers NIST Security Control SC-3.
Category	<Security><Design>
Validation Method	

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Verification Method	<Review of Design><Analysis>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD><Governance>
Point of view	<SWIM-TI provider>
Roles	<Identity Management provider><Identity Management consumer><Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<ALLOCATED_TO>	<Functional block>	SWIM-TI	N/A
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0411.0110
Requirement	Network connections associated with a communications session shall be terminated at the end of the session or after a policy defined amount of time, to prevent unauthorized access to the system.
Title	Network connection Shutdown
Status	<In Progress>
Rationale	Unneeded network connections are potential security breaches as they may be used by unauthorized bystanders. Terminations of such connections minimizes this risk, e.g. when maintenance operations are on-going. This requirement covers NIST security control SC-1.
Category	<Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider>
Roles	<Identity Management provider><Identity Management consumer><Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>

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Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<ALLOCATED_TO>	<Functional block>	SWIM-TI	N/A
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0411.0115
Requirement	Any software component/OTS used to implement SWIM-TI Technical Specifications shall be accompanied by certificate of authenticity issued by entitled stakeholder.
Title	SWIM-TI software integrity and authenticity
Status	<In Progress>
Rationale	This construction requirement guarantees integrity and authenticity of software implementing SWIM-TI components. This requirement covers the following NIST security controls: SI-7.
Category	<Security><Design>
Validation Method	
Verification Method	<Review of Design><Analysis>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD><Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<ALLOCATED_TO>	<Functional block>	SWIM-TI	N/A
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>

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<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
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<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

3.1.4.1 Confidentiality Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.1.4.2 Integrity Requirements

[REQ]

Identifier	REQ-14.01.04-TS-0411.0010
Requirement	The SWIM-TI shall allow to detect unpatched known vulnerabilities and to apply security patches within 3 months after publication of the security patch.
Title	Detect and patch security vulnerabilities within 3 months
Status	<In Progress>
Rationale	Service provision in a potentially hostile environment such as Internet, needs a regular update of software to apply security patches. The longer a known vulnerability remains unpatched, the higher the risk for exploit. For some types of information higher assurance of the integrity is required. It will be desirable to apply security patches within 3 months after publication of the security patch. Note: this requirement covers the Integrity sub-characteristic of Security. This requirement covers NIST security controls RA-5 a, RA-5 b, RA-5 c and RA-5 d
Category	<Maintainability><Security>
Validation Method	
Verification Method	<Analysis>
Profile Part	<YP Security+>
Domain of interest	<SLA><Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	SWIM-TI	N/A
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

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Identifier	REQ-14.01.04-TS-0411.0120
Requirement	Application level messages integrity shall not be violated during any processing at SWIM-TI level.
Title	SWIM Security Application Message Integrity Ensuring
Status	<In Progress>
Rationale	The SWIM-TI Security shall maintain the integrity of the user messages when performing security enforcement.
Category	<Security><Design>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD><Function/Behaviour>
Point of view	<SWIM-TI provider><Network provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<ALLOCATED_TO>	<Functional block>	SWIM-TI	N/A
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

3.1.4.3 Non-repudiation Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.1.4.4 Accountability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

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3.1.4.5 Authenticity Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.1.4.6 Safety Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

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3.1.5 Maintainability

This section includes maintainability requirements as documented in ISO/IEC 25010:2011. The structure of the section is in accordance with maintainability NFR sub-characteristics described in ISO/IEC 25010:2011: (§3.1.5.1) modularity, (§3.1.5.2) reusability, (§3.1.5.3) analysability, (§3.1.5.4) modifiability and (§3.1.5.5) testability.

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.1.5.1 Modularity Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.1.5.2 Reusability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.1.5.3 Analysability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.1.5.4 Modifiability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.1.5.5 Testability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

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3.1.6 Reliability

This section includes reliability requirements as documented in ISO/IEC 25010:2011. The structure of the section is in accordance with reliability NFR sub-characteristics described in ISO/IEC 25010:2011: (§3.1.6.1) maturity, (§3.1.6.2) availability, (§3.1.6.3) fault tolerance and (§3.1.6.4) recoverability.

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.1.6.1 Maturity Requirements

[REQ]

Identifier	REQ-14.01.04-TS-0611.0010
Requirement	The service provider shall perform a yearly vulnerability assessment consisting of penetration tests. These tests can be performed through a self-assessment. The infrastructure shall provide the necessary tools to perform this self-assessment.
Title	Tools for self-assessment of vulnerability
Status	<In Progress>
Rationale	Service provision in a potentially hostile environment such as Internet, needs a regular check for unprotected vulnerabilities. Note: this requirement covers the Maturity sub-characteristic of Reliability. This requirement covers the following NIST security controls: RA-5.
Category	<Reliability><Security>
Validation Method	
Verification Method	<Analysis><Test>
Profile Part	<YP Core><PP Core><BP Core>
Domain of interest	<SLA><Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	SWIM-TI	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

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[REQ]

Identifier	REQ-14.01.04-TS-0611.0020
Requirement	The service provider shall perform a yearly vulnerability assessment consisting of penetration tests. These tests cannot be performed through a self assessment and need to be performed by a certified organisation.
Title	External assessment of vulnerability
Status	<In Progress>
Rationale	Service provision in a potentially hostile environment such as Internet, needs a regular check for unprotected vulnerabilities. For some types of information higher assurance of the reliability of the assessment is required through a certified party. This requirement covers NIST security controls RA-5 a
Category	<Reliability><Security>
Validation Method	
Verification Method	<Analysis><Test>
Profile Part	<YP Security+>
Domain of interest	<SLA><Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Applicable but not testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	SWIM-TI	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

3.1.6.2 Availability Requirements

Availability applies to SWIM-TI node as it is a part of an ATM system. The COTS products used will support High Availability configurations that permit the technical infrastructure (and the ATM services it enables) to maintain an appropriate level of operation.

Furthermore, the technical infrastructure should include capabilities that permit it to scale well, ensuring it can meet growing demand (e.g. increasing number of subscribers, service consumers, messages, message sizes).

[REQ]

Identifier	REQ-14.01.04-TS-0611.0030
Requirement	The SWIM Node availability shall be as follows: + Measurement: 99,5% + Measurement conditions: - Not including planned outages, - Full load, no overload, + Observation period: 1 month
Title	Availability over 1 month
Status	<In Progress>

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Rationale	The requirement is expressed in a specific form as documented in 14.01.04 Requirements Guidelines. Within the declared window of availability, an unavailability of 3,65 hours per month provides sufficient leeway for affordable provider solutions for use cases that accept some tolerance. Note: this requirement covers the Availability sub-characteristic of Reliability.
Category	<Reliability>
Validation Method	
Verification Method	<Analysis><Test>
Profile Part	<YP Core><PP Core>
Domain of interest	<SLA>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Applicable but not testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	SWIM-TI	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0611.0040
Requirement	The SWIM Node availability shall be as follows: + Measurement: 99,97% + Measurement conditions: - Including planned outages, - Full load, no overload, + Observation period: 1 month
Title	Availability over 1 month
Status	<In Progress>
Rationale	The requirement is expressed in a specific form as documented in 14.01.04 Requirements Guidelines. Required by ExtendedFlightPlanSubmissionService in ISRM 1.0. Irrespective of maintenance and/or failure, an unavailability of 13 minutes 8 seconds per month is required for solutions for which the generated impact of unavailability is very high on the overall efficiency and performance of the

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	network. Note: this requirement covers the Availability sub-characteristic of Reliability.
Category	<Reliability>
Validation Method	
Verification Method	<Analysis><Test>
Profile Part	<YP Advanced>
Domain of interest	<SLA>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Applicable but not testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0611.0050
Requirement	The SWIM Node Continuous unavailability shall be as follows: + Measurement: <= 20 minutes + Measurement conditions: - Not including planned outages, - Full load, no overload, + Observation period: 1 hour
Title	Availability over 1 hour
Status	<In Progress>
Rationale	The requirement is expressed in a specific form as documented in 14.01.04 Requirements Guidelines. Within the declared window of availability, a continuous unavailability of maximum 20 minutes provides sufficient leeway for affordable provider solutions for use cases that accept some tolerance. Note: this requirement covers the Availability sub-characteristic of Reliability.
Category	<Reliability>
Validation Method	
Verification Method	<Analysis><Test>
Profile Part	<YP Core><PP Core>
Domain of interest	<SLA>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Applicable but not testable>

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[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0611.0060
Requirement	The SWIM Node Continuous unavailability shall be as follows: + Measurement: <= 2 minutes + Measurement conditions: - Including planned outages, - Full load, no overload, + Observation period: 1 hour
Title	Availability over 1 hour
Status	<In Progress>
Rationale	The requirement is expressed in a specific form as documented in 14.01.04 Requirements Guidelines. Irrespective of maintenance and/or failure, a continuous unavailability of 2 minutes maximum is required for solutions for which the generated impact of unavailability is very high on the overall efficiency and performance of the network. Note: this requirement covers the Availability sub-characteristic of Reliability.
Category	<Reliability>
Validation Method	
Verification Method	<Analysis><Test>
Profile Part	<YP Advanced>
Domain of interest	<SLA>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Applicable but not testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A

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<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

3.1.6.3 Fault tolerance Requirements

[IREQ]

Identifier	REQ-14.01.04-TS-0006.0001
Requirement	The SWIM Fault Tolerance of a SWIM node should provide replication transparency.
Title	SWIM Fault Tolerance supporting of node replication transparency
Status	<Validated>
Rationale	The high availability requirement applies to SWIM-TI; and in order to provide support for replication transparency, the SWIM fault tolerance is needed. It is a consideration for possible products used to support High Availability configurations. Replication transparency masks the use of a group of mutually behaviourally compatible objects to support an interface. Replication is often used to enhance performance and availability. This requirement covers NIST security controls SI-13 (4)
Category	<Functional><Security>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0006.0010
Requirement	The SWIM Fault Tolerance of a SWIM node should provide failure transparency by masking to a service consumer the failure and possible recovery.
Title	SWIM Fault Tolerance assuring of failures transparency.

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Status	<Validated>
Rationale	The high availability requirement applies to SWIM-TI; and in order to provide support for replication transparency (by masking to a service consumer the failure and possible recovery), the SWIM fault tolerance is provided. It is a consideration for possible products used to support High Availability configurations. Failure transparency masks from an object the failure and possible recovery of other objects (or itself) to enable fault tolerance. When this transparency is provided, the designer can work in an idealized world in which the corresponding class of failures does not occur. This requirement covers NIST security controls SI-13 (4)
Category	<Functional><Security>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<ICD><SLA>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

3.1.6.4 Recoverability Requirements

[REQ]

Identifier	REQ-14.01.04-TS-0611.0070
Requirement	The SWIM Node shall provide a Recovery Point Objective (RPO) of no more than 1 hour
Title	RPO no more than 1 hour
Status	<In Progress>
Rationale	Required by ExtendedFlightPlanSubmissionService in ISRM 1.0. This requirement covers NIST security controls CP-2 a.2.
Category	<Reliability><Security>
Validation Method	
Verification Method	<Analysis><Test>
Profile Part	<YP Advanced>
Domain of interest	<SLA>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>

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Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

3.1.7 Internal Data Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

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3.1.8 Design and Construction Constraints

This section includes compatibility and portability requirements as documented in ISO/IEC 25010:2011. The structure of the section is in accordance with sub-characteristics of both compatibility and portability NFR described in ISO/IEC 25010:2011: (§3.1.8.1) co-existence and (§3.1.8.2) interoperability compatibility NFR sub-characteristics, (§3.1.8.3) installability and (§3.1.8.4) replaceability portability NFR sub-characteristics.

[REQ]

Identifier	REQ-14.01.04-TS-0811.0200
Requirement	The Yellow Profile shall contain a Messaging+ Profile Part that can be composed with any other Yellow Profile Profile Part in a Side by Side manner.
Title	Message+ Profile Part
Status	<In Progress>
Rationale	Clarification on how the Profile Part can be composed
Category	<Design>
Validation Method	
Verification Method	<Review of Design>
Profile Part	<YP Messaging+>
Domain of interest	<ICD><SLA><Governance><Function/Behaviour>
Point of view	<ATM service><SWIM-TI provider><Network provider>
Roles	<Service provider><Service consumer><Subscriber><Subscription handler><Publisher><Publication consumer>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Not applicable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0205
Requirement	The Yellow Profile shall contain a Security+ Profile Part that can be composed with any other Yellow Profile Profile Part in a Side by Side manner.
Title	Security+ Profile Part
Status	<In Progress>
Rationale	Clarification on how the Profile Part can be composed
Category	<Design>
Validation Method	
Verification Method	<Review of Design>
Profile Part	<YP Security+>
Domain of interest	<ICD><SLA><Governance><Function/Behaviour>
Point of view	<ATM service><SWIM-TI provider><Network provider>
Roles	<Service provider><Service consumer><Subscriber><Subscription handler><Publisher><Publication consumer>
Selfstanding set	<Not applicable>

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Conformance	<No>
High Level	<No>
Testability	<Not applicable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0210
Requirement	The Yellow Profile shall contain a Advanced Profile Part that can be composed with any other Yellow Profile Profile Part in a Side by Side manner.
Title	Advance Profile Part
Status	<In Progress>
Rationale	Clarification on how the Profile Part can be composed
Category	<Design>
Validation Method	
Verification Method	<Review of Design>
Profile Part	<YP Advanced>
Domain of interest	<ICD><SLA><Governance><Function/Behaviour>
Point of view	<ATM service><SWIM-TI provider><Network provider>
Roles	<Service provider><Service consumer><Subscriber><Subscription handler><Publisher><Publication consumer>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Not applicable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

3.1.8.1 Co-existence Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.1.8.2 Interoperability Requirements

3.1.8.2.1 Common Time

The Time Service Enabler for ATM systems and ATM actors is an enabler for time information related to some of the SWIM-TI operations described in this specification.

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The Time Service information may be absolute time information (e.g. for message processing / propagation time) or may be relative to other time information regardless of the exact time: what matters is the difference of time between two time stamps. Requirements for time can be categorised according to the system needs, e.g.

- **Measurement Time Interval**: Computation of time intervals or distance based on time of signal propagation. Here the required accuracies and precision are more stringent than positional reference time.
- **Communication Signal Synchronization**: Data communication links require measurement of intervals and synchronisation to maintain signal clock. In telecommunications, timing is used to refer to the frequency of the signals or bit rate. Timing requirements are defined for the signal waveforms, bandwidths, types and rates of modulation.
- **Data Processing**: Timing requirements for calculation of processing delays, determining performance delays and metrics.

The time reference for aviation is defined to be the Coordinated Universal Time. This time is based on International Atomic Time (TAI) with leap seconds added from time to time as needed to compensate for the Earth's slowing rotation (currently one leap second approximately every 18 months). The leap seconds issue can be an issue if UTC is used for relative time information.

The requirements about the precision on these time information depend on the kind of “ATM application” where it is used. For example, time information for the purpose of ATM application dealing with surveillance data management will need a higher precision than for ATM application dealing with ATS message processing. It is important to remember that an accuracy of 10-3 second on surveillance time information may translate into an accuracy of 34cm for flight at Mach 1 at standard sea level. While the precision of the time information of ATS messages is 30 seconds as the information is stamped as hour and minute.

For the SWIM environment, each SWIM-TI function, all contributing systems and all contributing users must be synchronised to a time reference that satisfies precision requirements.

From this point forward, this can be referred to as the common time reference (CTR).

[REQ]

Identifier	REQ-14.01.04-TS-0811.0010
Requirement	The SWIM-TI shall use a Common Time Reference (CTR) for non-functional (e.g. Time performances) and functional characteristics where a common time reference is needed locally by SWIM-TI and by federated Security Domains.
Title	SWIM-TI Time Service
Status	<Validated>
Rationale	For the SWIM environment, each SWIM-TI function that uses time information must be synchronised to a time reference that satisfies precision requirements. For instance, security and identity tokens are checked for freshness in order to ensure that they are still within their valid lifetimes. This requires time synchronization between federated security domains. Another security related example where time synchronization is needed is exchanging of audit information. The time synchronization is important across a distributed environment and not only for security purpose. In fact this is also required for the information gathered and exchanged by the SWIM-TI Recording. According to this, Time Service can be seen as a SWIM-TI service used by several Functions and not only by Security. The time synchronization also plays an important role in WS-ReliableMessaging and in DDS. This requirement covers NIST security control AU-8.
Category	<Design><Interoperability><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<SLA>

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Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

3.1.8.2.2 Standards

This section introduces, in the scope of the Yellow Profile, the standards that are applicable to Interfaces through which interoperability is provided or required with and for participants that are external to the SWIM-TI as well as participants that are internal to the SWIM-TI.

Each technical configuration at the level of such Interfaces that requires adherence to one or more standards, in order to support and promote interoperability, includes these standards by referencing the standards in this section.

[REQ]

Identifier	REQ-14.01.04-TS-0811.0101
Requirement	IETF RFC 793 Transmission Control Protocol September 1981 http://tools.ietf.org/html/rfc793 shall be supported.
Title	Interoperability standard TCP RFC 793
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability.
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider><Network provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>

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Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0102
Requirement	IETF RFC 768 User Datagram Protocol 28 August 1980 http://tools.ietf.org/html/rfc768 shall be supported.
Title	Interoperability standard. UDP RFC 768
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability.
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider><Network provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>

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<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0103
Requirement	IETF RFC 791 Internet Protocol September 1981 http://tools.ietf.org/html/rfc791 shall be supported.
Title	Interoperability standard. IPv4 RFC 791
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability.
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider><Network provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0104
Requirement	IETF RFC 2460 Internet Protocol, Version 6 (IPv6) Specification December 1998 http://tools.ietf.org/html/rfc2460 shall be supported.

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Title	Interoperability standard. IPv6 RFC 2460
Status	<In Progress>
Rationale	Compliance with well-known and widely used standard promotes interoperability.
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider><Network provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0275
Requirement	IETF RFC 7568 Deprecating Secure Sockets Layer (SSL) Version 3.0 June 2015 https://tools.ietf.org/html/rfc7568 shall be supported.
Title	Interoperability standard. Prohibit SSL V3.0 RFC 7568
Status	<Validated>
Rationale	The SSLv3 protocol has been subject to a long series of attacks, both on its key exchange mechanism and on the encryption schemes. In SWIM-TI support of its predecessor is already prohibited according to RFC6176 (see REQ-14.01.04-TS-0811.0114). After the discovery of the Poodle Attack (https://www.openssl.org/~bodo/ssl-poodle.pdf) the use of SSL v3.0 shall be considered deprecated. At the time of writing (June 2016) the IETF RFC 7568 is a PROPOSED STANDARD.
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>

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Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider><Network provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
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<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0111
Requirement	IETF RFC 2246 The TLS Protocol Version 1.0 January 1999 http://tools.ietf.org/html/rfc2246 shall be supported.
Title	Interoperability standard. TLS1.0 RFC 2246
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability.
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A

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<ALLOCATED_TO>	<Project>	14.02.09	N/A
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<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
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<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0112
Requirement	IETF RFC 4346 The Transport Layer Security (TLS) Protocol Version 1.1 April 2006 http://tools.ietf.org/html/rfc4346 shall be supported.
Title	Interoperability standard. TLS1.1 RFC 4346
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability. This requirement covers NIST security controls SC-13
Category	<Interoperability><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><PP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
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[REQ]

Identifier	REQ-14.01.04-TS-0811.0113
Requirement	IETF RFC 5246 The Transport Layer Security (TLS) Protocol Version 1.2 August 2008 http://tools.ietf.org/html/rfc5246 shall be supported.
Title	Interoperability standard. TLS1.2 RFC 5246
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability. This requirement covers NIST security controls SC-13
Category	<Interoperability><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><PP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
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[REQ]

Identifier	REQ-14.01.04-TS-0811.0114
Requirement	IETF RFC 6176 Prohibiting Secure Sockets Layer (SSL) Version 2.0 March 2011 http://tools.ietf.org/html/rfc6176 shall be supported.
Title	Interoperability standard. Prohibit SSL V2.0 RFC 6176
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability. This requirement covers NIST security controls SC-13
Category	<Interoperability><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><PP Core><BP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>

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Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
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<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
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[REQ]

Identifier	REQ-14.01.04-TS-0811.0115
Requirement	IETF 2616 Hypertext Transfer Protocol -- HTTP/1.1 June 1999 http://tools.ietf.org/html/rfc2616 shall be supported.
Title	Interoperability standard. HTTP 1.1 RFC 2616
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability.
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Messaging Bridging>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A

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<SATISFIES>	<Enabler>	A/C-57	<Full>
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[REQ]

Identifier	REQ-14.01.04-TS-0811.0116
Requirement	IETF informational RFC 2818 HTTP Over TLS May 2000 http://tools.ietf.org/html/rfc2818 shall be supported.
Title	Interoperability standard. HTTP over TLS
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability.
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Messaging Bridging>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
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[REQ]

Identifier	REQ-14.01.04-TS-0811.0118
Requirement	The UDDI standard shall be supported as follows: + OASIS Technical Committee Draft UDDI Version 3.0.2 20041019 http://uddi.org/pubs/uddi_v3.htm. + UDDI Version 3.0.2 XML Schema set of XSDs with links documented at https://www.oasis-open.org/committees/uddi-spec/doc/tcspecs.htm#uddiv3. + UDDI Version 3.0.2 WSDL Service Interface set of XSDs with links documented at https://www.oasis-open.org/committees/uddi-spec/doc/tcspecs.htm#uddiv3.
Title	Interoperability standard UDDI v3
Status	<In Progress>
Rationale	Compliance with well-known and widely used standard promotes interoperability.
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><PP Messaging Bridging>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
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[REQ]

Identifier	REQ-14.01.04-TS-0811.0121
Requirement	W3C Note, Simple Object Access Protocol (SOAP) 1.1 08 May 2000 http://www.w3.org/TR/2000/NOTE-SOAP-20000508/ shall be supported.
Title	Interoperability standard. SOAP 1.1
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability.

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Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Messaging Bridging>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
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[REQ]

Identifier	REQ-14.01.04-TS-0811.0122
Requirement	W3C Recommendation SOAP Version 1.2 Part 1: Messaging Framework (Second Edition) 27 April 2007 http://www.w3.org/TR/soap12-part1/ shall be supported. W3C Recommendation SOAP Version 1.2 Part 2: Adjuncts (Second Edition) 27 April 2007 http://www.w3.org/TR/2007/REC-soap12-part2-20070427/ shall be supported.
Title	Interoperability standard. SOAP 1.2
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability.
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>

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Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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[REQ]

Identifier	REQ-14.01.04-TS-0811.0123
Requirement	W3C Recommendation SOAP Message Transmission Optimization Mechanism 25 January 2005 http://www.w3.org/TR/2005/REC-soap12-mtom-20050125/ shall be supported.
Title	Interoperability standard. MTOM
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability.
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><PP Messaging Bridging><BP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
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<SATISFIES>	<Enabler>	AGSWIM-41	<Full>

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<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0124
Requirement	W3C Member Submission SOAP 1.1 Binding for MTOM 1.0 05 April 2006 http://www.w3.org/Submission/soap11mtom10/ shall be supported.
Title	Interoperability standard. SOAP 1.1 Binding for MTOM
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability.
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Messaging Bridging>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
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[REQ]

Identifier	REQ-14.01.04-TS-0811.0125
Requirement	W3C Note Web Services Description Language (WSDL) 1.1 15 March 2001

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	http://www.w3.org/TR/wsdl shall be supported.
Title	Interoperability standard. WSDL 1.1
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability.
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Messaging Bridging>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
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<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
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<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
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[REQ]

Identifier	REQ-14.01.04-TS-0811.0126
Requirement	W3C Member Submission Binding Extension for SOAP 1.2 05 April 2006 http://www.w3.org/Submission/wsdl11soap12/ shall be supported.
Title	Interoperability standard. WSDL 1.1 binding extension for SOAP 1.2
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability.
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>

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Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0127
Requirement	W3C Recommendation Web Services Description Language (WSDL) Version 2.0 Part 1: Core Language 26 June 2007 http://www.w3.org/TR/wsdl20/ shall be supported. W3C Recommendation Web Services Description Language (WSDL) Version 2.0 Part 2: Adjuncts 26 June 2007 http://www.w3.org/TR/2007/REC-wsdl20-adjuncts-20070626/ shall be supported.
Title	Interoperability standard. WSDL 2.0
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability.
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><PP Messaging Bridging>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
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<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>

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[REQ]

Identifier	REQ-14.01.04-TS-0811.0128
Requirement	W3C Working Group Note Web Services Description Language (WSDL) Version 2.0 SOAP 1.1 Binding 26 June 2007 http://www.w3.org/TR/wsdl20-soap11-binding/ shall be supported.
Title	Interoperability standard. WSDL 2.0 SOAP 1.1 Binding
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability.
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><PP Messaging Bridging>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
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<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
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<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0129
Requirement	OASIS WSI Basic Profile Version 1.2, Final Material, 2010-11-09 http://ws-i.org/profiles/basicprofile-1.2-2010-11-09.html shall be supported in the following manner: A requirement with a reference to this WSI standard does not imply inclusion of all the standards referenced in this WSI standard. The content of this WSI standard overrides all the standards referenced in this WSI standard in so far these standards are referenced at peer level in the same requirement.
Title	Interoperability standard. WSI BP 1.2
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability.
Category	<Interoperability>

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Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Messaging Bridging>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0130
Requirement	OASIS WSI Basic Profile Version 2.0, Final Material, 2010-11-09 http://ws-i.org/profiles/basicprofile-2.0-2010-11-09.html shall be supported in the following manner: A requirement with a reference to this WSI standard does not imply inclusion of all the standards referenced in this WSI standard. The content of this WSI standard overrides all the standards referenced in this WSI standard in so far these standards are referenced at peer level in the same requirement.
Title	Interoperability standard. WSI BP 2.0
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability.
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>

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Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0131
Requirement	OASIS WS-I Final Material Basic Security Profile Version 1.1 2010-01-24 http://www.ws-i.org/Profiles/BasicSecurityProfile-1.1.html shall be supported in the following manner: A requirement with a reference to this WSI standard does not imply inclusion of all the standards referenced in this WSI standard. The content of this WSI standard overrides all the standards referenced in this WSI standard in so far these standards are referenced at peer level in the same requirement.
Title	Interoperability standard. WSI BSP 1.1
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability. This requirement covers NIST security controls SC-8 (1)
Category	<Interoperability><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0132
Requirement	OASIS Standard Web Services Base Notification 1.3 (WS-BaseNotification) 1

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	October 2006 http://docs.oasis-open.org/wsn/wsn-ws_base_notification-1.3-spec-os.pdf shall be supported. XSDs: http://docs.oasis-open.org/wsn/b-2.xsd shall be supported. WSDL 1.1: http://docs.oasis-open.org/wsn/bw-2.wsdl shall be supported.
Title	Interoperability standard. WS-BaseNotification 1.3
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability.
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><PP Messaging Bridging>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0133
Requirement	OASIS Standard Web Services Brokered Notification 1.3 (WS-BrokeredNotification), 1 October 2006 http://docs.oasis-open.org/wsn/wsn-ws_brokered_notification-1.3-spec-os.pdf shall be supported: XSD: http://docs.oasis-open.org/wsn/br-2.xsd shall be supported. WSDL 1.1: http://docs.oasis-open.org/wsn/brw-2.wsdl shall be supported.
Title	Interoperability standard. WS-BrokeredNotification 1.3
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability.
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>

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Profile Part	<YP Core><PP Messaging Bridging>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
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[REQ]

Identifier	REQ-14.01.04-TS-0811.0134
Requirement	OASIS Standard Web Services Topics 1.3 (WS-Topics) 1 October 2006 http://docs.oasis-open.org/wsn/wsn-ws_topics-1.3-spec-os.pdf shall be supported. XSD: http://docs.oasis-open.org/wsn/t-1.xsd shall be supported.
Title	Interoperability standard. Web Services Topics 1.3
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability.
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><PP Messaging Bridging>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A

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<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0136
Requirement	OASIS Standard Specification Web Services Security: SOAP Message Security 1.1 (WS-Security 2004) 1 February 2006 https://www.oasis-open.org/committees/download.php/16790/wss-v1.1-spec-os-SOAPMessageSecurity.pdf shall be supported.
Title	Interoperability standard. WS-Security 1.1
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability. This requirement covers NIST security controls SC-8 (1)
Category	<Interoperability><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0137
Requirement	OASIS Standard incorporating Approved Errata 01 WS-SecurityPolicy 1.3 25 April 2012 http://docs.oasis-open.org/ws-sx/ws-securitypolicy/v1.3/errata01/ws-securitypolicy-1.3-errata01-complete.html shall be supported.
Title	Interoperability standard. WS-SecurityPolicy 1.3
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability. This requirement covers NIST security controls SC-8 (1)
Category	<Interoperability><Security>
Validation Method	

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Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0138
Requirement	W3C Recommendation Web Services Policy 1.5 - Framework 04 September 2007 http://www.w3.org/TR/2007/REC-ws-policy-20070904/ shall be supported.
Title	Interoperability standard. Web Services Policy 1.5
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability.
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0139

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Requirement	OASIS Standard WS-SecureConversation 1.3 1 March 2007 http://docs.oasis-open.org/ws-sx/ws-secureconversation/200512/ws-secureconversation-1.3-os.pdf shall be supported.
Title	Interoperability standard. WS-SecureConversation 1.3
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability. This requirement covers NIST security controls SC-23
Category	<Interoperability><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0141
Requirement	OASIS Standard WS-Trust 1.4 incorporating Approved Errata 01 25 April 2012 http://docs.oasis-open.org/ws-sx/ws-trust/v1.4/errata01/os/ws-trust-1.4-errata01-os-complete.pdf shall be supported.
Title	Interoperability standard. WS-Trust 1.4
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability. This requirement covers NIST security control IA-4 (6).
Category	<Interoperability><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A

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<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0142
Requirement	W3C Recommendation Web Services Addressing 1.0 - Core 9 May 2006 http://www.w3.org/TR/2006/REC-ws-addr-core-20060509/ shall be supported.
Title	Interoperability standard. WS-Addressing 1.0
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability.
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0143
Requirement	W3C Recommendation Web Services Addressing 1.0 - SOAP Binding 9 May 2006 http://www.w3.org/TR/ws-addr-soap/ shall be supported.
Title	Interoperability standard. Web Services Addressing 1.0 - SOAP Binding
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability.
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>

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Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0144
Requirement	W3C Recommendation XML Encryption Syntax and Processing 10 December 2002 http://www.w3.org/TR/2002/REC-xmlenc-core-20021210/ shall be supported.
Title	Interoperability standard. XML-Encrypt
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability. This requirement covers NIST security controls SC-8 (1)
Category	<Interoperability><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+><PP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0145

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Requirement	W3C Recommendation XML Signature Syntax and Processing (Second Edition) 10 June 2008 http://www.w3.org/TR/xmldsig-core/ shall be supported.
Title	Interoperability standard. XML Signature
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability. This requirement covers NIST security controls SC-8 (1)
Category	<Interoperability><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+><PP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0146
Requirement	W3C Recommendation Extensible Markup Language (XML) 1.0 (Fifth Edition) 26 November 2008 http://www.w3.org/TR/xml/ shall be supported.
Title	Interoperability standard. XML 1.0
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability.
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

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[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0147
Requirement	W3C Recommendation Extensible Markup Language (XML) 1.0 (Fourth Edition) 16 August 2006, edited in place 29 September 2006 http://www.w3.org/TR/2006/REC-xml-20060816/ shall be supported.
Title	Interoperability standard. XML 1.0
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability.
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>

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<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0149
Requirement	OASIS Standard 200401 Web Services Security X.509 Certificate Token Profile, March 2004 http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-x509-token-profile-1.0.pdf shall be supported.
Title	Interoperability standard. WSSE X.509 Certificate Token Profile 1.0
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability. This requirement covers NIST security controls SC-8 (1)
Category	<Interoperability><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0150
Requirement	OASIS Standard Specification Web Services Security UsernameToken Profile 1.1 1 February 2006 http://docs.oasis-open.org/wss/v1.1/wss-v1.1-spec-os-UsernameTokenProfile.pdf shall be supported.
Title	Interoperability standard. WSSE Security UsernameToken Profile 1.1
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability. This requirement covers NIST security controls IA-2, IA-8 and IA-9.
Category	<Interoperability><Security>
Validation Method	

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Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0151
Requirement	OASIS Standard Specification Web Services Security X.509 Certificate Token Profile 1.1 1 February 2006 http://docs.oasis-open.org/wss/v1.1/wss-v1.1-spec-os-x509TokenProfile.pdf shall be supported.
Title	Interoperability standard; WSSE X.509 Certificate Token Profile 1.1
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability. This requirement covers NIST security controls IA-2, IA-8 and IA-9.
Category	<Interoperability><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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[REQ]

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Identifier	REQ-14.01.04-TS-0811.0152
Requirement	OASIS Standard Web Services Security SAML Token Profile 1.1 1 February 2006 http://docs.oasis-open.org/wss/v1.1/wss-v1.1-spec-os-SAMLTokenProfile.pdf shall be supported.
Title	Interoperability standard; WSSE SAML Token Profile 1.1
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability. This requirement covers NIST security controls IA-8 and IA-9.
Category	<Interoperability><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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[REQ]

Identifier	REQ-14.01.04-TS-0811.0153
Requirement	W3C Recommendation XML Schema Part 1: Structures Second Edition 28 October 2004 http://www.w3.org/TR/xmlschema-1/ shall be supported. W3C Recommendation XML Schema Part 2: Datatypes Second Edition 28 October 2004 http://www.w3.org/TR/xmlschema-2/ shall be supported.
Title	Interoperability standard. XML Schema 1.0
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability.
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

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Relationship	Linked Element Type	Identifier	Compliance
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0154
Requirement	MIME Media Types http://www.iana.org/assignments/media-types shall be supported.
Title	Interoperability standard. IANA registered MIME Media Types
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability.
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><PP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
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<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0155
Requirement	IETF RFC 6960 X.509 Internet Public Key Infrastructure Online Certificate Status Protocol - OCSP June 2013 http://tools.ietf.org/html/rfc6960 shall be supported.
Title	Interoperability standard. OCSP
Status	<In Progress>
Rationale	Compliance with well-known and widely used standard promotes interoperability. This requirement covers NIST security control IA-5 (2.a).
Category	<Interoperability><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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[REQ]

Identifier	REQ-14.01.04-TS-0811.0156
Requirement	IETF RFC 4510 Proposed Standard, Lightweight Directory Access Protocol (LDAP): Technical Specification Road Map, June 2006 http://www.rfc-editor.org/rfc/rfc4510.txt shall be supported.
Title	Interoperability standard. LDAPv3
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes

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	interoperability. This requirement covers NIST security control IA-4 (6).
Category	<Interoperability><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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[REQ]

Identifier	REQ-14.01.04-TS-0811.0157
Requirement	IETF RFC 5280 Proposed Standard, Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile, May 2008 http://www.rfc-editor.org/rfc/rfc5280.txt shall be supported.
Title	Interoperability standard. Internet PKI Certificate and CRL Profile
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability. This requirement covers NIST security control IA-5 (2.a).
Category	<Interoperability><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>

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Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
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[REQ]

Identifier	REQ-14.01.04-TS-0811.0158
Requirement	IETF RFC 4523 Proposed Standard, Lightweight Directory Access Protocol (LDAP) Schema Definitions for X.509 Certificates, June 2006 http://www.rfc-editor.org/rfc/rfc4523.txt shall be supported.
Title	Interoperability standard. LDAP Schema Definitions for X.509 Certificates
Status	<In Progress>
Rationale	Compliance with well-known and widely used standard promotes interoperability. This requirement covers NIST security control IA-4 (6).
Category	<Interoperability><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
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<SATISFIES>	<Enabler>	AGSWIM-43	<Full>

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<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
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[REQ]

Identifier	REQ-14.01.04-TS-0811.0159
Requirement	IETF RFC 4158 Internet X.509 Public Key Infrastructure: Certification Path Building September 2005 http://tools.ietf.org/html/rfc4158 shall be supported.
Title	Interoperability standard. Public Key Infrastructure: Certification Path Building
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability. This requirement covers NIST security control IA-5 (2.a).
Category	<Interoperability><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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[REQ]

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Identifier	REQ-14.01.04-TS-0811.0160
Requirement	IETF RFC 5055 Proposed Standard, Server-Based Certificate Validation Protocol (SCVP), December 2007 http://www.rfc-editor.org/rfc/rfc5055.txt shall be supported.
Title	Interoperability standard. SCVP
Status	<In Progress>
Rationale	Compliance with well-known and widely used standard promotes interoperability. This requirement covers NIST security control IA-5 (2.a).
Category	<Interoperability><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+><BP Core><PP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
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[REQ]

Identifier	REQ-14.01.04-TS-0811.0161
Requirement	IETF RFC 5816 Proposed Standard, RFC ESSCertIDv2 Update for RFC 3161, March 2010 http://www.rfc-editor.org/rfc/rfc5816.txt shall be supported.
Title	Interoperability standard. ESSCertIDv2 Update for TSA
Status	<In Progress>
Rationale	Compliance with well-known and widely used standard promotes interoperability. This requirement covers NIST security control AU-8.
Category	<Interoperability><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+>
Domain of interest	<ICD>

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Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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[REQ]

Identifier	REQ-14.01.04-TS-0811.0162
Requirement	IETF RFC 3161 Internet X.509 Public Key Infrastructure Time-Stamp Protocol (TSP) August 2001 http://www.rfc-editor.org/rfc/rfc3161.txt shall be supported.
Title	Interoperability standard. TSA
Status	<In Progress>
Rationale	Compliance with well-known and widely used standard promotes interoperability. This requirement covers NIST security controAU-8.
Category	<Interoperability><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0163
Requirement	IETF RFC 5652 Internet Standard, Cryptographic Message Syntax (CMS), September 2009 http://www.rfc-editor.org/rfc/rfc5652.txt shall be supported.
Title	Interoperability standard. CMS
Status	<Validated>

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Rationale	Compliance with well-known and widely used standard promotes interoperability. This requirement covers NIST security controls SC-8 (1)
Category	<Interoperability><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
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<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0166
Requirement	IETF RFC 6434, Memo, IPv6 Node Requirements, December 2011 http://tools.ietf.org/html/rfc6434 shall be supported in the following manner: Reference to this specification is equivalent to inclusion of all protocol functions described in this document.
Title	Interoperability standard. IPv6 Node Requirements
Status	<In Progress>
Rationale	Compliance with well-known and widely used standard promotes interoperability.
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider><Network provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A

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<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
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<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0168
Requirement	IETF RFC 1122 Internet Standard, Requirements for Internet Hosts -- Communication Layers, October 1989 http://tools.ietf.org/html/rfc1122 shall be supported.
Title	Interoperability standard. Requirements for Internet Hosts -- Communication Layers
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability.
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider><Network provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
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<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
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<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
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<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0169
Requirement	IETF RFC 792 Internet Standard, INTERNET CONTROL MESSAGE PROTOCOL, September 1981 http://tools.ietf.org/html/rfc792 shall be supported.
Title	Interoperability standard. ICMP
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability.
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider><Network provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0170
Requirement	IETF RFC 950, Internet Standard, Internet Standard Subnetting Procedure, August 1985 http://tools.ietf.org/html/rfc950 shall be supported.
Title	Interoperability standard. Internet Standard Subnetting Procedure
Status	<Validated>

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Rationale	Compliance with well-known and widely used standard promotes interoperability.
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider><Network provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
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<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0171
Requirement	IETF RFC 6918 Proposed Standard, Formally Deprecating Some ICMPv4 Message Types, April 2013 http://tools.ietf.org/html/rfc6918 shall be supported.
Title	Interoperability standard. Formally Deprecating Some ICMPv4 Message Types
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability.
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider><Network provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>

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Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0173
Requirement	OGC Web Map Server Implementation Specification Version: 1.3.0, 2006-03-15 http://www.opengeospatial.org/standards/wms shall be supported in the following manner: Only the elements of this specification that are related to contract and protocol binding are relevant.
Title	Interoperability standard. WMS
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability.
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>

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<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0174
Requirement	OGC Web Feature Service Interface Standard Version 2.0, 2010-11-02 (also ISO/DIS 19142) http://www.opengeospatial.org/standards/wfs shall be supported in the following manner: Only the elements of this specification that are related to contract and protocol binding are relevant.
Title	Interoperability standard. WFS
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability.
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0175
Requirement	OGC Web Processing Service Version: 1.0.0 2007-06-08 http://www.opengeospatial.org/standards/wps shall be supported in the following manner: Only the elements of this specification that are related to contract and protocol binding are relevant.
Title	Interoperability standard. WPS
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability.
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>

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Roles	<Service provider><Service consumer>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0176
Requirement	OGC WCS 2.0 Interface Standard - Core Version: 2.0.0 2010-10-27 http://www.opengeospatial.org/standards/wcs shall be supported in the following manner: Only the elements of this specification that are related to contract and protocol binding are relevant.
Title	Interoperability standard. WCS
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability.
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0177
Requirement	OASIS Standard Web Services Federation Language (WS-Federation) Version 1.2 22, May 2009 http://docs.oasis-open.org/wsfed/federation/v1.2/ws-federation.pdf shall be supported.

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Title	Interoperability standard. WS-Federation
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability. This requirement covers NIST security control IA-4 (6).
Category	<Interoperability><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
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<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0178
Requirement	OASIS Standard eXtensible Access Control Markup Language (XACML) Version 3.0, 22 January 2013 http://docs.oasis-open.org/xacml/3.0/xacml-3.0-core-spec-en.doc shall be supported.
Title	Interoperability standard. XACML
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability.
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+><PP Messaging Bridging>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A

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<SATISFIES>	<Enabler>	A/C-57	<Full>
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[REQ]

Identifier	REQ-14.01.04-TS-0811.0180
Requirement	IETF 5905 Proposed Standard, Network Time Protocol Version 4: Protocol and Algorithms Specification https://tools.ietf.org/html/rfc5905 shall be supported.
Title	Interoperability standard. NTP
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability. This requirement covers NIST security control AU-8.
Category	<Interoperability><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
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<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0181
Requirement	OASIS Standard Web Services Reliable Messaging (WS-ReliableMessaging) Version 1.2, 2 February 2009 http://docs.oasis-open.org/ws-rx/wsrm/v1.2/wsrm.html shall be supported.
Title	Interoperability standard. WS-ReliableMessaging
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes

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	interoperability. This requirement covers NIST security controls SI-17
Category	<Interoperability><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0182
Requirement	OASIS Standard incorporating Approved Errata Web Services Reliable Messaging Policy 2 Assertion (WS-RM Policy) Version 1.1 07 January 2008 http://docs.oasis-open.org/ws-rx/wsrmp/v1.1/wsrmp.html shall be supported.
Title	Interoperability standard. WS-ReliableMessaging Policy
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability. This requirement covers NIST security controls SI-17
Category	<Interoperability><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
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<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
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[REQ]

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Identifier	REQ-14.01.04-TS-0811.0186
Requirement	W3C Recommendation Web Services Policy 1.5 - Attachment 04 September 2007 http://www.w3.org/TR/ws-policy-attach/ shall be supported.
Title	Interoperability standard. WS-PolicyAttachment
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability. This requirement covers NIST security controls AC-1 a.2 and IA-1 a.2.
Category	<Interoperability><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0187
Requirement	RSA Laboratories PKCS #12 v1.1: Personal Information Exchange Syntax, October 27, 2012 Standard http://www.emc.com/emc-plus/rsa-labs/standards-initiatives/pkcs12-personal-information-exchange-syntax-standard.htm shall be supported.
Title	Interoperability standard. PKCS #12 v1.1
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability. This requirement covers NIST security control IA-5 (2.b).
Category	<Interoperability><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A

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<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
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<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
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[REQ]

Identifier	REQ-14.01.04-TS-0811.0188
Requirement	ISO/IEC 19464:2014 Information technology -- Advanced Message Queuing Protocol (AMQP) v1.0 specification, First Edition 2014-05-01 http://standards.iso.org/ittf/PubliclyAvailableStandards/c064955_ISO_IEC_19464_2014.zip shall be supported.
Title	Interoperability standard. AMQP v1.0
Status	<Validated>
Rationale	Compliance with well-known and widely used standard promotes interoperability. This ISO/IEC standard is the OASIS standard Advanced Message Queuing Protocol (AMQP) Version 1, 29 October 2012
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Publisher><Publication consumer><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
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<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0811.0230
Requirement	IETF RFC 4033 Domain Name System Security Extensions (DNSSEC) March 2005 https://tools.ietf.org/html/rfc4033 shall be supported.
Title	Interoperability standard DNSSec
Status	<In Progress>
Rationale	DNSSec is a well-known and widely used standard allowing to perform data origin authentication and data integrity verification on the name/address resolution responses the system receives from authoritative sources. Support for this standard promotes interoperability. This requirement complies with REQ-14.02.02-TS-ACCO.0061 in 14.2.2.D26. This requirement covers NIST

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	security control SC-21.
Category	<Interoperability><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider><Network provider>
Roles	<Identity Management provider><Identity Management consumer><Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
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[REQ]

Identifier	REQ-14.01.04-TS-0811.0250
Requirement	Security Requirements for Cryptographic Modules US Federal Information Processing Standard (FIPS 140-2) May 2001 http://csrc.nist.gov/publications/fips/fips140-2/fips1402.pdf shall be supported.
Title	Interoperability standard. FIPS 140-2
Status	<In Progress>
Rationale	Compliance with well-known and widely used standard promotes interoperability. FIPS 140-2 provides four increasing, qualitative levels of security intended to cover a wide range of potential applications and environments. The security requirements cover areas related to the secure design and implementation of cryptographic modules.
Category	<Interoperability><Security>
Validation Method	
Verification Method	<Analysis>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Identity Management provider><Identity Management consumer><Service

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	provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Applicable but not testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
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<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
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<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
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[REQ]

Identifier	REQ-14.01.04-TS-0811.0270
Requirement	Efficient XML Interchange (EXI) Format 1.0 (Second Edition), Recommendation, 11 February 2014. http://www.w3.org/TR/2014/REC-exi-20140211/ shall be supported.
Title	Interoperability standard. Efficient XML Interchange (EXI) Format 1.0
Status	<In Progress>
Rationale	Efficient alternative to compression techniques for XML document.
Category	<Interoperability>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Messaging Bridging>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A

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<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

3.1.8.3 Installability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.1.8.4 Replaceability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

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3.1.9 Interface Requirements

3.1.9.1 External Service Interface Bindings

[REQ]

Identifier	REQ-14.01.04-TS-0901.0324
Requirement	SNTP shall be instantiated over UDP using the following binding. + MEPs: as defined by standard + Fault handling: as defined by standard + Encoding. - as defined per standard + Security: - Confidentiality: none - Integrity: none - Authenticity: none - Authorization: none - Non-repudiation: none + Contract: - formalism of contract description: as defined by standard - minimum: not applicable - reference: as defined by standard + Interoperability: none
Title	Interface binding. SNTP over UDP.
Status	<In Progress>
Rationale	SNTP supports a system for provision of a common time reference. While the level of accuracy and reliability provided through SNTP can be very high (e.g. precision of a few milliseconds can be demonstrated), depending on the context this cannot always be guaranteed.
Category	<Interface>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<External service binding>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
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<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0180	N/A

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<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0010	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

3.1.9.2 Network Interface Bindings

[REQ]

Identifier	REQ-14.01.04-TS-0910.0201
Requirement	Network Technical Interface shall be instantiated according to the following binding + IP Unicast IPv4 + Mapping IP to IP + Security: - Confidentiality: none - Integrity: none - Authenticity: none - Authorization: none - Non-repudiation: none + Contract: none + Interoperability: none
Title	IP Unicast IPv4
Status	<Validated>
Rationale	Basic Unicast IPv4 binding
Category	<Interface>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider><Network provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Network binding>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
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<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0170	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0171	N/A

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<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0910.0010	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0010.0090	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0910.0100	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0310	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0311	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0801	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0317	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0318	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0800	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0802	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0803	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0324	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0325	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0327	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0328	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0914.0050	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0332	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0914.0020	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0807	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0806	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0805	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0804	N/A
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<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0910.0160	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0910.0170	<Full>
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<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
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<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
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[REQ]

Identifier	REQ-14.01.04-TS-0910.0202
Requirement	Network Technical Interface shall be instantiated according to the following binding: + IP Unicast IPv6 + Mapping IP to IP + Security: - Confidentiality: none - Integrity: none - Authenticity: none - Authorization: none - Non-repudiation: none

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	+ Contract: none + Interoperability: none
Title	IP Unicast IPv6
Status	<In Progress>
Rationale	Basic Unicast IPv6 binding
Category	<Interface>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider><Network provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Network binding>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0101	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0104	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0168	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0910.0010	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0010.0090	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0910.0100	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0310	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0311	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0801	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0317	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0318	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0800	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0802	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0803	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0324	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0325	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0327	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0328	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0914.0050	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0332	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0914.0020	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0710	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0720	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0807	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0806	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0805	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0804	N/A
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0910.0001	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0910.0020	<Full>

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<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0910.0160	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0910.0170	<Full>
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
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<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0910.0209
Requirement	Network Technical Interface shall be instantiated according to the following binding: + IP Unicast IPv4 with network security + Mapping IP to IP + Security: - Confidentiality: network - Integrity: none - Authenticity: none - Authorization: none - Non-repudiation: none + Contract: none + Interoperability: none
Title	IP Unicast IPv4 with network security
Status	<In Progress>
Rationale	Basic Unicast IPv4 binding with network security
Category	<Interface>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider><Network provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Network binding>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A

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<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0101	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0102	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0103	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0168	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0169	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0170	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0171	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0910.0010	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0910.0030	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0010.0090	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0910.0100	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0310	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0311	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0801	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0317	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0318	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0324	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0327	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0328	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0914.0050	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0332	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0914.0020	N/A
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0910.0040	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0910.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0910.0060	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0910.0160	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0910.0170	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
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[REQ]

Identifier	REQ-14.01.04-TS-0910.0210
Requirement	Network Technical Interface shall be instantiated according to the following binding: + IP Unicast IPv6 with network security + Mapping IP to IP + Security: - Confidentiality: network - Integrity: none - Authenticity: none - Authorization: none - Non-repudiation: none + Contract: none + Interoperability: none
Title	IP Unicast IPv6 with network security
Status	<In Progress>
Rationale	Basic Unicast IPv6 binding with network security
Category	<Interface>

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Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider><Network provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Network binding>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0101	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0102	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0104	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0168	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0910.0010	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0910.0030	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0010.0090	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0910.0100	N/A
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<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0311	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0801	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0317	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0318	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0324	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0327	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0328	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0914.0050	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0332	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0914.0020	N/A
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<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0910.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0910.0060	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0910.0160	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0910.0170	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

3.1.9.3 Network Requirements

[REQ]

Identifier	REQ-14.01.04-TS-0910.0001
Requirement	The Communication Network Infrastructure shall provide IPv6 support.
Title	Communication Network Infrastructure IPv6 support
Status	<In Progress>
Rationale	The SWIM Technical Infrastructure is used to enable the exchanging of several types of information among several types of geographically distributed

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	systems interconnected at network level using a Wide Area Network (WAN). Taking into account the overall context, the large number of interconnected systems, performance and Quality of Service (QoS) the adoption of IPv6 at network level is needed.
Category	<Interface>
Validation Method	
Verification Method	<Review of Design>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider><Network provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
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<ALLOCATED_TO>	<Project>	15.02.10	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0910.0040
Requirement	The Communication Network Infrastructure shall provide IPv4 support.
Title	Communication Network Infrastructure IPv4 support
Status	<In Progress>
Rationale	The SWIM Technical Infrastructure is used to enable the exchanging of several types of information among several types of geographically distributed systems interconnected at network level using a Wide Area Network (WAN). Taking into account the overall context, the large number of interconnected systems generally belonging to several different networks adoption of IPv4 at network level is needed.
Category	<Interface>
Validation Method	
Verification Method	<Review of Design>
Profile Part	<YP Core><BP Core><PP Core>

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Domain of interest	<ICD>
Point of view	<SWIM-TI provider><Network provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Project>	15.02.10	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0910.0010
Requirement	The Communication Network Infrastructure shall provide IP routing.
Title	Communication Network Infrastructure IP routing support
Status	<In Progress>
Rationale	The SWIM Technical Infrastructure is used to enable the exchanging of several types of information among several types of geographically distributed systems interconnected at network level using a Wide Area Network (WAN). Taking into account the overall context and the large number of interconnected systems generally belonging to several different IP networks the support of IP routing at network level is needed.
Category	<Interface>
Validation Method	
Verification Method	<Review of Design>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider><Network provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

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Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.09-SWIM-PENS-2	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Project>	15.02.10	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0910.0020
Requirement	The Communication Network Infrastructure shall allow to use Transfer Control Protocol (TCP).
Title	Communication Network Infrastructure TCP support
Status	<In Progress>
Rationale	The SWIM Technical Infrastructure is used to enable the exchanging of several types of information among several types of geographically distributed systems interconnected at network level using a Wide Area Network (WAN). Taking into account the overall context and the large number of interconnected systems which need to exchange information in efficient and reliable manner, the support of TCP protocol at network level is needed.
Category	<Interface><Reliability>
Validation Method	
Verification Method	<Review of Design>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider><Network provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Project>	15.02.10	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>

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<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0910.0060
Requirement	The Communication Network Infrastructure shall allow to use User Datagram Protocol (UDP).
Title	Communication Network Infrastructure UDP delivery support
Status	<In Progress>
Rationale	The SWIM Technical Infrastructure is used to enable the exchanging of several types of information among several types of geographically distributed systems interconnected at network level using a Wide Area Network (WAN). Taking into account the overall context, the large number of interconnected systems and the need in some cases (e.g. DDS technology) of transmitting information in time-sensitive manner and also to support the NTP protocol the adoption of UDP protocol is needed.
Category	<Interface><Reliability>
Validation Method	
Verification Method	<Review of Design>
Profile Part	<YP Core><BP Core>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider><Network provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Project>	15.02.10	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0910.0030

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Requirement	The Communication Network Infrastructure shall provide encryption capabilities (network level security).
Title	Communication Network Infrastructure encryption support
Status	<In Progress>
Rationale	The SWIM Technical Infrastructure is used to enable the exchanging of several types of information among several types of geographically distributed systems interconnected at network level using a Wide Area Network (WAN).Taking into account the overall context and the sensitivity of the exchanged data for security reasons encryption and decryption techniques support at network level is needed. This requirement covers NIST security controls SC-8 (1) and SC-11.
Category	<Interface><Security>
Validation Method	
Verification Method	<Review of Design>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider><Network provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator><Identity Management provider><Identity Management consumer>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Project>	15.02.10	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0010.0090
Requirement	The Communication Network Infrastructure shall provide a minimum bandwidth of 1 Mb/s upstream and downstream.
Title	Communication Network Infrastructure Minimum bandwidth
Status	<In Progress>
Rationale	The SWIM Technical Infrastructure is used to enable the exchanging of several types of information among several types of geographically distributed systems interconnected at network level using a Wide Area Network (WAN).

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	Taking into account the overall context, the large number of interconnected systems and the need in some cases (e.g. mission critical application) of transmitting information in time-sensitive manner a bandwidth of at least 1 Mb/s at network level is needed.
Category	<Interface><Performance>
Validation Method	
Verification Method	<Test>
Profile Part	<YP Core>
Domain of interest	<ICD><SLA>
Point of view	<SWIM-TI provider><Network provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.09-SWIM-PENS-10	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Project>	15.02.10	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0910.0100
Requirement	The Communication Network Infrastructure shall provide a minimum peak bandwidth of 10 Mb/s.
Title	Communication Network Infrastructure Minimum Peak bandwidth
Status	<In Progress>
Rationale	The SWIM Technical Infrastructure is used to enable the exchanging of several types of information among several types of geographically distributed systems interconnected at network level using a Wide Area Network (WAN). Taking into account the overall context and the large number of interconnected systems and the need in some cases (e.g. mission critical application) of transmitting information in time-sensitive manner a bandwidth higher than 10 Mb/s is not needed.
Category	<Interface><Performance>
Validation Method	
Verification Method	<Test>
Profile Part	<YP Core>
Domain of interest	<ICD><SLA>
Point of view	<SWIM-TI provider><Network provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.09-SWIM-PENS-11	<Full>

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<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Project>	15.02.10	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0910.0160
Requirement	The Communication Network Infrastructure shall support unicast over TCP/IP.
Title	Communication Network Infrastructure TCP/IP Unicast support
Status	<In Progress>
Rationale	All the profiles currently defined use the unicast communication between two stakeholders.
Category	<Functional><Interface>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider><Network provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.09-SWIM-PENS-4	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Project>	15.02.10	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
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<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
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<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0910.0170
Requirement	The Communication Network Infrastructure shall support unicast through UDP/IP.

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Title	Communication Network Infrastructure unicast support through UDP/IP
Status	<In Progress>
Rationale	The Blue Profile uses UDP/IP in OMG DDS multicast distribution as well as unicast communication. The Yellow Profile uses the unicast communication between two participants in a communication. UDP is used for instance with the NTP time protocol.
Category	<Functional><Interface>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider><Network provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
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3.2 Messaging Functional and non-Functional Requirements

In this chapter functional and non-functional requirements concerning the SWIM-TI Messaging are provided. These requirements have been specified according to SWIM-TI Technical Use Case and latest TAD.

3.2.1 Capabilities

This section provides the functional requirements of the SWIM-TI Messaging derived from TAD functional and technical views.

3.2.1.1 Distribution

[REQ]

Identifier	REQ-14.01.04-TS-0001.0350
Requirement	The SWIM-TI Messaging shall provide the Synchronous Request/Reply Message Exchange Pattern (SRR-MEP).
Title	Support of Synchronous Request/Reply Message Exchange Pattern
Status	<Validated>
Rationale	Distribution function is the core function of the SWIM-TI Messaging. The Distribution function is realized via the support to specific Message Exchange Patterns (MEPs). The Synchronous Request/Reply or Request/Response is one of the identified MEPs enabling the exchanging of information between ATM participants. An unique identifier of this MEP has been identified: SRR-MEP. The SRR-MEP is characterized as follows: - Conversation direction: 2 way (Consumer -> Provider -> Consumer) - Cardinality: 1-1 - Decoupling: No Time decoupling; No Space decoupling, No Synchronization decoupling for consumer..
Category	<Functional>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0400
Requirement	The SWIM-TI Messaging shall provide the Push style Publish/Subscribe Message Exchange Pattern (PSPUSH-MEP).
Title	Support of Publish/Subscribe Push Message Exchange Pattern
Status	<Validated>
Rationale	Distribution function is the core function of the SWIM-TI Messaging. The Distribution function is realized via the support to specific Message Exchange Patterns (MEPs). The Publish/Subscribe Push is one of the identified MEPs needed to enable the exchanging of information between ATM participants. An unique identifier of this MEP has been identified: PSPUSH-MEP. The PSPUSH-MEP is characterized as follows: - Conversation direction: 1 way (Publisher -> Consumer) - Cardinality: many-many - Decoupling: Time decoupling; Space decoupling, Synchronization decoupling The main difference with respect to the other MEPs is the support of full time, space and synchronization decoupling.
Category	<Functional>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0830
Requirement	The SWIM-TI Messaging shall provide the Asynchronous Fire & Forget Message Exchange Pattern (AFF-MEP).
Title	Support of Asynchronous Fire & Forget Message Exchange Pattern
Status	<In Progress>
Rationale	Distribution function is the core function of the SWIM-TI Messaging. The Distribution function is realized via the support to specific Message Exchange Patterns (MEPs).The Asynchronous Fire & Forget is one of the identified MEPs needed enabling the exchanging of information between ATM participants. An unique identifier of this MEP has been identified: AFF-MEP. The AFF-MEP is characterized as follows: - Conversation direction: 1 way (Consumer -> Provider) - Cardinality: 1-1 - Decoupling: Time decoupling; No Space decoupling, Synchronization decoupling.
Category	<Functional>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<PP Core><YP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0840
Requirement	The SWIM-TI Messaging shall provide the Fully Decoupled Request/Reply Message Exchange Pattern (FDRR-MEP).
Title	Support of Fully Decoupled Request/Reply Message Exchange Pattern
Status	<In Progress>
Rationale	Distribution function is the core function of the SWIM-TI Messaging. The Distribution function is realized via the support to specific Message Exchange

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	Patterns (MEPs).The Fully Decoupled Request/Reply or Request/Response is one of the identified MEPs needed enabling the exchanging of information between ATM participants. An unique identifier of this MEP has been identified: FDRR-MEP. The FDRR-MEP is characterized as follows: - Conversation direction: 2 way (Consumer -> Provider -> Consumer) - Cardinality: 1-1 - Decoupling: Time decoupling; Space decoupling, Synchronization.
Category	<Functional>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<PP Core><YP Messaging+>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0410
Requirement	The SWIM-TI Messaging shall provide the Pull style Publish/Subscribe Message Exchange Pattern (PSPULL-MEP).
Title	Support of Publish/Subscribe Pull Message Exchange Pattern
Status	<Validated>
Rationale	Distribution function is the core function of the SWIM-TI Messaging. The Distribution function is realized via the support to specific Message Exchange Patterns (MEPs). The Publish/Subscribe Pull is one of the identified MEPs needed to enable the exchanging of information between ATM participants. An unique identifier of this MEP has been identified: PSPULL-MEP. The PSPULL-MEP is characterized as follows: - Conversation direction: a composition of 1 way (Publisher -> Consumer) and SRR-MEP; the latter is used by the consumer to retrieve the information/message. This is the difference with respect to the PSPUSH-MEP. - Cardinality: many-many - Decoupling: Time decoupling; Space decoupling, Synchronization decoupling The main difference with respect to the other MEPs is the support of full time, space and synchronization decoupling. For what concerns the OPULL-MEP, it is important to note that in this case the

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	subscriber retrieves (by SRR-MEP) the messages from an intermediary and not directly from the message source as happens for OPULL-MEP.
Category	<Functional>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0420
Requirement	The SWIM-TI Messaging shall provide the Topic based Push style Publish/Subscribe Message Exchange Pattern (TPSPUSH-MEP).
Title	Support of Topic Based Publish/Subscribe Push Message Exchange Pattern
Status	<Validated>
Rationale	Distribution function is the core function of the SWIM-TI Messaging. The Distribution function is realized via the support to specific Message Exchange Patterns (MEPs). Push/Pull Publish/Subscribe MEPs can be further specialized as follows: - Topic based P/S, - Type based P/S, - Content based P/S, - Channel based P/S. The Topic based Publish/Subscribe Push is one of the identified MEPs needed to enable the exchanging of information between ATM participants. An unique identifier of this MEP has been identified: TPSPUSH-MEP.
Category	<Functional>

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Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0400	<Full>
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0430
Requirement	The SWIM-TI Messaging shall provide the Topic Based Pull style Publish/Subscribe Message Exchange Pattern (TPSPULL-MEP).
Title	Support of Topic Based Publish/Subscribe Pull Message Exchange Pattern
Status	<Validated>
Rationale	Distribution function is the core function of the SWIM-TI Messaging. The Distribution function is realized via the support to specific Message Exchange Patterns (MEPs). Push/Pull Publish/Subscribe MEPs can be further specialized as follows: - Topic based P/S, - Type based P/S, - Content based P/S, - Channel based P/S. The Topic Based Publish/Subscribe Pull is one of the identified MEPs needed to enable the exchanging of information between ATM participants. An unique identifier of this MEP has been identified: TPSPULL-MEP.
Category	<Functional>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>

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Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0410	<Full>
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0621
Requirement	The SWIM-TI Messaging TPSPULL-MEP shall allow subscribers to unsubscribe a subscription.
Title	Unsubscribe for TPSPULL-MEP
Status	<Validated>
Rationale	When messages are no longer needed, it must be possible to stop all activity related to a subscription and remove the subscription.
Category	<Functional>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Subscriber><Subscription handler>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

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Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0622
Requirement	The SWIM-TI Messaging TPSPULL-MEP shall allow subscribers to pause the subscription.
Title	Pause for TPSPULL-MEP
Status	<Validated>
Rationale	It must be possible to temporarily suspend all activity related to a subscription without losing the subscription or its configuration as well as to reactivate the suspended subscription
Category	<Functional>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider>
Roles	<Subscriber><Subscription handler>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0631
Requirement	The SWIM-TI Messaging TPSPUSH-MEP shall allow subscribers to unsubscribe a subscription.

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Title	Unsubscribe for TPSPUSH-MEP
Status	<Validated>
Rationale	When messages are no longer needed, it must be possible to stop all activity related to a subscription and remove the subscription.
Category	<Functional>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Subscriber><Subscription handler>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0632
Requirement	The SWIM-TI Messaging TPSPUSH-MEP shall allow subscribers to pause the subscription.
Title	Pause for TPSPUSH-MEP
Status	<Validated>
Rationale	It must be possible to temporarily suspend all activity related to a subscription without losing the subscription or its configuration as well as to reactivate the suspended subscription
Category	<Functional>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider>
Roles	<Subscriber><Subscription handler>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>

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Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0720
Requirement	The SWIM-TI Messaging PSPULL-MEP shall provide Subscribers with the ability to specify subscription expiration time.
Title	PSPULL-MEP Subscription Expiration support
Status	<In Progress>
Rationale	At expiration, no more new messages should be forwarded to the subscriber. Existing undelivered messages remain available for delivery to the subscriber. In some use cases, the end-date of interest in events precisely known in advance. It is then much more efficient for the subscriber to have an automatic cancellation of the subscription than having to actively monitor the subscriptions. Also for the subscription manager an automatic expiration of a subscription, ensure less unnecessary load.
Category	<Functional>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider>
Roles	<Subscriber><Subscription handler>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0730
Requirement	The SWIM-TI Messaging PSPUSH-MEP shall provide Subscribers with the ability to specify subscription expiration time.
Title	PSPUSH-MEP Subscription Expiration support
Status	<In Progress>
Rationale	At expiration, no more new messages should be forwarded to the subscriber. Existing undelivered messages remain available for delivery to the subscriber.

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	In some use cases, the end-date of interest in events precisely known in advance. It is then much more efficient for the subscriber to have an automatic cancellation of the subscription than having to actively monitor the subscriptions. Also for the subscription manager an automatic expiration of a subscription, ensure less unnecessary load.
Category	<Functional>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider>
Roles	<Subscriber><Subscription handler>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

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3.2.1.2 Filtering

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

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3.2.1.3 Data Management

[REQ]

Identifier	REQ-14.01.04-TS-0001.0300
Requirement	The SWIM-TI Messaging shall permit exchanging of message content that uses ASCII format.
Title	SWIM-TI Messaging Supported Data Representation
Status	<Validated>
Rationale	For universality: to be able to support “any” service, SWIM-TI MSG shall permit exchange of data of any type, including textual (e.g. ASCII, XML, or Unicode) and binary (e.g. graphical information, or arbitrary binary data). Further details concerning how these data representations are related to SWIM-TI messaging layer are provided in SWIM-TI Technical Specification §3.2.
Category	<Functional>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><PP Core>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	09.19-D03-150	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0301
Requirement	The SWIM-TI Messaging shall permit exchanging of message content that uses Unicode format.
Title	SWIM-TI Messaging Supported Data Representation
Status	<Validated>
Rationale	For universality: to be able to support “any” service, SWIM-TI MSG shall permit exchange of data of any type, including textual (e.g. ASCII, XML, or Unicode)

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	and binary (e.g. graphical information, or arbitrary binary data). Further details concerning how these data representations are related to SWIM-TI messaging layer are provided in SWIM-TI Technical Specification §3.2.
Category	<Functional>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><PP Core>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	09.19-D03-150	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0302
Requirement	The SWIM-TI Messaging shall permit exchanging of message content that uses XML format.
Title	SWIM-TI Messaging Supported Data Representation
Status	<Validated>
Rationale	For universality: to be able to support “any” service, SWIM-TI MSG shall permit exchange of data of any type, including textual (e.g. ASCII, XML, or Unicode) and binary (e.g. graphical information, or arbitrary binary data). Further details concerning how these data representations are related to SWIM-TI messaging layer are provided in SWIM-TI Technical Specification §3.2.
Category	<Functional>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>

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Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	09.19-D03-150	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0303
Requirement	The SWIM-TI Messaging shall permit exchanging of message content that uses Binary format.
Title	SWIM-TI Messaging Supported Data Representation
Status	<In Progress>
Rationale	For universality: to be able to support “any” service, SWIM-TI MSG shall permit exchange of data of any type, including textual (e.g. ASCII, XML, or Unicode) and binary (e.g. graphical information, or arbitrary binary data). Further details concerning how these data representations are related to SWIM-TI messaging layer are provided in SWIM-TI Technical Specification §3.2.
Category	<Functional>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><PP Core><BP Core>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	09.19-D03-150	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>

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<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0304
Requirement	The SWIM-TI Messaging shall permit exchanging of message content that uses Base64 format.
Title	SWIM-TI Messaging Supported Data Representation
Status	<Validated>
Rationale	For universality: to be able to support “any” service, SWIM-TI MSG shall permit exchange of data of any type, including textual (e.g. ASCII, XML, or Unicode) and binary (e.g. graphical information, or arbitrary binary data). Further details concerning how these data representations are related to SWIM-TI messaging layer are provided in SWIM-TI Technical Specification §3.2.
Category	<Functional>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	09.19-D03-150	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>

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<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0855
Requirement	The SWIM-TI Messaging Data Validation shall be configurable at both service and message type levels.
Title	Configurability of SWIM-TI Messaging Data Validation at both service and message type levels.
Status	<In Progress>
Rationale	Data Validation function aims at providing the ability to check for conformance of information being passed through the SWIM-TI. The conformance conditions are expressed in form of well-defined policy assertions assigned to the basic service interface specification. The policies can be defined (configured) at service or message type levels. Possible policies are those aiming at checking the conformance of message structures with relevant interoperability standards. This requirement covers NIST security controls SI-10.
Category	<Functional><Security>
Validation Method	
Verification Method	<Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Subscription handler><Publisher><Publication consumer><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Applicable but not testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>

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<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0860
Requirement	The SWIM-TI Messaging Data Validation configuration shall be policy based.
Title	Policy based configuration of SWIM-TI Messaging Data Validation
Status	<In Progress>
Rationale	Data Validation function aims at providing the ability to check for conformance of information being passed through the SWIM-TI. The conformance conditions are expressed in form of well-defined policy assertions assigned to the basic service interface specification. The policies can be defined (configured) at service or message type levels. Possible policies are those aiming at checking the conformance of message structures with relevant interoperability standards. This requirement covers NIST security controls SI-10.
Category	<Functional><Security>
Validation Method	
Verification Method	<Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Applicable but not testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

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[REQ]

Identifier	REQ-14.01.04-TS-0001.0865
Requirement	The SWIM-TI Messaging Data Validation shall be able to verify the validity of messages against the interoperability standards of the applicable binding.
Title	Interoperability standards validity checks
Status	<In Progress>
Rationale	Data Validation function aims at providing the ability to check for conformance of information being passed through the SWIM-TI. The conformance conditions are expressed in form of well-defined policy assertions assigned to the basic service interface specification. The policies can be defined (configured) at service or message type levels. Possible policies are those aiming at checking the conformance of message structures with relevant interoperability standards. This requirement covers NIST security controls SI-10.
Category	<Functional><Security>
Validation Method	
Verification Method	<Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Subscription handler><Publisher><Publication consumer><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Applicable but not testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0875
Requirement	The SWIM-TI Messaging Data Validation shall reject incoming messages non-compliant with protocol standards defined in the supported bindings.
Title	Interoperability standards validity checks
Status	<In Progress>

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Rationale	Data Validation function aims at providing the ability to check for conformance of information in the SWIM-TI. This requirement covers NIST security controls SI-10.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Subscription handler><Publisher><Publication consumer><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0880
Requirement	The SWIM-TI Messaging Data Validation shall check the incoming message payload according to the messaging policy.
Title	Messaging policy enforcement
Status	<In Progress>
Rationale	Data Validation function aims at providing the ability to check for conformance of information being passed through the SWIM-TI. The conformance conditions are expressed in form of well-defined policy assertions assigned to the basic service interface specification. The policies can be defined (configured) at service or message type levels. Possible policies are those aiming at checking the conformance of message structures with relevant interoperability standards. This requirement covers NIST security controls SI-10.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>

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Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Subscription handler><Publisher><Publication consumer><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
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<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
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[REQ]

Identifier	REQ-14.01.04-TS-0001.0885
Requirement	The SWIM-TI Messaging Data Validation shall be able to verify the validity of XML messages against associated XML Schema (XSD).
Title	XML Schema aware operations
Status	<In Progress>
Rationale	Data Validation function aims at providing the ability to check for conformance of information being passed through the SWIM-TI. The conformance conditions are expressed in form of well-defined policy assertions assigned to the basic service interface specification. The policies can be defined (configured) at service or message type levels. Possible policies are those aiming at checking the conformance of message structures with relevant interoperability standards. This requirement provides the list of interoperability standards for which the validity checks are enforced.
Category	<Functional><Security>
Validation Method	
Verification Method	<Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Subscription handler><Publisher><Publication consumer><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>

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Testability	<Applicable but not testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
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[REQ]

Identifier	REQ-14.01.04-TS-0001.0895
Requirement	The SWIM-TI Messaging Data Validation shall be able to access XML messages application data elements and attributes.
Title	XML Schema aware operation
Status	<In Progress>
Rationale	Data Validation function aims at providing the ability to check for conformance of information being passed through the SWIM-TI. The conformance conditions are expressed in form of well-defined policy assertions assigned to the basic service interface specification. The policies can be defined (configured) at service or message type levels. Possible policies are those aiming at checking the conformance of message structures with relevant interoperability standards. This requirement aims at allowing, when needed and possible (when one or more XML parts are not encrypted), the Messaging to access XML application data for validation purposes.
Category	<Functional>
Validation Method	
Verification Method	<Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Subscription handler><Publisher><Publication consumer><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Applicable but not testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A

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<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0901
Requirement	The SWIM-TI Messaging Data Management shall be able to transform XML messages to another format.
Title	XML Schema aware operations
Status	<In Progress>
Rationale	Generic functional requirement concerning messages transformation (when required, possible and allowed).
Category	<Functional>
Validation Method	
Verification Method	<Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Subscription handler><Publisher><Publication consumer><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Applicable but not testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
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[REQ]

Identifier	REQ-14.01.04-TS-0001.0905
Requirement	The SWIM-TI Messaging policy shall include URLs of supported service WSDLs.
Title	WSDL-related policy assertion
Status	<In Progress>
Rationale	Data Validation part of SWIM-TI messaging policy is made of assertions. WSDL policy assertions are applicable to BP, YP and PP Web Services. This requirement covers NIST security controls SI-10.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design>
Profile Part	<YP Core><BP Core><PP Messaging Bridging>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscription handler>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Applicable but not testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
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<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
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<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0910
Requirement	The SWIM-TI Messaging policy shall include URLs of application-level-messages schematron rules.
Title	XML-related policy assertion
Status	<In Progress>

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Rationale	Data Validation part of SWIM-TI messaging policy is made of assertions. Schematron-rule policy assertions are applicable to BP FDD, YP and PP application messages expressed in XML. This requirement covers NIST security controls SI-10.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Subscription handler><Publisher><Publication consumer><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Applicable but not testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0915
Requirement	The SWIM-TI Messaging policy shall include URLs of the syntax description of URL and URI in application-level messages.
Title	URL-related policy assertion
Status	<In Progress>
Rationale	Data Validation part of SWIM-TI messaging policy is made of assertions. URL-syntax policy assertions are applicable to YP messages referring external URLs or URIs. This requirement covers NIST security controls SI-10.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design>
Profile Part	<YP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer>

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Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Applicable but not testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0920
Requirement	The SWIM-TI Messaging policy shall include URLs of the application-level-messages XSDs.
Title	XSD-related policy assertion
Status	<In Progress>
Rationale	Data Validation part of SWIM-TI messaging policy is made of assertions. XSD policy assertions are applicable to BP for XML-based attributes of DDS Topics, YP and PP XML-based message content. This requirement covers NIST security controls SI-10.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Subscription handler><Publisher><Publication consumer><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Applicable but not testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
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<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>

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<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0925
Requirement	The SWIM-TI Messaging policy shall include URLs of JSON schemas.
Title	JSON-related policy assertion
Status	<In Progress>
Rationale	Data Validation part of SWIM-TI messaging policy is made of assertions. JSON policy assertions are applicable to YP JSON-based message content. This requirement covers NIST security controls SI-10.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design>
Profile Part	<YP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Applicable but not testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

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3.2.1.4 Messages Routing

[REQ]

Identifier	REQ-14.01.04-TS-0001.0261
Requirement	The SWIM-TI Message Routing shall provide routing based on the content of the message.
Title	Content based routing
Status	<In Progress>
Rationale	The SWIM-TI Message Routing shall determine the destination of a message as well as handle the failure transparency through, for instance, retries and sending the message to alternative destinations.
Category	<Functional>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><PP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Project>	14.02.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
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<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0262
Requirement	The SWIM-TI Message Routing shall provide routing based on the subject of the message.
Title	Subject based routing
Status	<In Progress>
Rationale	The SWIM-TI Message Routing shall determine the destination of a message as well as handle the failure transparency through, for instance, retries and sending the message to alternative destinations.
Category	<Functional>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><PP Core>

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Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Project>	14.02.01	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0263
Requirement	The SWIM-TI Message Routing shall provide routing based on the context of the message.
Title	Context-based routing
Status	<In Progress>
Rationale	The SWIM-TI Message Routing shall determine the destination of a message as well as handle the failure transparency through, for instance, retries and sending the message to alternative destinations.
Category	<Functional>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><PP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A

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<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0211
Requirement	The SWIM-TI Messaging shall provide, in the case of Request/Response interaction, the capability to perform a predefined number of automatic request retries in case no response is received within predefined time duration.
Title	Enable request retries in Request/Response when no response within a time period
Status	<Validated>
Rationale	To handle network failures and to provide some transparency during failover; it is necessary to support automatic request retries. This requirement contributes to support ED-133 IOP-FSM-142-MDW.This requirement covers NIST security controls SI-4 a.1
Category	<Functional><Security>
Validation Method	
Verification Method	<Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

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[REQ]

Identifier	REQ-14.01.04-TS-0001.0220
Requirement	When supported by underlying transport protocol, the SWIM-TI Messaging shall support request identification and include in all the retries the same request identification.
Title	Reuse same request identification during a request retry in a Request/Response interaction.
Status	<In Progress>
Rationale	When it is needed to enforce at most once semantics, request issuers should be able to provide some identification to the request.
Category	<Functional>
Validation Method	
Verification Method	<Test>
Profile Part	<YP Core><BP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0242
Requirement	SWIM-TI Message Routing shall allow routing by enforcing Routing Policy.
Title	Policy Based SWIM-TI Message Routing
Status	<In Progress>
Rationale	Not all the information exchanged through the SWIM-TI may need the same handling by the SWIM-TI Message Routing.
Category	<Design><Functional>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+><BP Core><PP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>

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Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

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3.2.1.5 Protocol Bridge

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.2.1.6 Other Functional Requirements

In this section additional functional requirements are provided.

[IREQ]

Identifier	REQ-14.01.04-TS-0013.0560
Requirement	The SWIM-TI Messaging shall be able to enforce the following messaging policies: + Compression Policy; + Quality of Service Policy.
Title	Messaging Policy Kinds enforcement
Status	<Validated>
Rationale	The list of messaging policy kinds the SWIM-TI Messaging shall be able to enforce.
Category	<Functional>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<BP Core><YP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED TO>	<Functional block>	MSG	N/A
<APPLIES TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0021
Requirement	The SWIM-TI Messaging shall allow data compression.
Title	Support of Data Compression Techniques
Status	<Validated>
Rationale	The SWIM-TI Messaging is used to enable data exchanges among geographically distributed entities (wide area deployment). Taking into account this deployment view, performance bottlenecks due to sizing aspects (e.g. number of entities, exchange rate, data size, etc.) could impact

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	the overall messaging performance thus it is required to allow data compression techniques. Data compression can be realised in more than 1 one way and at distinct levels. For example, the ATM application layer can provide a compressed payload to the SWIM-TI. The SWIM-TI itself can also provide data compression. The SWIM-TI shall not prevent the use of data compression inside the SWIM-TI nor compression performed at the ATM application layer. Efficient XML Interchange (EXI) is also to be considered for XML-based messages.
Category	<Functional><Performance>
Validation Method	
Verification Method	<Review of Design><Analysis>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0033
Requirement	The SWIM-TI Messaging shall allow to configure data compression on a Compression Policy basis.
Title	Support of Policy based Compression Configurability
Status	<Validated>
Rationale	SWIM-TI Messaging should support data compression techniques. Taking into account that this capability is used in different contexts and scenarios having different requirements, it is needed that, when supported, the data compression is policy based. Compression algorithm may or may not only be used for bulk data

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	distributions (e.g. Push messaging or Pub/Sub) to reduce the impact on performance. A message size multiplies by encryption security measures. This triggers in turn the need for a compression algorithm for message exchange even for non-bulk data. It will be needed to compress SOAP messages that are larger than a threshold (by a configurable parameter with a default value); for smaller messages the overhead by compression (i.e. CPU time spent) would be too large. (Refer to Eurocontrol 14.01.02 D04 Ground/Ground Technology & Service Option Survey Step2 for some examples). EXI is also an alternative for XML documents whatever their size. EXI is mutually exclusive with the use of ASN.1 in Purple Profile. In particular in the Purple Profile ITU XER (ITU-T X.694 | ISO/IEC 8825-5) is used as reference to map XSD and ASN.1.
Category	<Functional>
Validation Method	
Verification Method	<Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.09-SWIM-MSG-4	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
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<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0041
Requirement	The SWIM-TI Messaging shall support reliable transport layers.
Title	Support of Reliable Transport Layers
Status	<Validated>
Rationale	The SWIM-TI Messaging is used to enable data exchanges among geographical distributed entities (wide area deployment). Taking into

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	account this and also that in this deployment data loss at transport layer may occur, it is required to support reliable technologies at transport layer. Supported reliable transports include TCP (Transmission Control Protocol) and DDSI (DDS Interoperability Wire Protocol). The DDSI transport is used only in the Blue Profile.
Category	<Functional><Performance>
Validation Method	
Verification Method	<Test>
Profile Part	<YP Core><BP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.09-SWIM-MSG-5	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0052
Requirement	The SWIM-TI Messaging shall allow to configure Quality of Service on a Quality of Services Policy basis.
Title	Support of Policy based QoS Configurability
Status	<Validated>
Rationale	The SWIM-TI Messaging is used to enable the exchanging of different types of data with different QoS requirements. For instance, for some data could be required a reliable delivery whereas the best-effort delivery could be enough for other types of data. Other examples: . The type of keys to use (shared secret key or public key) , the strength of the keys to use (number of bits), and the algorithms to use to sign may need to be configured differently depending on the type of service . Retries may have to be performed in case of timeout in which case the number of retries, the timeout values, etc., need to be configured differently depending on the type service Taking into account these considerations, it is required that the SWIM-TI Messaging shall allow to configure properly such QoSs.
Category	<Functional>
Validation Method	

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Verification Method	<Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Publication consumer><Subscription handler>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.09-SWIM-MSG-6	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
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<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0091
Requirement	The SWIM-TI Messaging shall allow durable subscriptions.
Title	Support of Durable Subscription functionality
Status	<Validated>
Rationale	The Messaging provides durable subscription mechanisms. A durable subscription mechanism saves messages for an inactive subscriber and after the disconnected period, it delivers these saved messages when the subscriber is reconnected. In this way, a subscriber will not lose any messages which are published while it was disconnected. Note that it has no effect on the behaviour of the subscriber or the messaging system while the subscriber is connected. A connected subscriber acts the same whether its subscription is durable or non-durable. The difference is in how the messaging behaves when the subscriber is disconnected. Some typical use cases for durable subscriptions include: - restart of publisher without requiring subscribers to re-subscribe; - restart of a subscriber without re-subscription to avoid multiple subscriptions. Subscriptions and messages have typically lifetime duration. In that case, the durable subscriptions mechanisms should take into account those QoS.
Category	<Functional>
Validation Method	
Verification Method	<Test>

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Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscriber><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<ATMS Requirement>	P14.02.09-SWIM-MSG-11	<Full>
<SATISFIES>	<ATMS Requirement>	09.19-D03-050	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Project>	14.02.01	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
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<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-00**01**.0141
Requirement	The SWIM-TI Messaging shall provide the following metrics for the Publish/Subscribe pattern: + Number of data publications. + Time of the last data publication. + Number of failed data publications. + Number of received data publications. + Time of the last received data publication. + Number of missing data publications.
Title	Statistic Metrics provided for Publish-Subscribe pattern.
Status	<In Progress>
Rationale	The SWIM-TI Messaging supports several MEPs (Message Exchange Patterns) including Publish-Subscribe. It represents one of the most important capabilities and, in order to support monitoring activities, it is needed that it supports the reporting of such metrics. This requirement covers NIST security controls SI-4 a.1
Category	<Functional><Security>
Validation Method	
Verification Method	<Test>
Profile Part	<YP Core><BP Core><PP Core>

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Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.09-SWIM-MSG-17	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-00**01**.0151
Requirement	The SWIM-TI Messaging shall provide the following metrics for the Request/Response pattern: + Number of Requests. + Time of the Last Request. + Number of Failed Requests. + Number of Successful Requests. + Maximum Response Time. + Last Response Time.
Title	Statistic Metrics provided for the Request-Response pattern
Status	<In Progress>
Rationale	The SWIM-TI Messaging supports several MEPs (Message Exchange Patterns) including Request-Response. It represents one of the most important capabilities and, in order to support monitoring activities, it is needed that it supports the reporting of such metrics. This requirement covers NIST security controls SI-4 a.1
Category	<Functional><Security>
Validation Method	
Verification Method	<Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>

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Roles	<Service provider><Service consumer>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.09-SWIM-MSG-18	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0231
Requirement	The SWIM-TI Messaging shall allow a service provider to retrieve any request identification attached to the request.
Title	Retrieve request identification, if any.
Status	<Validated>
Rationale	When a service provider is willing to detect request retries, it shall be capable of retrieving any request identification that is attached to the incoming request.
Category	<Functional>
Validation Method	
Verification Method	<Test>
Profile Part	<YP Core><BP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A

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<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0340
Requirement	The SWIM-TI Messaging shall enable prioritization between messages and prioritization between messages and other traffic distributed on the same underlying communication network.
Title	SWIM-TI Messaging support of messages and other traffic prioritization
Status	<In Progress>
Rationale	To support various types of services over the same communication network.
Category	<Functional>
Validation Method	
Verification Method	<Test>
Profile Part	<YP Core><PP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	09.19-D03-330	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
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[REQ]

Identifier	REQ-14.01.04-TS-0001.0680
Requirement	The SWIM-TI Messaging PSPULL-MEP shall provide subscription persistency across reboot and crash of the entity managing the subscriptions.
Title	PSPULL-MEP Subscription persistency support
Status	<Validated>

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Rationale	It is much more efficient and reliable to make the entity managing the subscriptions responsible for the persistence, than to have every subscriber maintain a complex infrastructure to ensure its subscription on any topic anywhere is not lost. This requirement covers NIST security controls SC-24.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Subscriber><Publication consumer><Subscription handler>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
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<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0690
Requirement	The SWIM-TI Messaging PSPUSH-MEP shall provide subscription persistency across reboot and crash of the entity managing the subscriptions.
Title	PSPUSH-MEP Subscription persistency support
Status	<Validated>
Rationale	It is much more efficient and reliable to make the entity managing the subscriptions responsible for the persistence, than to have every subscriber maintain a complex infrastructure to ensure its subscription on any topic anywhere is not lost. This requirement covers NIST security controls SC-24.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Subscriber><Publication consumer><Subscription handler>

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Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Project>	14.02.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0701
Requirement	The SWIM-TI Messaging PSPULL-MEP shall provide message persistency across reboot and crash of the entity managing the messages.
Title	PSPULL-MEP Message persistency support
Status	<Validated>
Rationale	It is much more efficient and reliable to make the entity managing the push or the entity managing the pullpoint responsible for the message persistence, than to have both subscriber and publisher maintain a complex infrastructure to detect message loss and to allow for recuperation. This requirement covers NIST security controls SC-24
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A

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<ALLOCATED_TO>	<Project>	14.02.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0001.0711
Requirement	The SWIM-TI Messaging PSPUSH-MEP shall provide message persistency across reboot and crash of the entity managing the messages.
Title	PSPUSH-MEP Message persistency support
Status	<Validated>
Rationale	It is much more efficient and reliable to make the entity managing the push or the entity managing the pullpoint responsible for the message persistence, than to have both subscriber and publisher maintain a complex infrastructure to detect message loss and to allow for recuperation. This requirement covers NIST security controls SC-24
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>

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<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

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3.2.2 Adaptability

This section includes adaptability requirements as documented in ISO/IEC 25010:2011. In particular, requirements included in this section refer to adaptability sub-characteristic of portability NFRs.

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

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3.2.3 Performance Characteristics

This section includes performance efficiency requirements as documented in ISO/IEC 25010:2011. The structure of the section is in accordance with performance efficiency NFR sub-characteristics described in ISO/IEC 25010:2011: (§3.2.3.1) time behaviour, (§3.2.3.2) resource utilization and (§3.2.3.3) capacity.

3.2.3.1 Time behaviour Requirements

This section provides requirements concerning SWIM-TI MSG time behaviour.

[REQ]

Identifier	REQ-14.01.04-TS-0201.0130
Requirement	All the SWIM-TI MEP of the Request/Reply category shall support a transit-time constraint for a one-way message between external interfaces in the SWIM Node as follows. + Measurements: - 95% of the messages <= 2 s - 98% of the messages <= 3 s + Measurement conditions: - integrity and confidentiality at transport level - no encryption and no signing at message level - Session setup, no session reuse - Message size <= 1 MB - Full load, no overload - no on the fly compression
Title	SWIM-TI Request/Response MEP performance core without reuse
Status	<In Progress>
Rationale	The requirement is expressed in a specific form as documented in 14.01.04 Requirements Guidelines. Note that this requirement only scopes a single SWIM-Node. This requirement does not encompass other SWIM-Nodes, the Communications Infrastructure, functionality elsewhere in the SWIM-TI, ATM Enabled specific application or overall federated ATM SoS. Session setup of a connection between communicating parties with integrity and confidentiality at transport requires extra processing due to the session setup and the establishment of the security controls at the transport level. These specifications suit use cases that are not dependent on fast processing time and that are not dependent on high predictability of the processing time at the service provider side at session setup. Note: this is a requirement concerning Efficiency sub-characteristic of Performance.
Category	<Performance>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<SLA>
Point of view	<SWIM-TI provider>
Roles	<Service provider>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

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[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0201.0140
Requirement	All the SWIM-TI MEP of the Request/Reply category shall support a transit-time constraint for a one-way message between external interfaces in the SWIM Node as follows. + Measurements: - 95% of the messages <= 1 s - 99,5% of the messages <= 2 s + Measurement conditions: - integrity and confidentiality at transport level - no encryption and no signing at message level - Session setup, no session reuse - Message size <= 1 MB - Full load, no overload - no on the fly compression
Title	SWIM-TI Request/Response MEP performance advanced without reuse
Status	<In Progress>
Rationale	The requirement is expressed in a specific form as documented in 14.01.04 Requirements Guidelines. Note that this specification only scopes a single SWIM-Node. This specification does not encompass other SWIM-Nodes, the Communications Infrastructure, functionality elsewhere in the SWIM-TI, ATM Enabled specific application or overall federated ATM SoS. Session setup of a connection between communicating parties with integrity and confidentiality at transport level requires extra processing due to the session setup and the establishment of the security controls at the transport level. These specifications suit use cases that are dependent on fast processing time and on high predictability of the processing time at the service provider side at session setup. Note: this is a requirement concerning Efficiency sub-characteristic of Performance.
Category	<Performance>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Advanced>
Domain of interest	<SLA>
Point of view	<SWIM-TI provider>
Roles	<Service provider>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>

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Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0201.0150
Requirement	All the SWIM-TI MEP of the Request/Reply category shall support a transit-time constraint for a one-way message between external interfaces in the SWIM Node as follows. + Measurements: - 95% of the messages <= 0,5 s - 98% of the messages <= 1 s + Measurement conditions: - integrity and confidentiality at transport level - no encryption and no signing at message level - session reuse - Message size <= 1 MB - Full load, no overload - no on the fly compression
Title	SWIM-TI Request/Response MEP performance core with reuse
Status	<In Progress>
Rationale	The requirement is expressed in a specific form as documented in 14.01.04 Requirements Guidelines. Note that this specification only scopes a single SWIM-Node. This specification does not encompass other SWIM-Nodes, the Communications Infrastructure, functionality elsewhere in the SWIM-TI, ATM Enabled specific application or overall federated ATM SoS. Session reuse of a connection between communicating parties with integrity and confidentiality at transport requires less processing compared to session setup. These specifications suit use cases that are not dependent on fast processing time and that are not dependent on high predictability of the processing time at the service provider side at session reuse. Note: this is a requirement concerning Efficiency sub-characteristic of Performance.
Category	<Performance>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<SLA>
Point of view	<SWIM-TI provider>
Roles	<Service provider>
Selfstanding set	<Not applicable>
Conformance	<No>

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High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0201.0160
Requirement	All the SWIM-TI MEP of the Request/Reply category shall support a transit-time constraint for a one-way message between external interfaces in the SWIM Node as follows. + Measurements: - 95% of the messages <= 0,3 s - 99,5% of the messages <= 1 s + Measurement conditions: - integrity and confidentiality at transport level - no encryption and no signing at message level - session reuse - Message size <= 1 MB - Full load, no overload - no on the fly compression
Title	SWIM-TI Request/Response MEP performance advanced with reuse
Status	<In Progress>
Rationale	The requirement is expressed in a specific form as documented in 14.01.04 Requirements Guidelines. Note that this specification only scopes a single SWIM-Node. This specification does not encompass other SWIM-Nodes, the Communications Infrastructure, functionality elsewhere in the SWIM-TI, ATM Enabled specific application or overall federated ATM SoS. Session reuse of a connection between communicating parties with integrity and confidentiality at transport requires less processing compared to session setup. These specifications suit use cases that are dependent on fast processing time and on high predictability of the processing time at the service provider side at session reuse. Note: this is a requirement concerning Efficiency sub-characteristic of Performance.
Category	<Performance>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Advanced>
Domain of interest	<SLA>
Point of view	<SWIM-TI provider>
Roles	<Service provider>

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Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0201.0171
Requirement	The SWIM-TI PSPUSH-MEP shall be able to distribute and notify as follows. + Measurements: - 200 notifications per minute sent by the publication mediation + Measurement conditions: - no integrity and confidentiality at transport level - no encryption and no signing at message level - Session setup, no session reuse - Message size <= 1 MB - Full load, no overload - no on the fly compression - any number of subscribers may be offline - a network throughput >= 50 MB/s
Title	Publish/Subscribe MEP notification performances
Status	<In Progress>
Rationale	The requirement is expressed in a specific form as documented in 14.01.04 Requirements Guidelines. In some use cases the combined effect of the number of subscribers, the number of events and the nature of the event, will not require a high level of fair distribution in time of arrival of the notification between the first and last subscriber nor a high throughput to avoid queuing and starvation. Note: this is a requirement concerning Efficiency sub-characteristic of Performance.
Category	<Performance>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<SLA>
Point of view	<SWIM-TI provider>
Roles	<Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance

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<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0201.0181
Requirement	The SWIM-TI PSPUSH-MEP shall be able to distribute and notify as follows. + Measurements: - 2000 notifications per minute sent by the publication mediation + Measurement conditions: - no integrity and confidentiality at transport level - no encryption and no signing at message level - Session setup, no session reuse - Message size <= 1 MB - Full load, no overload - no on the fly compression - any number of subscribers may be offline - a network throughput >= 50 MB/s
Title	Publish/Subscribe MEP notification performances
Status	<In Progress>
Rationale	The requirement is expressed in a specific form as documented in 14.01.04 Requirements Guidelines. Assuming 4000 active airlines in Europe of which half (2000) are subscribed to events that have a direct operational impact in the network. In order to ensure timely and fair delivery to all subscribers it should be possible to deliver a single event to up to 2000 subscribers within 1 minute. This time window also ensure that queuing and starvation are avoided leading to non-timely delivery. Note: this is a requirement concerning Efficiency sub-characteristic of Performance.
Category	<Performance>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Advanced>
Domain of interest	<SLA>
Point of view	<SWIM-TI provider>
Roles	<Publication consumer><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

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3.2.3.2 Resource utilization Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.2.3.3 Capacity Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

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3.2.4 Safety & Security

This section includes security requirements as documented in ISO/IEC 25010:2011. The structure of the section is in accordance with security NFR sub-characteristics described in ISO/IEC 25010:2011: (§3.2.4.1) confidentiality, (§3.2.4.2) integrity, (§3.2.4.3) non-repudiation, (§3.2.4.4) accountability and (§3.2.4.5) authenticity. Furthermore, according to SJU guidelines, a dedicated subsection (§3.2.4.6) is provided for safety requirements.

3.2.4.1 Confidentiality Requirements

[REQ]

Identifier	REQ-14.01.04-TS-0401.0020
Requirement	Confidentiality shall be provided through encryption at message level.
Title	Confidentiality through message level encryption
Status	<Validated>
Rationale	Encryption at message level serves as a tool supporting confidentiality. Note: this is a requirement concerning Confidentiality sub-characteristic of Security. The SWIM-TI Messaging will use the SWIM-TI Security to realise the encryption and decryption. This requirement covers NIST security controls SC-8 (1) and SC-11.
Category	<Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<SLA>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

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3.2.4.2 Integrity Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.2.4.3 Non-repudiation Requirements

[REQ]

Identifier	REQ-14.01.04-TS-0401.0010
Requirement	Non-repudiation and authenticity shall be supported through electronic signing at message level.
Title	Non-repudiation and authenticity through electronic signing
Status	<Validated>
Rationale	Electronic message signing serves as a tool supporting non-repudiation. The electronic signature can be used to authenticate the originator. Note: this is a requirement concerning Non-repudiation sub-characteristic of Security. The SWIM-TI Messaging will use the SWIM-TI Security to realise the digital signature creation and verification. This requirement covers NIST security controls SC-8 (1)
Category	<Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<SLA>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

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3.2.4.4 Accountability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.2.4.5 Authenticity Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.2.4.6 Safety Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

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3.2.5 Maintainability

This section includes maintainability requirements as documented in ISO/IEC 25010:2011. The structure of the section is in accordance with maintainability NFR sub-characteristics described in ISO/IEC 25010:2011: (§3.2.5.1) modularity, (§3.2.5.2) reusability, (§3.2.5.3) analysability, (§3.2.5.4) modifiability and (§3.2.5.5) testability.

3.2.5.1 Modularity Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.2.5.2 Reusability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.2.5.3 Analysability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.2.5.4 Modifiability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.2.5.5 Testability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

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3.2.6 Reliability

This section includes reliability requirements as documented in ISO/IEC 25010:2011. The structure of the section is in accordance with reliability NFR sub-characteristics described in ISO/IEC 25010:2011: (§3.2.6.1) maturity, (§3.2.6.2) availability, (§3.2.6.3) fault tolerance and (§3.2.6.4) recoverability.

3.2.6.1 Maturity Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.2.6.2 Availability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.2.6.3 Fault tolerance Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.2.6.4 Recoverability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

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3.2.7 Internal Data Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

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3.2.8 Design and Construction Constraints

This section includes compatibility and portability requirements as documented in ISO/IEC 25010:2011. The structure of the section is in accordance with sub-characteristics of both compatibility and portability NFR described in ISO/IEC 25010:2011: (§3.2.8.1) co-existence and (§3.2.8.2) interoperability compatibility NFR sub-characteristics, (§3.2.8.3) installability and (§3.2.8.4) replaceability portability NFR sub-characteristics.

[REQ]

Identifier	REQ-14.01.04-TS-0801.0105
Requirement	The SWIM-TI Messaging Data Validation shall be implemented relying on OTS/COTS products.
Title	OTS/COTS Libraries based Data Validation Implementation
Status	<In Progress>
Rationale	SWIM Technical Infrastructure shall be based upon well-recognized or emerging IT standard that are supported by mainstream IT OTS/COTS product in the market, that only require little or no further development/customisation.
Category	<Design>
Validation Method	
Verification Method	<Review of Design>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Subscription handler><Publisher><Publication consumer><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Applicable but not testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

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3.2.8.1 Co-existence Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.2.8.2 Interoperability Requirements

Refer to interoperability requirements in §3.1.8.

3.2.8.3 Installability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.2.8.4 Replaceability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

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3.2.9 Interface Requirements

The following requirement applies to all external service interfaces.

[REQ]

Identifier	REQ-14.01.04-TS-0901.0840
Requirement	The interface binding contract shall reference the authoritative procedure that describes the versioning mechanisms, which are applicable to the contract and any of its constituents.
Title	The contract itself shall be versioned.
Status	<In Progress>
Rationale	A study on versioning of the service interface has revealed that there is not one size that fits all. The effective organisation of versioning is decided at service instantiation. This requirement ensures that whatever option is taken, that the option is known to all impacted Stakeholders In the SWIM Profiles Technical Specifications “Interface Evolution Analysis” several rules and recommendations that ATM Service architects may adopt and/or complement are provided. Interface evolution analysis focus on evolution of only STDD (Service Technical Design Description) “Service Technical Interfaces” part because its relationship with SWIM-TI interface bindings specifications. Some of the rules/recommendations are SWIM-TI Profiles Interface Bindings independent whereas other are binding specific due to particular standards adopted in that binding. For instance rules on XSD modelling techniques to achieve minor version compatibility are only applicable to interface bindings using XML/XSD. Furthermore, ATM service implementations versioning is not addressed. In particular for a given version of the STDD, a stakeholder may plan different versions of the service implementation. According to the “Contract first” (STDD) approach, changes on service implementations are not expected to impact technical interoperability (the STDD version is the same) if what specified in the STDD is properly used as reference by both provider and consumer.
Category	<Interface>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><YP Security+><YP Messaging+><BP Core><BP FDD><PP Core><PP Messaging Bridging>
Domain of interest	<ICD><Governance><SLA>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A

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<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0310	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0311	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0790	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0795	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0304	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0305	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0306	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0760	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0308	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0765	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0307	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0770	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0309	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0775	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0317	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0780	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0318	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0785	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0751	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0752	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0705	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0710	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0715	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0720	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0325	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0700	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0800	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0801	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0802	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0803	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0804	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0805	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0806	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0807	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

Concrete examples of services using YP AMQP 1.0 and WS-N interface bindings are provided in Appendix A.

3.2.9.1 Service Interface Bindings

In Appendix D Interface Evolution analysis, applicable to ATM services using interface bindings part of this Technical Specification, is provided.

The Yellow Profile is explicitly targeted at providing interoperability between ATM specific service consumer and providers using standards that qualify under the term Web Services.

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Whichever form of Web Services is used, the SWIM-TI will always have to provide a minimum of integrity and authenticity in the scope of the interoperability that it provides to the ATM specific service consumers and providers independent of security controls that may exist at the level of the ATM specific services themselves.

The SWIM-TI may rely on the Communications Infrastructure to provide a security control.

[REQ]

Identifier	REQ-14.01.04-TS-0901.0351
Requirement	Every message that flows through the SWIM-TI via an external service interface between a service consumer and a service provider and vice versa shall be protected by a security control that provides integrity.
Title	Integrity is mandatory for external service Interface
Status	<In Progress>
Rationale	It must be possible to verify the message integrity to detect integrity violation by for instance corruption or malicious act during transit in the SWIM-TI. The quality of the integrity will depend on the placement (e.g. transport level or message level), the type (e.g. algorithms and keys used) and the number of such security controls This requirement covers NIST security controls SC-8 (1)
Category	<Interface><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<SLA><ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0901.0352
Requirement	Every message that flows through the SWIM-TI via an external service interface between a service consumer and a service provider and vice versa shall be protected by a security control that provides authenticity.
Title	Authenticity is mandatory for external service Interface
Status	<In Progress>
Rationale	It must be possible to verify the authenticity of the producer of a message, the receiver of a message or both to detect authenticity violation by for instance spoofing. The quality of the authenticity will depend on the placement (e.g. transport level or message level), the type (e.g. user password, algorithms and keys used, replay protection) and the number of such security controls This requirement covers NIST security control AC-17 (2).
Category	<Interface><Security>

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Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<SLA><ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

The supported number of variations is kept to a minimum when the security mechanisms cover and support the variations of the 3 main structuring elements of security.

Scope	User Pwd	X.509	SAML	SOAP1.1	SOAP1.2
Transport		X		REQ-14.01.04-TS-0901.0304	REQ-14.01.04-TS-0901.0305
Message + Transport	X			REQ-14.01.04-TS-0901.0306	REQ-14.01.04-TS-0901.0308
Message		X		REQ-14.01.04-TS-0901.0307	REQ-14.01.04-TS-0901.0309
Message + Federated		X	X	REQ-14.01.04-TS-0901.0317	REQ-14.01.04-TS-0901.0318

The above table provides an overview of the all the SOAP X security variations in the Yellow Profile.

The first three rows represent the variations that are part of the “core” part of the Yellow Profile.

As the provider of a service may do so, not using the SOAP based subset of Web Services, none of the binding specifications in the above table is mandatory. However when one or more of these bindings are used, then the service must be offered by the provider through both a SOAP1.1 binding as well as the correlated equivalent SOAP1.2 binding.

A service provider who conforms to the Yellow Profile “core” may use any number including zero, of security variations, provided that the provider always offers the service both in the SOAP 1.1 version and in the SOAP1.2 version.

A consumer who conforms to the Yellow Profile “core” will be able to consume a service bound to each of these variations either in the SOAP1.1 version or in the SOAP1.2 version.

The last row represents the variations that are part of the optional “security+” part of the Yellow Profile.

A service provider who conforms to the Yellow Profile “security+” may use the federated security variations, provided that the provider always offers the service both in the SOAP 1.1 version and in the SOAP1.2 version,

A consumer who conforms to the Yellow Profile “security+” will be able to consume a service bound to the federated security variation either in the SOAP1.1 version or in the SOAP1.2 version.

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[REQ]

Identifier	REQ-14.01.04-TS-0901.0354
Requirement	A SOAP based service shall be provided using equivalent bindings of which one is using SOAP1.1 and the other is using SOAP1.2 according following equivalence: - REQ-14.01.04-TS-0901.0304 and REQ-14.01.04-TS-0901.0305 are equivalent; - REQ-14.01.04-TS-0901.0306 and REQ-14.01.04-TS-0901.0308 are equivalent; - REQ-14.01.04-TS-0901.0307 and REQ-14.01.04-TS-0901.0309 are equivalent; - REQ-14.01.04-TS-0901.0317 and REQ-14.01.04-TS-0901.0318 are equivalent; - REQ-14.01.04-TS-0901.0790 and REQ-14.01.04-TS-0901.0795 are equivalent; - REQ-14.01.04-TS-0901.0760 and REQ-14.01.04-TS-0901.0765 are equivalent; - REQ-14.01.04-TS-0901.0770 and REQ-14.01.04-TS-0901.0775 are equivalent.
Title	Yellow Profile Core requires SOAP1.1 and SOAP1.2 binding
Status	<In Progress>
Rationale	Consumer friendliness requires that a consumer can choose to use a SOAP1.1 based stack or a SOAP1.2 based stack for every service in the Yellow Profile Core.
Category	<Interface>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0304	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0305	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0306	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0307	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0308	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0309	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0317	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0318	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

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The YP profile supports two configurations that do not fall in the SOAP-based category. These configurations are aligned with existing uses as well as potential uses.

The first binding provides the simplest and most flexible method to communicate any form of data. It does not impose nor provide a particular format to describe the operations and the data in a way that can be handled by a machine. The services that are offered through this binding have to provide a description of the operations and the data but it can vary from XSD to a textual description.

The second form provides a lightweight method to provide services and to access services. This binding is similar to the first but more strict than the first as it provides and imposes a description of the data in a way that can be handled by a machine, i.e. XSD.

[REQ]

Identifier	REQ-14.01.04-TS-0901.0310
Requirement	Generic service instantiation shall be supported on the following interface binding. + Protocol stack: HTTPS GET/POST/PUTDELETE/HEAD over TCP. + MEPs: SRR-MEP + Fault handling: the service shall be able to determine the content of the HTTP status code and HTTP reason phrase + Encoding: - HTTP GET: request URL encoding, response IANA registered MIME Media Types, protocol specific extensions - HTTP POST: request application/x-www-form-urlencoded or text/xml encoding or multipart/form-data or application/octet-stream or application/exi, response IANA registered MIME Media Types, protocol specific extensions - HTTP PUT: request IANA registered MIME Media Types, protocol specific extensions and vendor proprietary extensions, response IANA registered MIME Media Types, protocol specific extensions - HTTP DELETE: request URL encoding, response IANA registered MIME Media Types, protocol specific extensions and vendor proprietary extensions, response IANA registered MIME Media Types, protocol specific extensions - HTTP HEAD: request URL encoding, no response body expected + Security - Confidentiality: transport - Integrity: transport - Authenticity: transport mutual - Authorization: transport - Non-repudiation: none + Contract: - formalism of contract description: not fully standardised. Partially standardised through MIME-type. In case of MIME-type application/xml or text/xml provision of all applicable XSDs is required. A service provider will document the supported MIME-types. - minimum: not applicable - reference: ISRM
Title	Generic interface Binding. Over HTTPS GET/POST over TCP.
Status	<In Progress>
Rationale	This type of binding is already provided by NM B2B for retrieving zipped AirspaceStructure documents.

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	The set of OGC protocols WMS, WFS, WCS and WPS use HTTP GET and POST methods. Encodings are not limited to standardized MIME types but also use vendor specific types from OGC. GET and POST are commonly used HTTP methods that are often not blocked by security controls. In the matter of exchange of files, HTTP provides support for exchange of binary data directly. In such case use of content type application/octet-stream is mandated for upload when using POST. In order to support other mechanisms with POST that are well-known in the context of HTML, the content types application/x-www-form-urlencoded and multipart/form-data have been mandated. A RESTful style of Web Services, can be realised through the HTTP methods GET, POST, PUT, DELETE and HEAD. Security controls are all at transport (HTTP over TLS) level. Authenticity (or Authentication) at transport level has not to be confused with HTTP Basic and Digest Access Authentication that are not supported by this binding. This requirement covers NIST security controls SC-8 (1)
Category	<Interface><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer>
Selfstanding set	<Service binding>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0270	N/A

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<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0002.0200	<Full>
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[REQ]

Identifier	REQ-14.01.04-TS-0901.0311
Requirement	Generic service instantiation shall be supported on the following interface binding. + Protocol stack: Plain Old XML (POX) over HTTPS POST over TCP. + MEPs: SRR-MEP + Fault handling: the service shall be able to determine the content of the HTTP status code and HTTP reason phrase + Encoding: - HTTP POST: application/xml or application/exi; charset=UTF-8 + Security: - Confidentiality: transport - Integrity: transport - Authenticity: transport mutual - Authorization: transport - Non-repudiation: none + Contract:: - existing: described in XSD - future: described in XSD + Contract: - formalism of contract description: described in XSD - minimum: not applicable - reference: ISRM
Title	Generic interface Binding. Plain Old XML (POX) over HTTPS POST over TCP.
Status	<In Progress>
Rationale	This type of binding is already provided by NM B2B as alternative for a SOAP encapsulation. All security controls are located at transport level (HTTP over TLS). Authenticity (or Authentication) at transport level has not to be confused with HTTP Basic and Digest Access Authentication that are not supported by this binding. This requirement covers NIST security controls SC-8 (1).
Category	<Interface><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><PP Messaging Bridging>

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Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer>
Selfstanding set	<Service binding>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

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Two Identical bindings, one for a SOAP 1.1 based messaging protocol and one for a SOAP1.2 based messaging protocol.

These bindings situate all the security controls at the transport level.

[REQ]

Identifier	REQ-14.01.04-TS-0901.0790
Requirement	Generic service instantiation shall be supported on the following interface binding: + Protocol stack: - SOAP 1.1 over HTTPS POST over TCP + MEPs: - SRR-MEP + Fault handling: - the service shall be able to determine the content of the HTTP status code and HTTP reason phrase + Encoding: - Text encoding - Binary encoding: MTOM + Security: - Confidentiality: transport - Integrity: transport - Authenticity: transport mutual - Authorization: transport - Non-repudiation: none + Contract: - formalism of contract description: WSDL (1.1 and optionally 2.0) and XSD - minimum: WSDL - reference: ISRM + Interoperability: WS-I Basic Profile 1.2
Title	Generic SRR-MEP interface binding. SOAP 1.1 over HTTPS POST over TCP.
Status	<Validated>
Rationale	Generic binding to be used to instantiate specific ATM specific services using SWIM-TI Blue and Yellow Profiles. All the security controls are provided at the transport level establishing a design and run-time dependency with PKIs. Authenticity (or Authentication) at transport level has not to be confused with HTTP Basic and Digest Access Authentication that are not supported by this binding. This requirement covers NIST security controls SC-8 (1).
Category	<Interface><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer>
Selfstanding set	<Service binding>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Project>	14.02.09	N/A

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[REQ]

Identifier	REQ-14.01.04-TS-0901.0795
Requirement	Generic service instantiation shall be supported on the following interface binding: + Protocol stack: - SOAP 1.2 over HTTPS POST over TCP + MEPs: - SRR-MEP + Fault handling: - the service shall be able to determine the content of the HTTP status code and HTTP reason phrase + Encoding: - Text encoding - Binary encoding: MTOM + Security: - Confidentiality: transport - Integrity: transport - Authenticity: transport mutual - Authorization: transport - Non-repudiation: none + Contract:

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	- formalism of contract description: WSDL (1.1 or 2.0) and XSD - minimum: WSDL - reference: ISRM + Interoperability: WS-I Basic Profile 2.0
Title	Generic SRR-MEP interface binding. SOAP 1.2 over HTTPS POST over TCP.
Status	<Validated>
Rationale	Generic binding to be used to instantiate specific ATM specific services using SWIM-TI Blue and Yellow Profiles. All the security controls are provided at the transport level establishing a design and run-time dependency with PKIs. Authenticity (or Authentication) at transport level has not to be confused with HTTP Basic and Digest Access Authentication that are not supported by this binding. This requirement covers NIST security controls SC-8 (1).
Category	<Interface><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer>
Selfstanding set	<Service binding>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
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[REQ]

Identifier	REQ-14.01.04-TS-0901.0304
Requirement	Generic service instantiation shall be supported on the following interface binding. + Protocol stack: SOAP 1.1 over HTTPS POST over TCP. + MEPs: SRR-MEP, PSPUSH-MEP, PSPULL-MEP + Fault handling: the service shall be able to determine the content of the HTTP status code and HTTP reason phrase + Encoding. - Text encoding - Binary encoding: MTOM + Security: - Confidentiality: transport - Integrity: transport - Authenticity: transport mutual - Authorization: transport - Non-repudiation: none + Contract: - formalism of contract description: WSDL 1.1 and optionally WSDL 2.0 - minimum: OASIS WS-N and structure of Topics - reference: OASIS WS-N, ISRM + Interoperability: WS-I Basic Profile 1.2
Title	Generic interface Binding. SOAP 1.1 over HTTPS POST over TCP.
Status	<Validated>
Rationale	This type of binding is already provided by NM B2B.The binding is targeted at SOAP 1.1.All the security controls are provided at the transport level. Authenticity (or Authentication) at transport level has not to be confused with HTTP Basic and Digest Access Authentication that are not supported by this binding. This requirement covers NIST security controls SC-8 (1).
Category	<Interface><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><PP Messaging Bridging>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Service binding>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

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Relationship	Linked Element Type	Identifier	Compliance
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[REQ]

Identifier	REQ-14.01.04-TS-0901.0305
Requirement	Generic service instantiation shall be supported on the following interface binding. + Protocol stack: SOAP 1.2 over HTTPS POST over TCP. + MEPs: SRR-MEP, PSPUSH-MEP, PSPULL-MEP + Fault handling: the service shall be able to determine the content of the HTTP status code and HTTP reason phrase + Encoding. - Text encoding - Binary encoding: MTOM + Security: - Confidentiality: transport - Integrity: transport - Authenticity: transport mutual - Authorization: transport - Non-repudiation: none + Contract: - formalism of contract description: WSDL 1.1 and/or WSDL 2.0 - minimum: OASIS WS-N and structure of Topics - reference: OASIS WS-N, ISRM + Interoperability: WS-I Basic Profile 2.0
Title	Generic interface Binding. SOAP 1.2 over HTTPS POST over TCP.
Status	<Validated>
Rationale	Equivalent to REQ-14.01.04-TS-0901.0304 but for SOAP 1.2.All the security controls are provided at the transport level. Authenticity (or Authentication) at transport level has not to be confused with HTTP Basic and Digest Access Authentication that are not supported by this binding. This requirement covers NIST security controls SC-8 (1).
Category	<Interface><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Service binding>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

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Relationship	Linked Element Type	Identifier	Compliance
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Two identical bindings, one for a SOAP 1.1 based messaging protocol and one for a SOAP1.2 based messaging protocol.

The security controls are spread over multiple levels. The consumer authentication is performed at message level and uses a simple mechanism based on user and password. To avoid easy comprise of the credentials, confidentiality is required. The confidentiality is provided by the transport level.

[REQ]

Identifier	REQ-14.01.04-TS-0901.0306
Requirement	Generic service instantiation shall be supported on the following interface binding. + Protocol stack: SOAP 1.1 with WS-Security 1.1 and UsernameToken 1.1 over HTTPS POST over TCP. + MEPs: SRR-MEP, PSPUSH-MEP, PSPULL-MEP + Fault handling: the service shall be able to determine the content of the HTTP status code and HTTP reason phrase + Encoding. - Text encoding - Binary encoding: MTOM + Security: - Confidentiality: transport - Integrity: transport - Authenticity: transport server and message client - Authorization: transport and message - Non-repudiation: none + Contract: - formalism of contract description: WSDL 1.1 and optionally WSDL 2.0 both including WS-SecurityPolicy - minimum: OASIS WS-N and structure of Topics - reference: OASIS WS-N, ISRM + Interoperability: WS-I Basic Profile 1.2, WSI Basic Security Profile 1.1
Title	Generic interface Binding. SOAP 1.1 with WS-Security 1.1 and UsernameToken 1.1 over HTTPS POST over TCP.
Status	<Validated>
Rationale	Confidentiality and Integrity security controls are at transport level (HTTP over TLS). Authentication and Authorization security controls are at both message and transport level. The server is authenticated at transport level whereas the client is authenticated using message level techniques. Authenticity (or Authentication) at transport level has not to be confused with HTTP Basic and Digest Access Authentication that are not supported by this binding. This requirement covers NIST security controls SC-8 (1).
Category	<Interface><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>

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Selfstanding set	<Service binding>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

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[REQ]

Identifier	REQ-14.01.04-TS-0901.0760
Requirement	Generic service instantiation shall be supported on the following interface binding. + Protocol stack: SOAP 1.1 with WS-Security 1.1 and UsernameToken 1.1 over HTTPS POST over TCP. + MEPs: SRR-MEP + Fault handling: the service shall be able to determine the content of the HTTP status code and HTTP reason phrase + Encoding. - Text encoding - Binary encoding: MTOM + Security: - Confidentiality: transport - Integrity: transport - Authenticity: transport server and message client - Authorization: transport and message - Non-repudiation: none + Contract: - formalism of contract description: WSDL 1.1 and optionally WSDL 2.0 both including WS-SecurityPolicy - minimum: none - reference: ISRM + Interoperability: WS-I Basic Profile 1.2, WSI Basic Security Profile 1.1
Title	Generic interface Binding. SOAP 1.1 with WS-Security 1.1 and UsernameToken 1.1 over HTTPS POST over TCP.
Status	<In Progress>
Rationale	Confidentiality and Integrity security controls are at transport level (HTTP over TLS). Authentication and Authorization security controls are at both message and transport level. The server is authenticated at transport level whereas the client is authenticated using message level techniques. Authenticity (or Authentication) at transport level has not to be confused with HTTP Basic and Digest Access Authentication that are not supported by this binding. This requirement covers NIST security controls SC-8 (1).
Category	<Interface><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication

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	consumer><Subscription handler><Publication mediator>
Selfstanding set	<Service binding>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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[REQ]

Identifier	REQ-14.01.04-TS-0901.0308
Requirement	Generic service instantiation shall be supported on the following interface

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	binding. + Protocol stack: SOAP 1.2 with WS-Security 1.1 and UsernameToken 1.1 over HTTPS POST over TCP. + MEPs: SRR-MEP, PSPUSH-MEP, PSPULL-MEP + Fault handling: the service shall be able to determine the content of the HTTP status code and HTTP reason phrase + Encoding. - Text encoding - Binary encoding: MTOM + Security - Confidentiality: transport - Integrity: transport - Authenticity: transport server and message client - Authorization: transport - Non-repudiation: none + Contract: - formalism of contract description: WSDL 1.1 and optionally WSDL 2.0 both including WS-SecurityPolicy - minimum: OASIS WS-N and structure of Topics - reference: OASIS WS-N, ISRM + Interoperability: WS-I Basic Profile 2.0, WSI Basic Security Profile 1.1
Title	Generic interface Binding. SOAP 1.2 with WS-Security 1.1 and UsernameToken 1.1 over HTTPS POST over TCP.
Status	<Validated>
Rationale	Equivalent to REQ-14.01.04-TS-0901.0306 but for SOAP 1.2. This type of binding is already provided by FAA FNS-DNS. This requirement covers NIST security controls SC-8 (1).
Category	<Interface><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Service binding>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Project>	14.02.09	N/A
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<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
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[REQ]

Identifier	REQ-14.01.04-TS-0901.0765
Requirement	Generic service instantiation shall be supported on the following interface binding. + Protocol stack: SOAP 1.2 with WS-Security 1.1 and UsernameToken 1.1

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	over HTTPS POST over TCP. + MEPs: SRR-MEP + Fault handling: the service shall be able to determine the content of the HTTP status code and HTTP reason phrase + Encoding. - Text encoding - Binary encoding: MTOM + Security - Confidentiality: transport - Integrity: transport - Authenticity: transport server and message client - Authorization: transport - Non-repudiation: none + Contract: - formalism of contract description: WSDL 1.1 and optionally WSDL 2.0 both including WS-SecurityPolicy - minimum: None - reference: ISRM + Interoperability: WS-I Basic Profile 2.0, WSI Basic Security Profile 1.1
Title	Generic interface Binding. SOAP 1.2 with WS-Security 1.1 and UsernameToken 1.1 over HTTPS POST over TCP.
Status	<In Progress>
Rationale	Equivalent to REQ-14.01.04-TS-0901.0760 but for SOAP 1.2. This type of binding is already provided by FAA FNS-DNS This requirement covers NIST security controls SC-8 (1)
Category	<Interface><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer>
Selfstanding set	<Service binding>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0101	N/A
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Two identical bindings, one for a SOAP 1.1 based messaging protocol and one for a SOAP1.2 based messaging protocol.

These bindings place the security controls mostly at message level. The consumer authentication is performed using WS-Security X.509 Certificate Token Profile 1.0 or WS-Security X.509 Certificate Token Profile 1.1. This method of providing credentials does not require confidentiality. If confidentiality is required, it is to be provided by the communications network.

[REQ]

Identifier	REQ-14.01.04-TS-0901.0307
Requirement	Generic service instantiation shall be supported on the following interface binding. + Protocol stack: SOAP 1.1 with WS-Security 1.1 and WSSE X.509 Certificate Token Profile 1.0 or WSSE X.509 Certificate Token Profile 1.1 over HTTP POST over TCP. + MEPs: SRR-MEP, PSPUSH-MEP, PSPULL-MEP + Fault handling: the service shall be able to determine the content of the

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	HTTP status code and HTTP reason phrase + Encoding. - Text encoding - Binary encoding: MTOM + Security: - Confidentiality: optionally network - Integrity: message - Authenticity: message - Authorization: message mutual - Non-repudiation: message + Contract: - formalism of contract description: WSDL 1.1 and optionally WSDL 2.0 both including WS-SecurityPolicy - minimum: OASIS WS-N and structure of Topics - reference: OASIS WS-N, ISRM + Interoperability: WS-I Basic Profile 1.2, WSI Basic Security Profile 1.1
Title	Generic interface Binding. SOAP 1.1 with WS-Security 1.1 and WSSE X.509 Certificate Token Profile 1.0 or WSSE X.509 Certificate Token Profile 1.1 over HTTP POST over TCP.
Status	<Validated>
Rationale	This type of binding is already provided by EAD B2B. Security controls are mainly based on message level. HTTP Basic and Digest Access Authentication are transport level security techniques and they are not supported by this binding. This requirement covers NIST security controls SC-8 (1).
Category	<Interface><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Service binding>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
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[REQ]

Identifier	REQ-14.01.04-TS-0901.0770
Requirement	Generic service instantiation shall be supported on the following interface binding. + Protocol stack: SOAP 1.1 with WS-Security 1.1 and WSSE X.509 Certificate Token Profile 1.0 or WSSE X.509 Certificate Token Profile 1.1 over HTTP POST over TCP. + MEPs: SRR-MEP + Fault handling: the service shall be able to determine the content of the HTTP status code and HTTP reason phrase

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	+ Encoding. - Text encoding - Binary encoding: MTOM + Security: - Confidentiality: optionally network - Integrity: message - Authenticity: message - Authorization: message mutual - Non-repudiation: message + Contract: - formalism of contract description: WSDL 1.1 and optionally WSDL 2.0 both including WS-SecurityPolicy - minimum: None - reference: ISRM + Interoperability: WS-I Basic Profile 1.2, WSI Basic Security Profile 1.1
Title	Generic interface Binding. SOAP 1.1 with WS-Security 1.1 and WSSE X.509 Certificate Token Profile 1.0 or WSSE X.509 Certificate Token Profile 1.1 over HTTP POST over TCP.
Status	<In Progress>
Rationale	This type of binding is already provided by EAD B2B. Security controls are mainly based on message level. HTTP Basic and Digest Access Authentication are transport level security techniques and they are not supported by this binding. This requirement covers NIST security controls SC-8 (1).
Category	<Interface><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer>
Selfstanding set	<Service binding>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

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<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0137	N/A
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[REQ]

Identifier	REQ-14.01.04-TS-0901.0309
Requirement	Generic service instantiation shall be supported on the following interface binding. + Protocol stack: SOAP 1.2 with WS-Security 1.1 and WSSE X.509 Certificate Token Profile 1.0 or WSSE X.509 Certificate Token Profile 1.1 over HTTP POST over TCP. + MEPs: SRR-MEP, PSPUSH-MEP, PSPULL-MEP + Fault handling: the service shall be able to determine the content of the HTTP status code and HTTP reason phrase + Encoding. - Text encoding - Binary encoding: MTOM + Security - Confidentiality: optionally network - Integrity: message - Authenticity: message mutual - Authorization: message - Non-repudiation: message + Contract: - formalism of contract description: WSDL 1.1 and optionally WSDL 2.0 both including WS-SecurityPolicy

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	- minimum: OASIS WS-N and structure of Topics - reference: OASIS WS-N, ISRM + Interoperability: WS-I Basic Profile 2.0, WSI Basic Security Profile 1.1
Title	Generic interface Binding. SOAP 1.2 with WSSE X.509 Certificate Token Profile 1.0 or WS-Security 1.1 and WSSE X.509 Certificate Token Profile 1.1 over HTTP POST over TCP.
Status	<Validated>
Rationale	Equivalent to REQ-14.01.04-TS-0901.0307 but for SOAP 1.2.This requirement covers NIST security controls SC-8 (1)
Category	<Interface><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Service binding>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

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<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
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[REQ]

Identifier	REQ-14.01.04-TS-0901.0775
Requirement	Generic service instantiation shall be supported on the following interface binding. + Protocol stack: SOAP 1.2 with WS-Security 1.1 and WSSE X.509 Certificate Token Profile 1.0 or WSSE X.509 Certificate Token Profile 1.1 over HTTP POST over TCP. + MEPs: SRR-MEP + Fault handling: the service shall be able to determine the content of the HTTP status code and HTTP reason phrase + Encoding. - Text encoding - Binary encoding: MTOM + Security - Confidentiality: optionally network - Integrity: message - Authenticity: message mutual - Authorization: message - Non-repudiation: message + Contract: - formalism of contract description: WSDL 1.1 and optionally WSDL 2.0 both including WS-SecurityPolicy - minimum: None - reference: ISRM + Interoperability: WS-I Basic Profile 2.0, WSI Basic Security Profile 1.1

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Title	Generic interface Binding. SOAP 1.2 with WSSE X.509 Certificate Token Profile 1.0 or WS-Security 1.1 and WSSE X.509 Certificate Token Profile 1.1 over HTTP POST over TCP.
Status	<In Progress>
Rationale	Equivalent to REQ-14.01.04-TS-0901.0770 but for SOAP 1.2. This requirement covers NIST security controls SC-8 (1)
Category	<Interface><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer>
Selfstanding set	<Service binding>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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Two identical bindings, one for a SOAP 1.1 based messaging protocol and one for a SOAP1.2 based messaging protocol.

These bindings provide for brokered identity management and place the security controls mostly at message level. The consumer authentication is performed using WS-Security X.509 Certificate Token Profile 1.0 or WS-Security SAML Token Profile 1.1. This method of providing credentials does not require confidentiality. If confidentiality is required, it is to be provided by the communications network.

This binding is targeted at providing advanced security features.

[REQ]

Identifier	REQ-14.01.04-TS-0901.0317
Requirement	Generic service instantiation shall be supported on the following interface binding. + Protocol stack: SOAP 1.1 with WS-Security 1.1 and WSSE X.509 Certificate Token Profile 1.1 and/or WSSE SAML Token Profile 1.1 combined with any of combination of WS-Trust 1.4, WS-Federation 1.2 over HTTP POST over TCP. + MEPs: SRR-MEP, PSPUSH-MEP, PSPULL-MEP + Fault handling: the service shall be able to determine the content of the HTTP status code and HTTP reason phrase + Encoding. - Text encoding - Binary encoding: MTOM + Security - Confidentiality: optionally network - Integrity: message - Authenticity: message mutual - Authorization: message - Non-repudiation: message + Contract: - formalism of contract description: WSDL 1.1 and optionally WSDL 2.0 both including WS-SecurityPolicy - minimum: OASIS WS-N and structure of Topics - reference: OASIS WS-N, ISRM + Interoperability: WS-I Basic Profile 1.2, WSI- Basic Security Profile 1.1
Title	Generic interface Binding. SOAP 1.1 with WS-Security 1.1, WS-Trust 1.4, WS-Federation 1.2, and WSSE X.509 Certificate Token Profile 1.1 and/or WSSE SAML Token Profile 1.1 over HTTP POST over TCP.
Status	<Validated>
Rationale	This binding provides advanced security features and is meant to be included in the "Security+" plus part of the YP. HTTP Basic and Digest Access Authentication are transport level security techniques and they are not

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	supported by this binding. This requirement covers NIST security control IA-4 (6).
Category	<Interface><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Service binding>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0101	N/A
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[REQ]

Identifier	REQ-14.01.04-TS-0901.0780
Requirement	Generic service instantiation shall be supported on the following interface binding. + Protocol stack: SOAP 1.1 with WS-Security 1.1 and WSSE X.509 Certificate Token Profile 1.1 and/or WSSE SAML Token Profile 1.1 combined with any of combination of WS-Trust 1.4, WS-Federation 1.2 over HTTP POST over TCP. + MEPs: SRR-MEP + Fault handling: the service shall be able to determine the content of the HTTP status code and HTTP reason phrase + Encoding. - Text encoding - Binary encoding: MTOM + Security - Confidentiality: optionally network - Integrity: message - Authenticity: message mutual - Authorization: message - Non-repudiation: message + Contract: - formalism of contract description: WSDL 1.1 and optionally WSDL 2.0 both including WS-SecurityPolicy - minimum: None - reference: ISRM + Interoperability: WS-I Basic Profile 1.2, WSI- Basic Security Profile 1.1
Title	Generic interface Binding. SOAP 1.1 with WS-Security 1.1, WS-Trust 1.4, WS-Federation 1.2, and WSSE X.509 Certificate Token Profile 1.1 and/or WSSE SAML Token Profile 1.1 over HTTP POST over TCP.
Status	<In Progress>
Rationale	This binding provides advanced security features and is meant to be included in the "Security+" plus part of the YP. HTTP Basic and Digest Access Authentication are transport level security techniques and they are not

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	supported by this binding. This requirement covers NIST security control IA-4 (6).
Category	<Interface><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer>
Selfstanding set	<Service binding>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
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<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
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[REQ]

Identifier	REQ-14.01.04-TS-0901.0318
Requirement	Generic service instantiation shall be supported on the following interface binding. + Protocol stack: SOAP 1.2 with WS-Security 1.1 and WSSE SAML Token Profile 1.1 combined and/or WSSE SAML Token Profile 1.1 with any of WS-Trust 1.4, WS-Federation 1.2 over HTTP POST over TCP. + MEPs: SRR-MEP, PSPUSH-MEP, PSPULL-MEP + Fault handling: the service shall be able to determine the content of the HTTP status code and HTTP reason phrase + Encoding. - Text encoding - Binary encoding: MTOM + Security - Confidentiality: optionally network - Integrity: message - Authenticity: message mutual - Authorization: message - Non-repudiation: message + Contract: - formalism of contract description: WSDL 1.1 and optionally WSDL 2.0 both including WS-SecurityPolicy - minimum: OASIS WS-N and structure of Topics - reference: OASIS WS-N, ISRM + Interoperability: WS-I Basic Profile 2.0, WSI- Basic Security Profile 1.1
Title	Generic interface Binding. SOAP 1.2 with WS-Security 1.1, WS-Trust 1.4, WS-Federation 1.2, and WSSE X.509 Certificate Token Profile 1.1 and/or WSSE SAML Token Profile 1.1 over HTTP POST over TCP.
Status	<Validated>
Rationale	Equivalent to REQ-14.01.04-TS-0901.0317 but for SAML Token Profile 1.1. This requirement covers NIST security control IA-4 (6).
Category	<Interface><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Service binding>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

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Relationship	Linked Element Type	Identifier	Compliance
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<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
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[REQ]

Identifier	REQ-14.01.04-TS-0901.0785
Requirement	Generic service instantiation shall be supported on the following interface binding. + Protocol stack: SOAP 1.2 with WS-Security 1.1 and WSSE SAML Token Profile 1.1 combined and/or WSSE SAML Token Profile 1.1 with any of WS-Trust 1.4, WS-Federation 1.2 over HTTP POST over TCP. + MEPs: SRR-MEP + Fault handling: the service shall be able to determine the content of the HTTP status code and HTTP reason phrase + Encoding. - Text encoding - Binary encoding: MTOM + Security - Confidentiality: optionally network - Integrity: message - Authenticity: message mutual - Authorization: message - Non-repudiation: message + Contract: - formalism of contract description: WSDL 1.1 and optionally WSDL 2.0 both including WS-SecurityPolicy - minimum: None - reference: ISRM + Interoperability: WS-I Basic Profile 2.0, WSI- Basic Security Profile 1.1
Title	Generic interface Binding. SOAP 1.2 with WS-Security 1.1, WS-Trust 1.4, WS-Federation 1.2, and WSSE X.509 Certificate Token Profile 1.1 and/or WSSE SAML Token Profile 1.1 over HTTP POST over TCP.
Status	<In Progress>
Rationale	Equivalent to REQ-14.01.04-TS-0901.0780 but for SAML Token Profile 1.1. This requirement covers NIST security control IA-4 (6).
Category	<Interface><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer>
Selfstanding set	<Service binding>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

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Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Project>	14.02.09	N/A
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[REQ]

Identifier	REQ-14.01.04-TS-0901.0751
Requirement	Generic service instantiation shall be supported on the following interface binding. + Protocol stack: AMQP over TLS (amqps form only) over TCP. + MEPs: AFF-MEP(native), SRR-MEP, ARR-MEP, PSPULL-MEP, PSPUSH-

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	MEP. + Fault handling: the service shall be able to determine the content of the AMQP types “error” and “transaction-error” + Encoding: - for both content-encoding and content-type: IANA registered MIME Media Types, protocol specific extensions. + Security - Confidentiality: transport via TLS (the amqps form only) - Integrity: transport - Authenticity : transport mutual via TLS (the amqps form only) and/or SASL. SASL mechanisms are limited to ANONYMOUS and PLAIN - Authorization: transport via TLS (the amqps form only) and/or SASL - Non-repudiation: none + Contract: - formalism of contract description: the possible values of the content-type and content-encoding shall be explicitly enumerated. In case the content-type references the MIME type application/xml or text/xml, additionally provision of all applicable XSDs is required. The use as well as non-use of element from header, delivery-annotations, message-annotations, properties, application-properties and footer shall be described. The addressing format shall be described. The filter format shall be described. - minimum: not applicable - reference: ISRM
Title	Generic interface Binding. AMQP over TLS (amqps) over TCP.
Status	<Validated>
Rationale	This binding allows to cover the domain of "asynchronous messaging". The binding natively enables AFF-MEP. Additional MEPs (SRR-MEP, ARR-MEP, PSPULL-MEP, PSPUSH-MEP) can be realized by adding proper logics on top of the native MEP(s). This binding allows all IANA registered MIME types. For instance, when it is necessary due to the size of the messages exchanged over this binding, it is possible to use compression techniques including GZIP (application/gzip MIME type) and EXI (application/exi MIME type). In such case the SWIM-TI does not provide the compression/decompression functionality but leaves that to the service.
Category	<Interface>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Publisher><Publication consumer><Publication mediator>
Selfstanding set	<Service binding>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A

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<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
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<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0400	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0410	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0420	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0430	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0621	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0622	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0631	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0632	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0720	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0730	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0302	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0303	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0304	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0300	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0301	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0830	<Full>
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0006.0001	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0006.0010	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0755	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0002.0600	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0002.0630	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0002.0031	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0270	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0154	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0901.0752
Requirement	Generic service instantiation shall be supported on the following interface binding. + Protocol stack: AMQP over TLS (amqps form only) over TCP. + MEPs: AFF-MEP(native), FDRR-MEP(native), SRR-MEP, ARR-MEP, PSPULL-MEP, PSPUSH-MEP. + Fault handling: the service shall be able to determine the content of the AMQP types “error” and “transaction-error” + Encoding: - for both content-encoding and content-type: IANA registered MIME Media Types, protocol specific extensions. + Security - Confidentiality: transport via TLS (the amqps form only) - Integrity: transport - Authenticity : transport mutual via TLS (the amqps form only) and/or SASL. SASL mechanisms are limited to ANONYMOUS and PLAIN. - Authorization: transport via TLS (the amqps form only) and/or SASL - Non-repudiation: none

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	+ Contract: - formalism of contract description: the possible values of the content-type and content-encoding shall be explicitly enumerated. In case the content-type references the MIME type application/xml or text/xml, additionally provision of all applicable XSDs is required. The use as well as non-use of element from header, delivery-annotations, message-annotations, properties, application-properties and footer shall be described. The addressing format shall be described. The filter format shall be described. - minimum: not applicable - reference: ISRM
Title	Generic interface Binding. AMQP over TLS (amqps) over TCP.
Status	<In Progress>
Rationale	This binding allows to cover the domain of "asynchronous messaging". The binding natively enables AFF-MEP and FDRR-MEP. Additional MEPs (SRR-MEP, ARR-MEP, PSPULL-MEP, PSPUSH-MEP) can be realized by adding proper logics on top of the native MEP(s). This binding allows all IANA registered MIME types. For instance, when it is necessary due to the size of the messages exchanged over this binding, it is possible to use compression techniques including GZIP (application/gzip MIME type) and EXI (application/exi MIME type). In such case the SWIM-TI does not provide the compression/decompression functionality but leaves that to the service.
Category	<Interface>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Messaging+>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Publisher><Publication consumer><Publication mediator>
Selfstanding set	<Service binding>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0350	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0400	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0410	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0420	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0430	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0621	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0622	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0631	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0632	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0720	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0730	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0302	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0303	<Full>

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<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0304	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0300	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0301	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0830	<Full>
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0006.0001	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0006.0010	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0755	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0002.0600	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0002.0630	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0002.0031	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0270	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0154	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0901.0755
Requirement	The authentication shall be supported for following combinations: - SSL/TLS server only and SASL PLAIN, - SSL/TLS mutual and SASL ANONYMOUS, - SSL/TLS mutual and SASL PLAIN.
Title	Allowed authentication options for AMQP v1.0
Status	<In Progress>
Rationale	AMQP v1.0 supports 3 distinct security controls. The SSL/TLS option linked with protocol id 2 must not be used as there is limited support for this option. Only SASL ANONYMOUS and SASL PLAIN authentication mechanisms must be used as there is limited support for other SASL mechanisms. SASL ANONYMOUS can be used if the mutual authentication is performed by the SSL/TLS layer. SASL PLAIN must be accompanied by encryption provided via SSL/TLS
Category	<Interface>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Publisher><Publication consumer><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<APPLIES_TO>	<ATMS Requirement>	REQ-14.01.04-TS-0901.0751	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>

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<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

In the remaining part of this section, additional technical configuration requirements concerning the Service Bindings are provided.

[REQ]

Identifier	REQ-14.01.04-TS-0901.0845
Requirement	In order to enable HTTP/1.1 Content Compression the following headers shall be supported. - from the server to the client: Content-Encoding: {deflate | gzip | x-exi} - from the client to the server: Accept-Encoding: {gzip | deflate |x-exi}. A Consumer shall be able to deal with a Provider that does not recognize the request to apply compression.
Title	HTTP/1.1 Content Compression
Status	<In Progress>
Rationale	HTTP compression performs on the fly compression. The compression can only be requested by the client. The server can ignore the request by the client and return non-compressed data.
Category	<Interface>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0901.0402
Requirement	HTTP/1.1 Transfer-Encoding chunked shall be supported.

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Title	HTTP/1.1 Transfer-Encoding chunked
Status	<Validated>
Rationale	The sender of a message may not know in advance the length of the message that will be sent. The HTTP/1.1 protocol provides for this mechanism.
Category	<Interface>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0901.0404
Requirement	A holder of key shall digitally sign a message when a X.509 Token or SAML Token is used for message level authentication.
Title	Holder of key must sign message to authenticate at message level
Status	<Validated>
Rationale	In case of message level authentication, a X.509 Token or SAML Token can be sent with the message. In addition to sending the Token, the message must be signed with the key that must remain secret or private and that is known by the sender. This requirement covers NIST security control IA-8.
Category	<Interface><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A

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<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0901.0390
Requirement	The bindings based on SOAP shall be composable with WS-ReliableMessaging.
Title	WS-ReliableMessaging applicability
Status	<Validated>
Rationale	WS-ReliableMessaging allows reliable transfer of messages between nodes in the presence of software component, system, or network failures.
Category	<Interface>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0181	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0182	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0901.0406
Requirement	The bindings based on SOAP shall be composable with WS-SecureConversation.
Title	WS-SecureConversation applicability
Status	<In Progress>
Rationale	Establishment of a Security Session at message level through WS-SecureConversation may reduce the performance overhead of message level security in case many messages are exchanged securely.Establishment of a Security Session at message level through WS-SecureConversation allows independence of equivalent transport level functionality.This requirement covers NIST security controls SC-23
Category	<Interface><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+>
Domain of interest	<ICD>
Point of view	<ATM service><SWIM-TI provider>

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Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	MSG	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0139	N/A
<SATISFIES>	<Enabler>	GGSWIM-51c	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

3.2.9.2 Internal Service Interface Bindings

[IREQ]

Identifier	REQ-14.01.04-TS-0901.0327
Requirement	UDDI services shall be instantiated using the following binding. SOAP 1.1 over HTTP POST over TCP for UDDI. + MEPs: SRR-MEP + Fault handling: the service shall be able to determine the content of the HTTP status code and HTTP reason phrase + Encoding. - restricted encoding as defined per standard + Security: - Confidentiality: none - Integrity: none - Authenticity: none - Authorization: none - Non-repudiation: none + Contract: - formalism of contract description: WSDL 1.1 - minimum: not applicable - reference: UDDIv3 . Interoperability: WS-I Basic Profile 1.2
Title	Interface Binding. SOAP 1.1 over HTTP POST over TCP for UDDI.
Status	<In Progress>
Rationale	A series of UDDI related operations do not necessarily need security.
Category	<Interface>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider>

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Roles	<Shareable function consumer>
Selfstanding set	<Internal service binding>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	REG	N/A
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0350	<Full>
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0101	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0115	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0118	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0121	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0125	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0129	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0006.0001	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0006.0010	N/A
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<SATISFIES>	<Enabler>	SWIM-SUPT-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-01b	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0901.0328
Requirement	UDDI services shall be instantiated using the following binding. SOAP 1.1 over HTTPS POST over TCP for UDDI. + MEPs: SRR-MEP + Fault handling: the service shall be able to determine the content of the HTTP status code and HTTP reason phrase + Encoding. - restricted encoding as defined per standard + Security: - Confidentiality: transport - Integrity: transport - Authenticity: transport mutual - Authorization: transport - Non-repudiation: none + Contract: - formalism of contract description: WSDL 1.1 - minimum: not applicable - reference: UDDIv3 + Interoperability: WS-I Basic Profile 1.2
Title	Interface Binding. SOAP 1.1 over HTTPS POST over TCP for UDDI.
Status	<In Progress>
Rationale	A series of UDDI related operations do at least need authentication and authorization and can take advantage of other security controls. Security controls are all at transport (HTTP over TLS) level. Authenticity (or Authentication) at transport level has not to be confused with HTTP Basic and

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	Digest Access Authentication that are not supported by this binding. This requirement covers NIST security controls SC-8 (1)
Category	<Interface><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><PP Core>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider>
Roles	<Shareable function consumer>
Selfstanding set	<Internal service binding>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	REG	N/A
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0350	<Full>
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0101	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0111	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0112	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0113	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0114	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0115	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0116	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0118	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0121	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0125	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0129	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0006.0001	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0006.0010	N/A
<SATISFIES>	<Enabler>	GGSWIM-58c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-01b	<Full>

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3.3 Security Functional and non-Functional Requirements

In this chapter functional and non-functional requirements concerning the SWIM-TI Security are provided. These requirements have been specified according to SWIM-TI Technical Use Case and latest TAD.

3.3.1 Capabilities

This section provides the functional requirements of the SWIM-TI Security derived from TAD functional and technical views.

3.3.1.1 Confidentiality Ensuring Requirements

This section specifies the SWIM-TI Security functional requirements concerning the Confidentiality Ensuring as described in the TAD. These requirements concern confidentiality at message level and transport levels.

[REQ]

Identifier	REQ-14.01.04-TS-0002.0200
Requirement	The SWIM-TI Security shall provide support for confidentiality ensuring of information exchanged through the SWIM-TI.
Title	SWIM-TI Confidentiality Ensuring
Status	<Validated>
Rationale	The SWIM Technical Infrastructure is used to enable the exchanging of several types of information among several types of geographically distributed systems interconnected at network level. Taking into account the overall context and the sensitivity of the exchanged information it is required to guarantee several security properties including confidentiality. This requirement covers NIST security controls SC8 and SC-11.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>

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<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0027
Requirement	The SWIM-TI Security shall provide support for encryption and decryption techniques.
Title	SWIM Technical Infrastructure encryption and decryption support
Status	<Validated>
Rationale	The SWIM Technical Infrastructure is used to enable the exchanging of several types of information among several types of geographically distributed systems interconnected at network level. Taking into account the overall context and the sensitivity of the exchanged data it is required to guarantee several security properties such as (but not limited to) the information integrity, authorization and confidentiality. Encryption and decryption are techniques enabling the expected security properties. This requirement covers NIST security controls SC-8 (1) and SC-11.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<ATMS Requirement>	P14.02.09-SWIM-SEC-2	<Full>
<SATISFIES>	<ATMS Requirement>	P14.02.02-REQ_049	<Full>
<SATISFIES>	<ATMS Requirement>	P14.02.02-REQ_050	<Full>
<SATISFIES>	<ATMS Requirement>	09.19-D03-250	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.02	N/A
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>

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<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0029
Requirement	The SWIM-TI Security shall provide support for the use of encryption and decryption techniques at least at one of the following levels: + Message. + Transport.
Title	Support of Encryption and Decryption at several levels
Status	<Validated>
Rationale	The SWIM Technical Infrastructure is used to enable the exchanging of several types of information among several types of geographically distributed systems interconnected through Communications infrastructure. Taking into account the overall context and the sensitivity of the exchanged data it is required to guarantee several security properties such as (but not limited to) the information integrity, authorization and confidentiality. Encryption and decryption are techniques enabling the expected security properties. These techniques can be applied at different levels: Message level: these kinds of techniques are used to encrypt/decrypt the content (or a part of) of the message. For instance, in a SOAP based communication, only the SOAP body content (or part of) is encrypted/decrypted. Transport level: these kinds of techniques are used to encrypt/decrypt the complete transport communication. For instance, in a SOAP/HTTPS based communication the whole SOAP is encrypted/decrypted. It is important to notice that SWIM-TI Security provides only message and transport levels security whereas it may also rely on network level security as provided by the Communication Infrastructure. Network level: for instance IPSec can be used to be used to provide confidentiality, integrity and authenticity (mutual)This requirement covers NIST security controls SC-8 (1) and SC-11.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.02-REQ_049	<Full>
<SATISFIES>	<ATMS Requirement>	P14.02.02-REQ_050	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>

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<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0023
Requirement	The SWIM-TI Security shall be able to provide, for a given information exchange, support for confidentiality ensuring: + Only at message level. + Only at transport level. + At both message and transport levels (two approaches used in combination).
Title	SWIM-TI Confidentiality Ensuring at Transport and Message levels
Status	<Validated>
Rationale	SWIM-TI enables information exchange mainly according to the request-response and publish-subscribe MEPs. According to each MEP and taking into account information exchange security requirements, it could be required to apply message level or transport level encryption/decryption. The two approaches have advantages and disadvantages and therefore they are applicable to specific cases. Channel Protection or transport level security, is applicable to point-to-point communications for which no specific intermediaries are foreseen (examples of intermediaries are data enrichment (METADATA) and service virtualization implemented through Service Agent SOA design pattern. Message protection or message level security, is applicable to point-to-point (with or without intermediaries), one-to-many or many-to-many communications. This requirement covers NIST security control AC-17 (2), SC-8 (1) and SC-11.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<SATISFIES>	<ATMS Requirement>	P14.02.09-SWIM-SEC-2	<Full>
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>

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<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0024
Requirement	The SWIM-TI Confidentiality Ensuring shall provide support for XML Encryption based message level confidentiality.
Title	XML Encryption based SWIM-TI message level Confidentiality Ensuring
Status	<Validated>
Rationale	XML Encryption is a widely adopted W3C specification that can be used to encrypt any kind of data within an XML document. SWIM-TI use XML Encryption to ensure message level confidentiality. To described that the choice is specified within the confidentiality policy. There is a requirement describing the structure of such policy. This requirement covers NIST security controls SC-8 (1)
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><PP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<APPLIES TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
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<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0025
Requirement	The SWIM-TI Security shall use Symmetric, Asymmetric and Hybrid encryption schemas to allow confidentiality ensuring.

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Title	Encryption Schemas for SWIM-TI Confidentiality Ensuring
Status	<Validated>
Rationale	Symmetric, Asymmetric and Hybrid encryption schemas are widely adopted and they represent more appropriate solutions supporting Confidentiality Ensuring in different application contexts. This requirement covers NIST security controls SC-8, SC-13, SC-11.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0026
Requirement	The SWIM-TI Security shall use Triple DES, AES-128 and AES-256 encryption algorithms to allow confidentiality ensuring.
Title	Encryption Algorithms for SWIM-TI Confidentiality Ensuring
Status	<Validated>
Rationale	Triple DES, AES-128 and AES-256 encryption algorithms are widely adopted and they represent more appropriate solutions supporting Confidentiality Ensuring. This requirement covers NIST security controls SC-13 and SC-8 (1).
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>

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Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
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<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0222
Requirement	The SWIM-TI Confidentiality Ensuring shall allow to protect information exchanges by enforcing Confidentiality Ensuring Policy.
Title	Policy Based SWIM-TI Confidentiality Ensuring
Status	<Validated>
Rationale	The need for Confidentiality Ensuring or not as well as the type of confidentiality ensuring can be determined according to a Confidentiality Ensuring Policy. This requirement covers NIST security controls SC-8.
Category	<Design><Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A

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<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
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<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0230
Requirement	The SWIM-TI Confidentiality Ensuring Policy shall include the following information: - If a given information exchange requires confidentiality assurance. - Which parts of such information have to be encrypted (applicable only to message level security). - Which encryption schema has to be used (symmetric, asymmetric, hybrid). - Which encryption algorithm has to be used. - If it is required to use a multipurpose key or a dedicated one. - Any other additional information about producer and recipients needed to support the Confidentiality Ensuring mechanisms.
Title	SWIM-TI Confidentiality Ensuring Policy Structure
Status	<Validated>
Rationale	This requirement allows a flexible use of the Confidentiality Ensuring that will perform its tasks according to the information defined in the policy: - It allows to specify if the encryption/decryption are required for message level encryption. - For such information it could be useful to encrypt only subparts of the messages (this improve the performance) whereas for other information it is required to encrypt the whole message. - It allows to specify which encryption schema has to be used allowing to choose for each information exchange the solution that represents the right trade-off between performance and protection (asymmetric encryption requires more processing resources than symmetric encryption and the two approaches can be combined having an hybrid solution - e.g. symmetric schema is used to encrypt a message (or its parts) and then asymmetrically encrypt the shared key reducing the size of the data that is asymmetrically encrypted). - It allows to specify for a given information exchange the encryption algorithm to be used. - It allows to specify which key has to be used and in particular if it is a multipurpose or a dedicated one. - It allows to provide any other additional information needed to enforce the confidentiality. This requirement covers NIST security controls SC-1 a.2.
Category	<Design><Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>

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Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0600
Requirement	The SWIM-TI Confidentiality Ensuring shall use cryptographic keys managed by the PKI.
Title	SWIM-TI Confidentiality Ensuring cryptographic keys
Status	<Validated>
Rationale	This requirement clarify where are managed (stored, created, etc.) cryptographic keys used to encrypt/decrypt data. This requirement covers NIST security controls SC-12.
Category	<Functional><Interface><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Function/Behaviour><ICD>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
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<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A

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<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0612
Requirement	The SWIM-TI Audit shall allow to audit encryption and decryption attempts according to the specific Audit policy.
Title	Policy Based Encryption and Decryption attempts auditing
Status	<In Progress>
Rationale	Encryption and decryption attempts (successfully or not performed) can be audited or not according to a specific Audit policy. This requirement covers NIST security control AU-2 a.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+><BP Core><PP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Identity Management provider><Identity Management consumer><Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
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3.3.1.2 Information Origin Authentication Requirements

In this section are specified the SWIM-TI Security requirements concerning Information Origin Authentication as described in the TAD. This mainly consists of requirements concerning Information Origin Authentication Service at both message level and transport level.

The following requirements concern SWIM-TI Security at a whole: they specify the cryptographic techniques and standards adopted and the two levels at which the confidentiality ensuring is applied.

[REQ]

Identifier	REQ-14.01.04-TS-0002.0240
Requirement	The SWIM-TI Security shall provide support to ensure information origin authentication (integrity and authenticity) of information exchanged through the SWIM-TI.
Title	SWIM-TI Information Origin Authentication
Status	<Validated>
Rationale	The SWIM Technical Infrastructure is used to enable the exchanging of several types of information among several types of geographically distributed systems interconnected at network level. Taking into account the overall context and the sensitivity of the exchanged information it is required to guarantee several security properties including integrity (the information has not been altered while in transit) and authenticity (the information originated from the expected sender).This requirement covers NIST security controls IA-5 a and IA-5 b and SC-20 a and SC-20 b.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Project>	14.02.01	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
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<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
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[REQ]

Identifier	REQ-14.01.04-TS-0002.0055
Requirement	The SWIM-TI Security shall be able to provide, for a given information exchange, support for origin authentication: + Only at message level. + Only at transport level. + Both at message and transport levels (two approaches used in combination).
Title	SWIM-TI Information Origin Authentication at Transport and Message levels
Status	<Validated>
Rationale	SWIM-TI enables information exchange mainly according to the request-response and publish-subscribe MEPs. According to each MEP and taking into account information exchange security requirements, it could be required to apply message level or transport level signing. Two approaches have advantages and disadvantages and therefore they are applicable to specific cases. Channel Protection or transport level security, is applicable to point-to-point communications for which no specific intermediaries are foreseen (examples of intermediaries are data enrichment (METADATA) and service virtualization implemented through Service Agent SOA design pattern. Message protection or message level security, is applicable to point-to-point (with or without intermediaries), one-to-many or many-to-many communications. This requirement covers NIST security control IA-8.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
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<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
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The following set of requirements aim at specifying the Information Origin Authentication as it is described in the TAD.

[REQ]

Identifier	REQ-14.01.04-TS-0002.0251
Requirement	The SWIM-TI Information Origin Authentication shall provide support for use of XML Signature to apply digital signature at message level.
Title	XML signature based SWIM-TI message level Information Origin Authentication Ensuring
Status	<Validated>
Rationale	Information signing techniques are widely adopted and they are more appropriate solutions supporting information integrity and authenticity. This requirement covers NIST security controls IA-5 a, IA-5 b and IA-8.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><PP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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[REQ]

Identifier	REQ-14.01.04-TS-0002.0252
Requirement	The SWIM-TI Information Origin Authentication shall use Symmetric, Asymmetric and Hybrid digital signature schema.
Title	SWIM-TI Information Origin Authentication digital signature schema
Status	<Validated>

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Rationale	Information signing techniques are widely adopted and they are more appropriate solutions supporting information integrity and authenticity. This requirement covers NIST security controls IA-2, IA-8, IA-9 and AC-4.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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[REQ]

Identifier	REQ-14.01.04-TS-0002.0253
Requirement	The SWIM-TI Information Origin Authentication shall provide SHA2 digest algorithm to perform message digest.
Title	SWIM-TI Information Origin Authentication digest algorithm
Status	<Validated>
Rationale	Information signing techniques are widely adopted and they are more appropriate solutions supporting information integrity and authenticity. This requirement covers NIST security controls IA-2, IA-8, IA-9 and AC-4.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>

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Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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[REQ]

Identifier	REQ-14.01.04-TS-0002.0254
Requirement	The SWIM-TI Information Origin Authentication shall provide HMAC as Message Authentication Codes algorithm.
Title	SWIM-TI Information Origin Authentication message Authentication Codes algorithm
Status	<Validated>
Rationale	Information signing techniques are widely adopted and they are more appropriate solutions supporting information integrity and authenticity. This requirement covers NIST security controls IA-2, IA-8, IA-9 and AC-4.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
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<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>

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<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
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[REQ]

Identifier	REQ-14.01.04-TS-0002.0255
Requirement	The SWIM-TI Information Origin Authentication shall provide DSA-SHA2 and RSA-SHA2 as signature algorithms.
Title	SWIM-TI Information Origin Authentication signature algorithms
Status	<Validated>
Rationale	Information signing techniques are widely adopted and they are more appropriate solutions supporting information integrity and authenticity. This requirement covers NIST security controls IA-2, IA-8, IA-9 and AC-4.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Project>	14.02.09	N/A
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[REQ]

Identifier	REQ-14.01.04-TS-0002.0260
Requirement	The SWIM-TI Information Origin Authentication shall provide support for message level information origin authentication.
Title	SWIM-TI Information Origin Authentication purpose
Status	<Validated>
Rationale	The SWIM Technical Infrastructure shall be used to enable the exchanging of several types of information among several types of geographically distributed systems interconnected at network level using the PENS or Internet. Taking into account the overall context it is required to avoid sensitive data tampering (ATM specific data and SWIM-TI internal ones).Information Origin Authentication is one of the services provided by the SWIM-TI Security aiming at ensuring confidentiality (integrity and authenticity) at message level. This requirement covers NIST security controls IA-2, IA-8 and IA-9.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
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<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0271
Requirement	The SWIM-TI Information Origin Authentication shall allow to protect information exchanges according to the Information Origin Authentication Policy.
Title	Policy Based SWIM-TI Information Origin Authentication

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Status	<Validated>
Rationale	The need for information origin authentication or not as well as the type of origin authentication can be determined according to an Information Origin Authentication Policy This requirement covers NIST security controls IA-1 a.2, IA-5 a and IA-5 b.
Category	<Design><Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<APPLIES TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
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<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
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[REQ]

Identifier	REQ-14.01.04-TS-0002.0280
Requirement	The SWIM-TI Information Origin Authentication Policy shall include the following information: - If a given information exchange requires Information Origin authentication. - Which digital signature schema has to be used (symmetric, asymmetric). - Which digital signature algorithm has to be used. - If it is required to use a multipurpose key or a dedicated one. - Any other additional information about producer and recipients.
Title	SWIM-TI Information Origin Authentication Policy Structure
Status	<Validated>
Rationale	This requirement allows a flexible use of the Information Origin Authentication that will perform its tasks according to the information defined in the policy: - It allows to specify if the digital signature is required. - It allows to specify which signature schema has to be used allowing to choose for each information exchange the solution that represents the right

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	trade-off between performance and protection (Message Authentication Code (MAC) for symmetric signing and digital signature for asymmetric signing based on public/private key pair (note that the symmetric signing does not fulfill non-repudiation needs because the shared secret used to sign the information is shared among several participants). - It allows to specify for a given information exchange the signing algorithm to be used. - It allows to specify which key has to be used and in particular if it is a multipurpose or a dedicated one. - It allows to provide any other additional information needed to enforce the data origin authentication. This requirement covers NIST security control IA-1 a.2.
Category	<Design><Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Project>	14.02.09	N/A
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<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
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[REQ]

Identifier	REQ-14.01.04-TS-0002.0630
Requirement	The SWIM-TI Information Origin Authentication shall use cryptographic keys managed by the PKI.
Title	SWIM-TI Information Origin Authentication cryptographic keys
Status	<Validated>
Rationale	This requirement clarifies where the cryptographic keys used to sign data are managed (stored, created, etc.).This requirement covers NIST security controls IA-3, IA-5 d, IA-5 h, IA-9 and AC-4.
Category	<Functional><Interface><Security>

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Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Function/Behaviour><ICD>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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[REQ]

Identifier	REQ-14.01.04-TS-0002.0641
Requirement	The SWIM-TI Audit shall audit message signature and signature validation attempts according to the specific audit policy.
Title	Policy Based Message signature generation and validation attempts auditing
Status	<Validated>
Rationale	Data signature generation and validation attempts (successfully or not performed) have to be audited. The need for audit or not of the message signature and attempts (successful or not) can be determined according to an Audit Policy. This requirement covers NIST security controls AC-6 (9) and AU-2 a.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+><BP Core><PP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Identity Management provider><Identity Management consumer><Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>

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Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
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3.3.1.3 Policy Management Requirements

In this paragraph policy management requirements for the SWIM-TI Security are provided..

[REQ]

Identifier	REQ-14.01.04-TS-0002.0011
Requirement	The SWIM-TI Security shall allow the application of different types of security policies at the granularity of a SWIM ATM specific service.
Title	Support of Security Policies at SWIM Service granularity
Status	<Validated>
Rationale	The SWIM Technical Infrastructure is used to enable the exchanging of several types of information among several types of Systems and using the PENS as networking infrastructure. It is reasonable to consider that different SWIM services (or groups of) have different security constraints and that for a given SWIM service there could be different consumers having different authorisation (i.e. a user in a role 'R' has the right to use service 'S') and/or authentication (i.e. a service could be available only to authenticated users or public available) policies. This requires to apply the security policies at granularity of a SWIM service. This requirement covers NIST security control AC-4.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider>
Selfstanding set	<Not applicable>
Conformance	<No>

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High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<SATISFIES>	<ATMS Requirement>	P14.02.02-REQ_043	<Full>
<SATISFIES>	<ATMS Requirement>	P14.02.02-REQ_046	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.02	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
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[REQ]

Identifier	REQ-14.01.04-TS-0002.0301
Requirement	The Authentication Policy shall specify the type of identity security token.
Title	Authentication Policy specified identity security token type
Status	<Validated>
Rationale	SWIM-TI Authentication can be enforced on a policy basis. In order to ensure a consistent, systematic application of the established authentication rules and policies and to allow interoperability among different stakeholders, the Authentication Policy shall carry information about the kind of digital identity and, when the Identity Management is realized through an Identity Provider, the security token that shall be used. . This requirement covers NIST security controls IA-1 a.2, IA-2, IA-8 and IA-9.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+><PP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

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<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
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<SATISFIES>	<Enabler>	GGSWIM-58c	<Full>
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[REQ]

Identifier	REQ-14.01.04-TS-0002.0303
Requirement	The Authentication Policy shall specify the type of digital identity.
Title	Authentication Policy specified digital identity
Status	<Validated>
Rationale	SWIM-TI Authentication can be enforced on a policy basis. In order to ensure a consistent, systematic application of the established authentication rules and policies and to allow interoperability among different stakeholders, the Authentication Policy shall carry information about the kind of digital identity that shall be adopted by Identity Management. This requirement covers NIST security controls IA-1 a.2, IA-2, IA-8 and IA-9.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+><BP Core><PP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<SATISFIES>	<Enabler>	GGSWIM-58c	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0302
Requirement	The Authorization Policy shall specify the type of identity security token.
Title	Authorization Policy specified identity security token type
Status	<Validated>
Rationale	SWIM-TI Authorization can be enforced on a policy basis. In order to ensure a consistent, systematic application of the established authorization rules and policies and to allow interoperability among different stakeholders, the Authorization Policy shall carry information about the kind of identity security token that shall be used when the Identity Management is realized through an Identity Provider. This requirement covers NIST security controls AC-3, IA-2, IA-8, IA-9 and CA-1 a.2.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+><PP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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[REQ]

Identifier	REQ-14.01.04-TS-0002.0304
Requirement	The Authorization Policy shall specify the type of digital identity.
Title	Authorization Policy specified digital identity
Status	<Validated>
Rationale	SWIM-TI Authorization can be enforced on a policy basis. In order to ensure a consistent, systematic application of the established authorization rules and policies and to allow interoperability among different stakeholders, the Authorization Policy shall carry information about the kind of digital identity

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	that shall be adopted by Identity Management. This requirement covers NIST security controls AC-3, IA-2, IA-8, IA-9 and CA-1 a.2.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+><BP Core><PP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Functional block>	REG	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

3.3.1.4 Policy Enforcement Requirements

[IREQ]

Identifier	REQ-14.01.04-TS-0013.0031
Requirement	The Security Policy Enforcement shall be able to manage the following security policies: + Confidentiality Policy. + Authentication Policy. + Authorization Policy. + Information Origin Authentication Policy. + Audit Policy.
Title	Security Policy Kinds supported by the Security Policy Enforcement
Status	<Validated>

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Rationale	This requirement provides a list of Security Policy types that can be managed by Security Policy Enforcement. This requirement covers NIST security control AC-4 and AU-7 (1).
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<BP Core><YP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
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<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
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[IREQ]

Identifier	REQ-14.01.04-TS-0013.0051
Requirement	The Security Policy Enforcement shall be able to synchronously retrieve policies from the Policy Management.
Title	Synchronous Security Policies Retrieving
Status	<In Progress>
Rationale	SWIM-TI Security policies enforcement relies on Policy lifecycle management for retrieving new or updated policies. The retrieving can be synchronous (PEP asks periodically the Policy Management for new or updated relevant policies) or asynchronous (Policy Management notifies relevant PEPs about new or updated policies). This requirement covers NIST security control AC-1 a.2.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<BP Core><YP Security+>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A

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<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
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<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0013.0061
Requirement	The Security Policy Enforcement Infrastructure shall be able to asynchronously retrieve policies from the Policy Management.
Title	Asynchronous Security Policies retrieving
Status	<In Progress>
Rationale	SWIM-TI Security policies enforcement relies on Policy lifecycle management for retrieving new or updated policies. The retrieving can be synchronous (PEP asks periodically the Policy Management for new or updated relevant policies) or asynchronous (Policy Management notifies relevant PEPs about new or updated policies). This requirement covers NIST security control AC-1 a.2.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<BP Core><YP Security+>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
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3.3.1.5 Authentication Requirements

SWIM-TI Authentication as part of the SWIM-TI Security, is an infrastructure service and it is related to Access Control. It provides authentication according to the brokered authentication pattern. The SWIM-TI Authentication:

- Supports different authentication mechanisms,

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- Validation and issuing of authentication credentials,
- Supports resources requestor authentication and requestor-provider authentication (mutual authentication),
- Realization of a federate single sign-on (brokered authentication) relying on PKI and/or STI.

[REQ]

Identifier	REQ-14.01.04-TS-0002.0121
Requirement	The SWIM-TI Security shall use X509 certificates for system or machine authentication.
Title	SWIM Technical Infrastructure X509 certificates basis authentication
Status	<Validated>
Rationale	The SWIM Technical Infrastructure is used to enable the exchanging of several types of information among several types of geographically distributed systems interconnected at network level. Taking into account the overall context and the sensitivity of the exchanged data it is required to guarantee several security properties such as (but not limited to) the information integrity, authorization and confidentiality and service (ATM-specific and Infrastructure services) consumer/provider authentication. For what concerns the authentication, the use of certificates is required. This requirement assures that X509 certificates are used. This requirement covers NIST security controls IA-5 c, IA-5 (2) a and IA-3.
Category	<Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED TO>	<Project>	14.02.02	N/A
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<ALLOCATED TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
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[REQ]

Identifier	REQ-14.01.04-TS-0002.0661
Requirement	The SWIM-TI Security shall provide between service consumer and provider for different federated security system, both the following authentication schemes: - Requestor-provider authentication (mutual authentication) mechanism, and - Only resource requestor authentication.
Title	SWIM Technical Infrastructure mutual authentication mechanism support
Status	<Validated>
Rationale	The SWIM Technical Infrastructure is used to enable the exchanging of several types of information among several types of geographically distributed systems interconnected at network level. Taking into account the overall context and the sensitivity of the exchanged data it is required to guarantee several security properties such as (but not limited to) the information integrity, authorization and confidentiality and service (ATM-specific and Infrastructure services) consumer/provider authentication. This requirement assures that the SWIM Technical Infrastructure allows systems involved in the communication to mutually authenticate each other. This requirement covers NIST security controls AC-3, IA-9 and SC-7 (11).
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+><BP Core><PP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Identity Management provider><Identity Management consumer>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
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[REQ]

Identifier	REQ-14.01.04-TS-0002.0111

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Requirement	The SWIM-TI Security shall provide service consumer authentication based on static username/password mechanism.
Title	SWIM Technical Infrastructure static service consumer authentication support
Status	<Validated>
Rationale	The SWIM Technical Infrastructure is used to enable the exchanging of several types of information among several types of geographically distributed systems interconnected at network level. Taking into account the overall context and the sensitivity of the exchanged data it is required to guarantee several security properties such as (but not limited to) the information integrity, authorization and confidentiality and service (ATM-specific and Infrastructure services) consumer/provider authentication. This requirement assures that all the service consumers are properly authenticated guarantying their authenticity. This requirement covers NIST security controls IA-2 and IA-8.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED TO>	<Functional block>	SEC	N/A
<APPLIES TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0683
Requirement	The Authentication policy, when requiring username/password as digital identity, shall provide constraints about the password minimum requirements: + Length; + Entropy; + Symbol set; + Renewal interval; + Reuse of previous passwords.
Title	SWIM Technical Infrastructure consumer authentication password strength
Status	<In Progress>
Rationale	The SWIM Technical Infrastructure is used to enable the exchanging of several types of information among several types of geographically distributed systems interconnected at network level. Taking into account the overall context and the sensitivity of the exchanged data it is required to guarantee several security properties such as (but not limited to) the information integrity, authorization and confidentiality and service (ATM-specific and Infrastructure services) consumer/provider authentication. This requirement assures that all the service consumers use password with minimum requirements of length, entropy, symbol set, renewal interval and

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	reuse restrictions (i.e. password used previously cannot be re-assigned) guarantying their strength. This requirement covers NIST security controls IA-5 c , IA-5 (1.a), IA-5 (1.b) and IA-5 (1.d).
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED TO>	<Functional block>	SEC	N/A
<APPLIES TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0920
Requirement	The SWIM-TI Authentication Policy shall support adaptive authentication by mapping the risk profile of authentication attempts to the appropriate level of information that shall be provided by authenticating entity.
Title	Policy-supported Adaptive Authentication
Status	<In Progress>
Rationale	Adaptive Authentication means that the authentication function takes into consideration the risk profile of the authentication attempt to decide whether or not to require selected entities to provide additional authentication information when certain pre-established conditions or triggers occur, for instance when individuals access information that they do not typically access as part of their normal duties, roles, or responsibilities, accessing greater quantities of information than the individuals would routinely access, or attempt to access information from suspicious network addresses. In SWIM-TI such request for stronger authentication can be enabled through Authentication Policy enforcing for instance the usage of hardware security tokens (see REQ-14.01.04-TS-0002.0890) under certain conditions. This requirement covers NIST security control IA-10.
Category	<Design><Functional><Security>
Validation Method	
Verification Method	<Review of Design>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>

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Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0350
Requirement	The SWIM-TI security policy enforcement shall allow a service provider to authenticate a consumer request by mutual authentication mechanism.
Title	SWIM Technical Infrastructure mutual authentication mechanism support
Status	<Validated>
Rationale	The SWIM Technical Infrastructure is used to enable the exchanging of several types of information among several types of geographically distributed systems interconnected at network level. Taking into account the overall context and the sensitivity of the exchanged data it is required to guarantee several security properties such as (but not limited to) the information integrity, authorization and confidentiality and service (ATM-specific and Infrastructure services) consumer/provider authentication. This requirement assures that the SWIM Technical Infrastructure does not allow service consumption when the consumer is not authenticated according to policy enforcement. This requirement covers NIST security controls IA-8, IA-9, AC-4 and SC-7 (11).
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A

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<ALLOCATED TO>	<Project>	14.02.09	N/A
<ALLOCATED TO>	<Project>	14.02.01	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<ATMS Requirement>	09.19-D03-210	<Full>
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<ALLOCATED TO>	<Functional block>	Blue Profile	N/A
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<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
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<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
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<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0460
Requirement	The SWIM-TI Authentication shall notify the relevant Federated Security Systems and Audit if an entity is released from authentication blacklisting.
Title	Federated liberation of blacklisted entities
Status	<In Progress>
Rationale	Federated Security Systems need to know when a blacklisted entity has been released from the blacklist list in order to allow their further consumption of services/data. This defines some minimal requirements the Authorization Policy shall obey. This requirement covers NIST security control AU-2 a, SI-5 c and CA-3 (5).
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+><BP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Identity Management provider>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED TO>	<Functional block>	SEC	N/A
<APPLIES TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

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[REQ]

Identifier	REQ-14.01.04-TS-0002.0431
Requirement	The SWIM-TI Authentication shall retrieve the maximum number of possible authentication attempts from SWIM-TI Authentication Policy or from information exchange between federated systems.
Title	Federated maximum number of authentication attempts
Status	<In Progress>
Rationale	Authentication blacklists are to be part of SWIM-TI to prevent abuse of authentication attempts. The maximum number of authentications has to be known also by the different federated security systems. This requirement covers NIST security controls AC-7 a and IA-5 (9).
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+><BP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Identity Management provider>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0701
Requirement	The SWIM-TI Security shall detect and record failed authentication attempts when the identity of the consumer and/or the authentication information provided by the consumer is invalid.
Title	SWIM Technical Infrastructure failed authentications detection support
Status	<Validated>
Rationale	The SWIM Technical Infrastructure is used to enable the exchanging of several types of information among several types of geographically distributed systems interconnected at network level. Taking into account the overall context and the sensitivity of the exchanged data it is required to guarantee several security properties such as (but not limited to) the information integrity, authorization and confidentiality and service (ATM-specific and Infrastructure services) consumer/provider authentication. Failed authentication attempts are detected and reported for monitoring or security protection purposes. This requirement covers NIST security controls AC-7 a, AU-2 a, SI-4a.2, SI-4b.
Category	<Functional><Security>

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Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0571
Requirement	The SWIM-TI Authentication shall blacklist entities of the same or different Federated Security Systems when the number of their failed authentication requests exceeds the number of authentication attempts specified into the specific SWIM-TI Authentication Policy.
Title	Entity blacklisted according to maximum number of authentication attempts
Status	<In Progress>
Rationale	Authentication blacklists are to be part of auditing to prevent further authentication attempts by blacklisted entities. This requirement defines when an entity shall be blacklisted after exceeding a certain number of failed authentication attempts. This requirement covers NIST security controls AC-7 a, A-5 (9) and CA-3 (5).
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+><BP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Identity Management provider>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>

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<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0710
Requirement	The SWIM-TI Authentication shall report to Audit when an entity has been placed in a blacklist.
Title	Audit report when an entity is blacklisted
Status	<In Progress>
Rationale	Authentication blacklists are to be part of auditing to prevent further authentication attempts by blacklisted entities. This requirement ensures the blacklisting event is reported to the Audit. This requirement covers NIST security control AU-2 a.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+><BP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

3.3.1.6 Authorization Requirements

SWIM-TI Authorization is in charge of granting/denying permission to consumption of services and access to data, as part of SWIM-TI Security. It relies on Authentication and Identity Management to gather the relevant information enabling the Authorization process and on Policy Management and the PEP to provide a policy based approach to Authorization.

[REQ]

Identifier	REQ-14.01.04-TS-0002.0360
Requirement	The SWIM-TI Security shall permit a requestor to consume a service if and

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	only if its authorization is successful.
Title	SWIM-TI authorized consumption services
Status	<Validated>
Rationale	The SWIM Technical Infrastructure is used to enable the exchanging of several types of information among several types of geographically distributed systems interconnected at network level. Taking into account the overall context and the sensitivity of the exchanged data it is required to guarantee several security properties such as (but not limited to) the information integrity, authorization and confidentiality and service (ATM-specific and Infrastructure services) consumer/provider authentication. This requirement ensures that the SWIM Technical Infrastructure allows service consumption when the consumer is authorized to consume it. This requirement covers NIST security controls AC-3 and AC-24.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Project>	14.02.01	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<ATMS Requirement>	09.19-D03-230	<Full>
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
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<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0370
Requirement	The SWIM-TI Security shall provide Attribute Based Access Control (ABAC).
Title	SWIM-TI ABAC support
Status	<Validated>
Rationale	The SWIM Technical Infrastructure is used to enable the exchanging of several types of information among several types of geographically distributed systems interconnected at network level. Taking into account the overall context and the sensitivity of the exchanged data it is required to guarantee several security properties such as (but not limited to) the

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	information integrity, authorization and confidentiality and service (ATM-specific and Infrastructure services) consumer/provider authentication. For what concerns the authorization, access control needs to be based upon assigned roles or some dynamic characteristic of the data being accessed (geographical locations, time, value of a given attribute). These can be implemented using ABAC with the inclusion of a Role attribute. This requirement covers NIST security controls AC-3 (1), AC-3 (3) and AC-5.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0380
Requirement	The SWIM-TI Security shall provide Role Based Access Control by means of a mandatory role attribute in ABAC.
Title	SWIM-TI support for Role in Access Control
Status	<Validated>
Rationale	The SWIM Technical Infrastructure is used to enable the exchanging of several types of information among several types of geographically distributed systems interconnected at network level. Taking into account the overall context and the sensitivity of the exchanged data it is required to guarantee several security properties such as (but not limited to) the information integrity, authorization and confidentiality and service (ATM-specific and Infrastructure services) consumer/provider authentication. For what concerns the authorization, access control needs to be based upon assigned roles or some dynamic characteristic of the data being accessed (geographical locations, time, value of a given attribute). These can be implemented using ABAC with the inclusion of a Role attribute. ABAC will be used to implement separation of duties principle within SWIM-TI. This requirement covers NIST security control AC-5.This requirement covers NIST security control AC-3 (7).
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>

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High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0391
Requirement	The SWIM-TI Security shall allow the enforcement of the Authorization security Policy: + During every information exchange from the SWIM-TI to an external network (e.g. Internet), and + During every information exchange from an external network (e.g. Internet) to the SWIM-TI.
Title	SWIM-TI Secure Import and Export by Information Authorization
Status	<Validated>
Rationale	The SWIM-TI Security needs to ensure secure (integral, confidential, authentic) interchange of information between external networks and the SWIM-TI. To that end it should be possible to allow the Authorization Policy to be enforced during every information exchange with external networks. This requirement covers NIST security controls AC-4, AC-24, AC-21 a, SI-4a.2.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+><BP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0412

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Requirement	The Authorization Policy shall be enforced during a demand of authorization request.
Title	Authorization Policy Enforcement
Status	<Validated>
Rationale	SWIM-TI Authorization will be enforced on a policy basis, this ensures a consistent, systematic application of the established authorization rules and policies. This requirement ensures the enforcement of Authorization Policy during customer demands of authorization. This requirement covers NIST security controls AC-4, AC-21 a, AC-24.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+><BP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED TO>	<Functional block>	SEC	N/A
<APPLIES TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0471
Requirement	The SWIM-TI Security shall allow to prevent consumption/access to any service/data not covered by a validated Security Authorization policy.
Title	SWIM-TI Security mandates an applicable authorization policy
Status	<Validated>
Rationale	Making every consumption/access to be covered by a validated Security policy enforces a mandatory policy based authorization and prevents unauthorized consumption/access by default. This requirement covers NIST security controls AC-4 and AC-21 a.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+><BP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

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[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0481
Requirement	The SWIM-TI Security shall allow to lock inactive sessions after a Policy defined amount of time, to prevent unauthorized access to the system.
Title	SWIM-TI session timeout locking
Status	<In Progress>
Rationale	Inactive sessions are a potential security breach as they may be used by unauthorized bystanders. Inactive sessions lock on minimizes this risk. This requirement covers NIST security controls AC-2 (3), AC-7 b, AC-11, IA-11, CM-7, SC-10, SI-14.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+><BP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0895
Requirement	The SWIM-TI Authorization Policy shall allow to limit audit record access and deletion to accounts having “Audit Administrator” role.

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Title	Audit Records Access restriction
Status	<In Progress>
Rationale	Due to the critical sensitivity of the information managed in SWIM it is necessary that privileged access to this information is kept to a minimum and only to those accounts having an "Audit Administrator" role. This requirement covers NIST security control AU-9 (4), SI-4 d, SI-11b.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+><BP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED TO>	<Functional block>	SEC	N/A
<APPLIES TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0870
Requirement	The SWIM-TI solution shall allow to associate security attributes to data being processed, stored and transferred.
Title	SWIM-TI security metadata
Status	<In Progress>
Rationale	The SWIM Technical Infrastructure is used to enable the exchanging of several types of information among several types of geographically distributed systems interconnected at network level. Taking into account the overall context and the sensitivity of the exchanged data it is required to guarantee several security properties such as (but not limited to) the information integrity, authorization and confidentiality and service (ATM-specific and Infrastructure services) consumer/provider authentication. In order to enforce information security policies for access control and information flow control, sensitive information shall be bound with security attributes, a form of metadata representing the basic properties or characteristics with respect to safeguarding information. The content or assigned values of security attributes can directly affect the ability of individuals to access organizational information. This requirement covers NIST Security Control 800.53 AC-16 a, b, c, d and SC-16.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>

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Profile Part	<YP Security+><BP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0880
Requirement	The SWIM-TI Authorization mechanism shall rely on security attributes to allow access to data resources.
Title	SWIM-TI security attribute-based access
Status	<In Progress>
Rationale	The SWIM Technical Infrastructure is used to enable the exchanging of several types of information among several types of geographically distributed systems interconnected at network level. Taking into account the overall context and the sensitivity of the exchanged data it is required to guarantee several security properties such as (but not limited to) the information integrity, authorization and confidentiality and service (ATM-specific and Infrastructure services) consumer/provider authentication. In order to enforce information security policies for access control and information flow control, policy decision point (PDP) for authorization process could take advantage of security attributes bound with sensitive data. This requirement covers NIST Security Control 800.53 AC-16 a,b,c,d and AC-21 a.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core>
Domain of interest	<SLA>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A

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<ALLOCATED TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0890
Requirement	The SWIM-TI Security shall allow usage of hardware security token for authentication when stronger security level is required.
Title	SWIM Technical Infrastructure hardware token-based authentication
Status	<In Progress>
Rationale	The SWIM Technical Infrastructure is used to enable the exchanging of several types of information among several types of geographically distributed systems interconnected at network level. Taking into account the overall context and the sensitivity of the exchanged data it is required to guarantee several security properties such as (but not limited to) the information integrity, authorization and confidentiality and service (ATM-specific and Infrastructure services) consumer/provider authentication. For most critical services (e.g. services exchanging classified data) it is necessary to have a stronger authentication mechanism that can be achieved using hardware security token working with SWIM-TI PKI. The kind of allowed hardware security token that can be adopted is restricted to devices which satisfy specific quality requirements. This requirement covers NIST Security Control 800.53 IA-5 (11). This requirement is also linked to Adaptive Authentication and can be mapped on NIST Security Control 800.53 IA-10.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+><BP FDD>
Domain of interest	<SLA>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED TO>	<Functional block>	SEC	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED TO>	<Project>	14.02.09	N/A
<ALLOCATED TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

3.3.1.7 Audit Requirements

SWIM-TI Audit as part of the SWIM-TI Security, is in charge of providing logging and reporting of Security related events, allowing the future review, analysis and assessment of these events.

[REQ]

Identifier	REQ-14.01.04-TS-0002.0750
Requirement	The SWIM-TI Security shall include a functionality for reporting the handling of the following Security Incidents: + Denial of Service. + Intrusion. + Malicious or unauthorized software installation. + Reconnaissance (e.g. port scanning). + Physical damage. + Information compromise. + Software failure (with security implications).
Title	SWIM-TI support for incident reporting
Status	<In Progress>
Rationale	It is important to monitor any incidents that may have an impact on security. This requirement ensures that the SWIM Technical Infrastructure provides a functionality aiming at reporting the handling of these incidents. This requirement covers NIST security controls: AU-2 a, IR-5, SI-4b, SI-4g, SI-11a.
Category	<Functional><HMI><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED TO>	<Functional block>	SEC	N/A
<APPLIES TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0760
Requirement	The SWIM-TI Security shall provide a functionality for reporting the following detailed information about any one of the Security Incidents defined in REQ-

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	14.01.04-TS-0002.0750: + Causes of the incident. + Impact of the incident. + How it was handled (step by step description). + Consequences of the incident. + What actions were put in place to mitigate the consequences. + Status of the incident.
Title	SWIM's incident reporting details
Status	<In Progress>
Rationale	It is important to monitor any incidents that may have an impact on security. This requirement specifies the specific details the reporting functionality shall cover. It is expected that some human interaction is needed for fulfilling these reports. This requirement covers NIST security controls AU-3 and AU-3 (1) , SI-4b, SI-4g, SI-11a, IR-5.
Category	<Functional><HMI><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0490
Requirement	The SWIM-TI Security shall uniquely log all user and system access to SWIM services/data detailing: + Time and date of access. + IP of user/system. + Services/data accessed (where technically possible).
Title	SWIM's access unique identification logging
Status	<Validated>
Rationale	In order to enable the auditing of these accesses it is necessary to log every one of them. Additionally, to have more control of access times, patterns and what is done to/with the information; time of access and data/services accessed need to be logged too. This requirement covers NIST security controls AC-17 (1) and AU-2 a and SI-4a.2.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>

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Profile Part	<YP Core><BP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0900
Requirement	The SWIM-TI Audit Policy shall at least include the following information: - The information which need to be recorded, - The user roles that must be provided with audit records, - The frequency of reporting or event type triggering the audit.
Title	Audit Policy Minimal Content
Status	<In Progress>
Rationale	To enable the auditing process every security related event needs to be logged with all the additional information specified by the applicable Audit Policy. This requirement covers the following NIST security controls: SI-4e, SI-4 g.
Category	<Design><Functional><Security>
Validation Method	
Verification Method	<Review of Design>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>

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<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0512
Requirement	The Audit Policy shall be enforced after a Demand of Identity and Authentication Information Assertion.
Title	Authenticate Identity's Audit Policy Enforcement
Status	<Validated>
Rationale	To enable the auditing process every security related event needs to be logged with all the additional information specified by the applicable Audit Policy. This requirement ensures that the Audit Policy is enforced after a Demand of Identity and Authentication Information Assertion. This requirement covers NIST security controls AC-17 (1), AU-2 a , SI-4 g.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+><BP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0522
Requirement	The Audit Policy shall be enforced after a Demand of Data Encryption.
Title	Encryption's Audit Policy Enforcement

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Status	<Validated>
Rationale	To enable the auditing process every security related event needs to be logged with all the additional information specified by the applicable Audit Policy. This requirement ensures that the Audit Policy is enforced after a Demand of Data Encryption. This requirement covers NIST security controls IA-7, AU-2 a, SI-4 g.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+><BP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0532
Requirement	The Audit Policy shall be enforced after a Demand of Confidentiality Assertion.
Title	Decryption's Audit Policy Enforcement
Status	<Validated>
Rationale	To enable the auditing process every security related event needs to be logged with all the additional information specified by the applicable Audit Policy. This requirement ensures that the Audit Policy is enforced after a Demand of Confidentiality Assertion. This requirement covers NIST security controls IA-7, AU-2 a, SI-4 g.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+><BP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>

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Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0542
Requirement	The Audit Policy shall be enforced after data signature during a Data Origin Authentication process.
Title	Data Origin Authentication's Audit Policy Enforcement (signature)
Status	<Validated>
Rationale	To enable the auditing process every security related event needs to be logged with all the additional information specified by the applicable Audit Policy. This requirement ensures that the Audit Policy is enforced after a data signature during a Information Origin Authentication process. This requirement covers NIST security controls IA-2, AU-2 a, SI-4 g.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+><BP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0552

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Requirement	The Audit Policy shall be enforced after signature verification during a Data Origin Authentication process.
Title	Data Origin Authentication's Audit Policy Enforcement (signature verification)
Status	<Validated>
Rationale	To enable the auditing process every security related event needs to be logged with all the additional information specified by the applicable Audit Policy. This requirement ensures that the Audit Policy is enforced after a signature verification during an Information Origin Authentication process. This requirement covers NIST security controls IA-2, AU-2 a, SI-4 g.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+><BP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0562
Requirement	The Audit Policy shall be enforced after a Demand of Authorization Request.
Title	Authorization request's Audit Policy Enforcement
Status	<Validated>
Rationale	To enable the auditing process every security related event needs to be logged with all the additional information specified by the applicable Audit Policy. This requirement ensures that the Audit Policy is enforced after a Demand of Authorization Request. This requirement covers NIST security controls AC-3, AU-2 a, SI-4 g.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+><BP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>

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Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0770
Requirement	The SWIM-TI Security shall log everything specified in applicable service-specific Audit Policy.
Title	Audit's service-specific logging
Status	<Validated>
Rationale	The existence of service-specific Audit policies may supplement/override the Global (default) Audit Policy. This requirement ensures that everything specified in additional applicable Audit Policies is logged. This requirement covers NIST security controls AU-12 and AU-3 (1).
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+><BP Core>
Domain of interest	<Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0780

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Requirement	The SWIM-TI Security shall record events with all additional data specified in the applicable service-specific Audit Policy.
Title	Audit's service-level specific logging
Status	<Validated>
Rationale	The existence of service-specific Audit policies may supplement/override the Global (default) Audit policy. This requirement ensures that any additional data required by these Policies gets logged. This requirement covers NIST security controls AU-12 and AU-3 (1).
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+><BP Core><PP Core>
Domain of interest	<Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Identity Management provider><Identity Management consumer><Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
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<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0820
Requirement	The SWIM-TI Security shall log every blacklisted entity with any additional information provided by Authentication.
Title	Log of blacklisted entities
Status	<In Progress>
Rationale	Blacklisted entities need to be logged for future auditing purposes, any additional information provided by Authentication is valuable as it aids the Audit process. This requirement covers NIST security controls CA-3 (5).
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+><BP Core>
Domain of interest	<Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>

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Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0831
Requirement	The SWIM-TI Security shall allow for Federated Security System to log every blacklist release and the mechanism applied for its release: + Automatic after a Policy defined amount of time. + Manual (with reason provided for release).
Title	Log of blacklist releases
Status	<In Progress>
Rationale	Blacklist releases need to be logged for future auditing purposes. This requirement covers NIST security control AU-3 (2) and CA-3 (5).
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+><BP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Identity Management provider>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

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Identifier	REQ-14.01.04-TS-0002.0905
Requirement	The SWIM-TI Security shall allow to configure different monitoring strategies according to current security context.
Title	Monitoring Strategies
Status	<In Progress>
Rationale	Monitoring strategies must suit possible changes in the security context due to increased risk to organizational operations and assets, individuals, other organizations, or the Nation based on law enforcement information, intelligence information, or other credible sources of information. For such reason it shall be ensured that different monitoring strategies can be configured and enforced by SWIM-TI Supervision although the definition of such monitoring strategies won't be imposed nor restricted in advance. This requirement covers the following NIST security controls: SI-4e, SI-5.A.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0910
Requirement	Evidence of the correct execution of security functions shall be provided in the form of either an acknowledgement or auditing.
Title	Security functions execution evidence
Status	<In Progress>
Rationale	This requirement ensures the SWIM-TI Security has the capability to verify that security functions have not been tampered and thus are being executed properly and to perform this check on certain transitions on demand or with

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	certain defined periodicity. This requirement covers the following NIST security controls: SI-6.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0930
Requirement	The SWIM-TI Security shall provide tamper-proof storage of sensitive information by applying encryption and digital signature.
Title	Supporting tamper-proof information storage
Status	<In Progress>
Rationale	Certain types of information used in aviation must be secured so as to be tamper-proof. This can include certain logs for example. Tamper-proofing means that the information will be available and uncompromised for a long period of time – at least 50 years. Tamper-proof information storage is a vital aspect of non-repudiation in aviation and is achieved applying cryptographic techniques such as digital signature. This requirement complies with REQ-14.02.02-TS-SGOV.0110 and REQ-14.02.02-TS-ACCO.0020 and ensures coverage of NIST SP 800 53 security control SC-28.
Category	<Design><Functional><Security>
Validation Method	
Verification Method	<Review of Design><Analysis>
Profile Part	<YP Advanced><BP Core>
Domain of interest	<Governance><Function/Behaviour>

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Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator><Identity Management provider><Identity Management consumer>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
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<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0940
Requirement	The SWIM-TI Security shall allow to maintain sensitive information in an uncompromised condition for a configurable number of days to be defined either by policy or application level configuration.
Title	Sensitive information preservation
Status	<In Progress>
Rationale	Certain types of information used in aviation must be secured so as to be tamper-proof. This can include certain logs for example. Tamper-proofing means that the information will be available and uncompromised for a long period of time – at least 50 years. Tamper-proof information storage is a vital aspect of non-repudiation in aviation and is achieved applying cryptographic techniques such as digital signature. This requirement complies with REQ-14.02.02-TS-SGOV.0110 and REQ-14.02.02-TS-ACCO.0020 and ensures coverage of NIST SP 800 53 security control SC-28.
Category	<Design><Functional><Security>
Validation Method	
Verification Method	<Review of Design><Analysis>
Profile Part	<YP Advanced><BP Core>
Domain of interest	<Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator><Identity Management provider><Identity Management consumer>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance

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<ALLOCATED_TO>	<Functional block>	SEC	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

3.3.1.8 Security Enablers

[REQ]

Identifier	REQ-14.01.04-TS-0002.0132
Requirement	The SWIM-TI Security shall use PKI to retrieve X.509 certificates
Title	SWIM-TI Security certificates retrieve
Status	<In Progress>
Rationale	The SWIM Technical Infrastructure is used to enable the exchanging of several types of information among several types of geographically distributed systems interconnected at network level. Taking into account the overall context and the sensitivity of the exchanged data it is required to guarantee several security properties such as (but not limited to) the information integrity, authorization and confidentiality and service (ATM-specific and Infrastructure services) consumer/provider authentication. For what concerns the authentication, the use of certificates is required and those have to be signed by a trusted Certification Authority (CA) and managed by the PKI. This requirement covers NIST security controls IA-5 d and IA-5 (2.a).
Category	<Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<SATISFIES>	<ATMS Requirement>	P14.02.02-REQ_032	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.02	N/A
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>

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<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0133
Requirement	The SWIM-TI Security shall use PKI to validate X.509 certificates
Title	SWIM-TI Security certificates validation
Status	<In Progress>
Rationale	The SWIM Technical Infrastructure is used to enable the exchanging of several types of information among several types of geographically distributed systems interconnected at network level. Taking into account the overall context and the sensitivity of the exchanged data it is required to guarantee several security properties such as (but not limited to) the information integrity, authorization and confidentiality and service (ATM-specific and Infrastructure services) consumer/provider authentication. For what concerns the authentication, the use of certificates is required and those have to be signed by a trusted Certification Authority (CA) and managed by the PKI. This requirement covers NIST security controls IA-5 d and IA-5 (2.a).
Category	<Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<SATISFIES>	<ATMS Requirement>	P14.02.02-REQ 032	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED TO>	<Project>	14.02.02	N/A
<ALLOCATED TO>	<Functional block>	SEC	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>

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<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
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<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0002.0162
Requirement	The SWIM-TI Security shall protect the overall SWIM-TI against overload resulting from: + Denial of Service Attack, or + Service Utilisation above maximum levels.
Title	SWIM Technical Infrastructure overload protection support
Status	<In Progress>
Rationale	The SWIM Technical Infrastructure is used to enable the exchanging of several types of information among several types of geographically distributed systems interconnected at network level. Taking into account the overall context and the sensitivity of the exchanged data it is required to guarantee several security properties such as (but not limited to) the information integrity, authorization and confidentiality and service (ATM-specific and Infrastructure services) consumer/provider authentication and to protect information and systems from external unknown and malicious users. This requirement assures that the SWIM Technical infrastructure is protected against overload due to attacks or to legitimate, but above thresholds, use of services; for instance number of concurrent accesses could be limited. This requirement covers NIST Security Control 800.53 AC-10.This requirement covers NIST security controls SC-5 (2), SC-5 (3) and AC-10.
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core>
Domain of interest	<Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>

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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

The Time Service Enabler for ATM systems and ATM actors is an enabler for time information related to some of the SWIM-TI operations described in this specification. For what concerns SWIM-TI this is introduced in §3.1.8 and specified in REQ-14.01.04-TS-0811.0010.

Furthermore SWIM-TI Security relies also on PKI and STI specified in the SWIM-TI Identity Management Technical specification [15].

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3.3.2 Adaptability

This section includes adaptability requirements as documented in ISO/IEC 25010:2011. In particular, requirements included in this section refer to adaptability sub-characteristic of portability NFRs.

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

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3.3.3 Performance Characteristics

This section includes performance efficiency requirements as documented in ISO/IEC 25010:2011. The structure of the section is in accordance with performance efficiency NFR sub-characteristics described in ISO/IEC 25010:2011: (§3.3.3.1) time behaviour, (§3.3.3.2) resource utilization and (§3.3.3.3) capacity.

3.3.3.1 Time behaviour Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.3.3.2 Resource utilization Requirements

[REQ]

Identifier	REQ-14.01.04-TS-0202.0001
Requirement	In the SWIM-TI, the maximum persistent storage for auditing and logging per SWIM Node shall be 10GB.
Title	SWIM-TI Scalability Capacity
Status	<In Progress>
Rationale	The maximum storage for persistent auditing and logging per SWIM Node is based on the SWIM Profile White Paper and ISO 250101.This requirement covers NIST security control AU-4.
Category	<Performance><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core>
Domain of interest	<SLA><Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

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3.3.3.3 Capacity Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

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3.3.4 Safety & Security

This section includes security requirements as documented in ISO/IEC 25010:2011. The structure of the section is in accordance with security NFR sub-characteristics described in ISO/IEC 25010:2011: (§3.3.4.1) confidentiality, (§3.3.4.2) integrity, (§3.2.4.3) non-repudiation, (§3.3.4.4) accountability and (§3.3.4.5) authenticity. Furthermore, according to SJU guidelines, a dedicated subsection (§3.3.4.6) is provided for safety requirements.

[REQ]

Identifier	REQ-14.01.04-TS-0402.0030
Requirement	SWIM-TI audit logs shall be stored in a secure storage.
Title	Safe storage for audit logs
Status	<In Progress>
Rationale	Audit logs includes all information needed to successfully audit information system activity, therefore audit logs and audit tools shall be protected from unauthorized access, modification, and deletion. This should be achieved applying both logical and physical protection of audit logs. Logical protection can be addressed by enforcing adequate Security Policies to grant access to audit logs, while physical protection is addressed by media protection controls and physical and environmental protection controls. This requirement covers NIST security control AU-9.
Category	<Security>
Validation Method	
Verification Method	<Review of Design><Analysis>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<SLA><Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator><Identity Management provider>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<ALLOCATED_TO>	<Functional block>	SWIM-TI	N/A
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

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[REQ]

Identifier	REQ-14.01.04-TS-0402.0040
Requirement	SWIM-TI audit data shall be stored in a storage location remote and independent from the system generating the audit data.
Title	Remote and independent storage for audit logs
Status	<In Progress>
Rationale	Audit logs need to be stored in an independent and remote system. This requirement helps to ensure that a compromise of a system being part of SWIM-TI does not also result in a compromise of the corresponding audit records. This requirement covers NIST security control AU-9 (2).
Category	<Security>
Validation Method	
Verification Method	<Review of Design><Analysis>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<SLA><Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator><Identity Management provider>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<ALLOCATED_TO>	<Functional block>	SWIM-TI	N/A
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
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<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

3.3.4.1 Confidentiality Requirements

[REQ]

Identifier	REQ-14.01.04-TS-0402.0020
Requirement	The SWIM-TI Security shall limit audit record access to users with an Audit Administrator role.
Title	SWIM-TI Audit record access

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Status	<Validated>
Rationale	Due to the sensitivity of read/write access to Audit records it is required that this access is preserved to Audit Administrators. This requirement covers NIST security control AU-9 (4).
Category	<Functional><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED TO>	<Functional block>	SEC	N/A
<APPLIES TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED TO>	<Functional block>	Blue Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

3.3.4.2 Integrity Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.3.4.3 Non-repudiation Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.3.4.4 Accountability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

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3.3.4.5 Authenticity Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.3.4.6 Safety Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

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3.3.5 Maintainability

This section includes maintainability requirements as documented in ISO/IEC 25010:2011. The structure of the section is in accordance with maintainability NFR sub-characteristics described in ISO/IEC 25010:2011: (§3.3.5.1) modularity, (§3.3.5.2) reusability, (§3.3.5.3) analysability, (§3.3.5.4) modifiability and (§3.3.5.5) testability.

3.3.5.1 Modularity Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.3.5.2 Reusability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.3.5.3 Analysability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.3.5.4 Modifiability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.3.5.5 Testability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

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3.3.6 Reliability

This section includes reliability requirements as documented in ISO/IEC 25010:2011. The structure of the section is in accordance with reliability NFR sub-characteristics described in ISO/IEC 25010:2011: (§3.3.6.1) maturity, (§3.3.6.2) availability, (§3.3.6.3) fault tolerance and (§3.3.6.4) recoverability.

3.3.6.1 Maturity Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.3.6.2 Availability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.3.6.3 Fault tolerance Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.3.6.4 Recoverability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

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3.3.7 Internal Data Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

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3.3.8 Design and Construction Constraints

This section includes compatibility and portability requirements as documented in ISO/IEC 25010:2011. The structure of the section is in accordance with sub-characteristics of both compatibility and portability NFR described in ISO/IEC 25010:2011: (§3.3.8.1) co-existence and (§3.3.8.2) interoperability compatibility NFR sub-characteristics, (§3.3.8.3) installability and (§3.3.8.4) replaceability portability NFR sub-characteristics.

[REQ]

Identifier	REQ-14.01.04-TS-0802.0020
Requirement	The SWIM-TI cryptographic modules shall be developed in accordance with Level 3 of Security Requirements for Cryptographic Modules US Federal Information Processing Standard (FIPS 140-2).
Title	Conformance to Level 3 of US FIPS 140-2.
Status	<In Progress>
Rationale	The National Institute of Standards and Technology (NIST) issued the FIPS 140 Publication Series to coordinate the requirements and standards for cryptography modules that include both hardware and software components. Protection of a cryptographic module within a security system is necessary to maintain the confidentiality and integrity of the information protected by the module. This standard specifies the security requirements that will be satisfied by a cryptographic module. Given the nature of the air traffic services environment development should be to the equivalent of US Federal Information Processing Standard (FIPS) 140 Level 3.
Category	<Interoperability><Security>
Validation Method	
Verification Method	<Analysis>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD><SLA>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator><Identity Management provider><Identity Management consumer>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Applicable but not testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.09-SWIM-SEC-12	<Full>
<SATISFIES>	<ATMS Requirement>	P14.02.02-REQ_029	<Full>
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0250	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.02	N/A
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
<SATISFIES>	<Enabler>	AGSWIM-43	<Full>
<SATISFIES>	<Enabler>	AGSWIM-44	<Full>
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
<SATISFIES>	<Enabler>	AGSWIM-41	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>

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<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
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3.3.8.1 Co-existence Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.3.8.2 Interoperability Requirements

Apart of the requirements provided here below, those included in §3.1.8 are also applicable.

[REQ]

Identifier	REQ-14.01.04-TS-0002.0031
Requirement	Cryptographic algorithms and key sizes shall comply with European Network of Excellence in Cryptology (ECRYPT) II recommendations.
Title	SWIM Technical Infrastructure cryptographic algorithms ECRYPTII compliance
Status	<Validated>
Rationale	ECRYPT II recommendations represent a reference that is used to analyse and to identify the most appropriate cryptographic algorithms and key sizes. For further information about ECRYPT II, please refer to http://www.ecrypt.eu.org.The encryption algorithms are agreed between partners but are not published for sensitivity reasons. However, taking into account that the access to these information represents a key point enabling the interoperability, the partners are expected to evaluate how to properly govern the access to these information. The ECRYPTII recommendations must be considered as a minimum set of constraints which may be further restricted in specific policies and/or governance bodies. This requirement covers NIST security controls IA-5 c and IA-7 and SC-13.
Category	<Functional><Safety><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD><SLA>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator><Identity Management provider><Identity Management consumer>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.09-SWIM-SEC-12	<Full>
<SATISFIES>	<ATMS Requirement>	P14.02.02-REQ_029	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.02	N/A
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A

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<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[REQ]

Identifier	REQ-14.01.04-TS-0802.0010
Requirement	Cryptographic algorithms and key sizes shall comply with NIST 800-131A recommendations.
Title	SWIM Technical Infrastructure cryptographic algorithms NIST 800-131A compliance
Status	<In Progress>
Rationale	NIST Special Publication 800-131A 'Transitions: Recommendation for Transitioning the Use of Cryptographic Algorithms and Key Lengths" recommendations represent a reference that is used to analyse and to identify the most appropriate cryptographic algorithms and key sizes. In case of differences between ECRYPT II and NIST SP 800-131A recommendations, the most stringent recommendations must be considered as applicable. Although the compliance to NIST Special Publication 800-131A (January 2011) is implicitly included by the compliance to ECRYPT II (see REQ-14.01.04-TS-0002.0031), this requirement allows to ensure that the SWIM-TI will be compliant with up-to date recommendations either from NIST or ECRYPT II. The NIST SP 800-131A recommendations must be considered as a minimum set of constraints which may be further restricted in specific policies and/or governance bodies. This requirement covers NIST security controls IA-5c, IA-7 and SC-13.
Category	<Functional><Safety><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><BP Core><PP Core>
Domain of interest	<ICD><SLA>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator><Identity Management provider><Identity Management consumer>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.09-SWIM-SEC-12	<Full>
<SATISFIES>	<ATMS Requirement>	P14.02.02-REQ_029	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A

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<ALLOCATED_TO>	<Project>	14.02.02	N/A
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<ALLOCATED_TO>	<Functional block>	Purple Profile	N/A
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AGSWIM-34	<Full>
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<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-06b	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

3.3.8.3 Installability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.3.8.4 Replaceability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

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3.3.9 Interface Requirements

This section includes interface requirements applicable to the SWIM-TI Security technical view.

3.3.9.1 Internal Service Interface Bindings

[IREQ]

Identifier	REQ-14.01.04-TS-0914.0030
Requirement	LDAP services shall be instantiated using the following binding: + LDAPv3 over TCP + MEPs: SRR-MEP + Fault handling: as defined per LDAP standard + Encoding. - restricted encoding as defined per standard + Security: - Confidentiality: none - Integrity: none - Authenticity: none - Authorization: none - Non-repudiation: none + Contract: - formalism of contract description: as defined per standard - minimum: not applicable - reference: LDAPv3 + Interoperability: none
Title	Interface Binding. Unsecured LDAPv3 over TCP.
Status	<In Progress>
Rationale	A series of LDAP based operations do not necessarily need security. In particular this biding does support anonymous clients. This requirement covers NIST security control IA-5 a.
Category	<Interface><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider>
Roles	<Identity Management provider><Identity Management consumer>
Selfstanding set	<Internal service binding>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0101	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0156	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0157	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0158	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0159	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03a	<Full>

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[IREQ]

Identifier	REQ-14.01.04-TS-0914.0040
Requirement	LDAP services shall be instantiated using the following binding: + LDAPv3 over TLS over TCP. + MEPs: SRR-MEP + Fault handling: as defined per LDAP standard + Encoding. - restricted encoding as defined per standard + Security: - Confidentiality: transport - Integrity: transport - Authenticity: transport mutual or LDAP Simple or SASL - Authorization: transport or LDAP Simple or SASL - Non-repudiation: none + Contract: - formalism of contract description: as defined per standard - minimum: not applicable - reference: LDAPv3 + Interoperability: none
Title	Interface Binding. LDAPv3 over TLS over TCP.
Status	<In Progress>
Rationale	A series of LDAP based operations do at least need authentication and authorization and can take advantage of other security controls (confidentiality and integrity at transport level – i.e. TLS). This binding allows different options for authentication and authorization. The first option is to rely on authentication and authorization mechanism at transport level (i.e. TLS). The second option is to use LDAP Simple mechanism defined in the LDAP standard. The third option is to use SASL (Simply Authentication and Security Layer). A number of SASL mechanisms are currently defined. In LDAP based exchanges, External, Digest-MD5 and Kerberos V5 mechanisms are typically used. This requirement covers NIST security controls IA-4 (6) and IA-5 a.
Category	<Interface><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><PP Core><BP Core>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider>
Roles	<Identity Management provider><Identity Management consumer>
Selfstanding set	<Internal service binding>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable><Interoperability testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0101	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0111	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0112	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0113	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0114	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0156	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0157	N/A

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<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0158	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0159	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03a	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0914.0050
Requirement	OCSP services shall be instantiated using the following binding: +OCSP over HTTP(s) over TCP. + MEPs: SRR-MEP + Fault handling: the service shall be able to determine the content of the HTTP status code and HTTP reason phrase + Encoding. - restricted encoding as defined per standard + Security: - Confidentiality: optionally transport - Integrity: optionally transport - Authenticity: message level for OCSP responses or transport (optionally mutual) - Authorization: optionally transport - Non-repudiation: none + Contract: - formalism of contract description: as defined per standard - minimum: not applicable - reference: OCSP + Interoperability: none
Title	Interface Binding. OCSP over HTTP(s) over TCP.
Status	<In Progress>
Rationale	OCSP based operations do not necessarily need security. Security can be applied but can lead to significant recursive complexity. RFC 6960 requires that OSCP responses are signed. This is why the binding allows message level (OCSP layer on top of HTTP) and transport level (HTTP over TLS) as valid options to authenticate the OCSP responder. This bindings allows optionally to have mutual authentication at transport level (HTTP over TLS) in case it is required to authenticate the clients due to specific deployment options/security policies. If the OCSP server does not require some sort of authorization, an attacker can get the server to respond to arbitrary requests. Such responses may give the attacker information that may be valuable for a future attack. Furthermore, when required, the binding allows to apply the other security controls at transport level (HTTP over TLS). Authenticity at transport level has not to be confused with HTTP Basic and Digest Access Authentication that are not supported by this binding. This requirement covers NIST security control IA-5 (2.a).
Category	<Interface><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Core><PP Core><BP Core>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider>
Roles	<Identity Management provider><Identity Management consumer>
Selfstanding set	<Internal service binding>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

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[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0101	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0115	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0155	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03a	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0901.0332
Requirement	SCVP services shall be instantiated using the following binding: + SCVP over HTTP over TCP. + MEPs: SRR-MEP + Fault handling: the service shall be able to determine the content of the HTTP status code and HTTP reason phrase + Encoding. - restricted encoding as defined per standard + Security: - Confidentiality: none - Integrity: none - Authenticity: none - Authorization: none - Non-repudiation: none + Contract: - formalism of contract description: as defined per standard - minimum: not applicable - reference: SCVP + Interoperability: none
Title	Interface Binding. SCVP over HTTP over TCP.
Status	<In Progress>
Rationale	SCVP based operations do not necessarily need security. In particular (refer to RFC 5055 §1.2) this binding should be used to interact with Untrusted SCVP for certification path construction without validation. For further security considerations refer to RFC 5055 §9. This requirement covers NIST security control IA-5 (2.a).
Category	<Interface><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider>
Roles	<Identity Management consumer>
Selfstanding set	<Internal service binding>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	SEC	N/A

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<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0350	<Full>
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0101	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0115	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0160	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0006.0001	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0006.0010	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03a	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0914.0020
Requirement	SCVP services shall be instantiated using the following binding + SCVP over HTTPS over TCP. + MEPs: SRR-MEP + Fault handling: the service shall be able to determine the content of the HTTP status code and HTTP reason phrase + Encoding. - restricted encoding as defined per standard + Security: - Confidentiality: transport - Integrity: transport - Authenticity: message level for SCVP responses or transport (optionally mutual) - Authorization: optionally transport - Non-repudiation: none + Contract: - formalism of contract description: as defined per standard - minimum: not applicable - reference: SCVP + Interoperability: none
Title	Interface Binding. SCVP over HTTPS over TCP.
Status	<In Progress>
Rationale	SCVP based operations can be protected. This binding should be used to interact with Trusted SCVP (refer to RFC 5055 §1.2) for certification path construction and validation. In particular (refer to RFC 5055 §9) SCVP responses to validation requests must be protected to guarantee authenticity. This is why the binding allows message level (SCVP layer on top of HTTP) and transport level (HTTP over TLS) as valid options to authenticate the SCVP server. This bindings allows optionally to have mutual authentication at transport level (HTTP over TLS) in case it is required to authenticate the clients due to specific deployment options/security policies. According to RFC 5055 §9, If the SCVP server does not require some sort of authorization, an attacker can get the server to respond to arbitrary requests. Such responses may give the attacker information that may be valuable for a future attack. Furthermore the binding requires to apply the other security controls (confidentiality and integrity) at transport level (HTTP over TLS). Authenticity at transport level has not to be confused with HTTP Basic and Digest Access Authentication that are not supported by this binding. For further security considerations refer to RFC 5055 §9. This requirement covers NIST security control IA-5 (2.a).
Category	<Interface><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+><PP Core><BP Core>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider>

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Roles	<Identity Management provider><Identity Management consumer>
Selfstanding set	<Internal service binding>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Functional block>	SEC	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0101	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0111	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0112	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0113	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0114	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0115	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0116	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0160	N/A
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03a	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0916.0010
Requirement	STS services shall be instantiated over the following interface binding. + Protocol stack: - SOAP 1.2 with WS-Security 1.1 authentication through UsernameToken 1.1, WSSE SAML Token Profile 1.1 combined and/or WSSE SAML Token Profile 1.1 with any of WS-Trust 1.4, WS-Federation 1.2 over HTTP POST over TCP. + MEPs: - SRR-MEP + Fault handling: - the service shall be able to determine the content of the HTTP status code and HTTP reason phrase + Encoding: - Text encoding + Security - Confidentiality: message level - Integrity: message level - Authenticity: message level mutual - Authorization: message level - Non-repudiation: message level + Contract: - formalism of contract description: WSDL 1.1 and optionally WSDL 2.0 both including WS-SecurityPolicy, WS-Trust 1.4, WS-Federation 1.2. - minimum: WS-Trust. - reference: OASIS. + Interoperability: WS-I Basic Profile 2.0, WSI- Basic Security Profile 1.1
Title	STS Interface Binding. SOAP 1.2 with WS-Security 1.1, WS-Trust 1.4, WS-

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	Federation 1.2, and authentication through UsernameToken 1.1, WSSE X.509 Certificate Token Profile 1.1 and/or WSSE SAML Token Profile 1.1 over HTTP POST over TCP.
Status	<In Progress>
Rationale	This binding provides access to advanced security features with security controls at message level. HTTP Basic and Digest Access Authentication are transport level security techniques and they are not supported by this binding.
Category	<Interface><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider>
Roles	<Identity Management consumer>
Selfstanding set	<Internal service binding>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0101	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0111	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0115	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0122	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0123	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0125	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0126	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0127	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0130	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0132	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0133	N/A
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<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0136	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0137	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0138	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0141	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0142	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0152	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0177	N/A
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<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0150	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0151	N/A
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0002.0240	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0002.0055	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0002.0121	<Full>
<SATISFIES>	<Enabler>	GGSWIM-59c	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03b	<Full>
<SATISFIES>	<Enabler>	SWIM-SUPT-03a	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0916.0020

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Requirement	STS services shall be instantiated over the following interface binding. + Protocol stack: - SOAP 1.2 with any of WS-Trust 1.4, WS-Federation 1.2 over HTTPS POST over TCP. + MEPs: - SRR-MEP + Fault handling: - the service shall be able to determine the content of the HTTP status code and HTTP reason phrase + Encoding. - Text encoding + Security - Confidentiality: transport level - Integrity: transport level - Authenticity: transport level mutual - Authorization: transport level - Non-repudiation: transport level + Contract: - formalism of contract description: WSDL 1.1 and optionally WSDL 2.0 both including WS-SecurityPolicy, WS-Trust 1.4, WS-Federation 1.2. - minimum: WS-Trust. - reference: OASIS. + Interoperability: WS-I Basic Profile 2.0, WSI- Basic Security Profile 1.1
Title	STS Interface Binding. SOAP 1.2 with WS-Security 1.1, WS-Trust 1.4, WS-Federation 1.2, and authentication through UsernameToken 1.1, WSSE X.509 Certificate Token Profile 1.1 and/or WSSE SAML Token Profile 1.1 over HTTP POST over TCP.
Status	<In Progress>
Rationale	This binding provides access to advanced security features with security controls at transport level. Authenticity (or Authentication) at transport level has not to be confused with HTTP Basic and Digest Access Authentication that are not supported by this binding.
Category	<Interface><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<YP Security+>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider>
Roles	<Identity Management consumer>
Selfstanding set	<Internal service binding>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable><Interoperability testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
<ALLOCATED_TO>	<Functional block>	SEC	N/A
<SATISFIES>	<ATMS Requirement>	REQ-14.01.04-TS-0001.0350	<Full>
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0101	N/A
<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0111	N/A

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<INCLUDES>	<ATMS Requirement>	REQ-14.01.04-TS-0811.0115	N/A
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3.4 Supervision Functional and non-Functional Requirements

In this chapter functional and non-functional requirements concerning the SWIM-TI Supervision are provided. These requirements have been specified according to SWIM-TI Technical Use Case and latest TAD.

3.4.1 Capabilities

This section provides the functional requirements of the SWIM-TI Supervision derived from TAD functional and technical views.

3.4.1.1 Service Control and Lifecycle Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.4.1.2 Status Monitoring, Reporting, and Publication Requirements

[IREQ]

Identifier	REQ-14.01.04-TS-0005.0660
Requirement	The SWIM-TI Supervision shall monitor the technical and functional status of each configured SWIM Enabling Service.
Title	Status Monitoring of SWIM Enabling Service – monitoring service status
Status	<In Progress>
Rationale	The SWIM-TI Supervision needs to know the status of each SWIM Enabling Service as part of keeping the overall view of the system. The Supervision monitoring capability is essential to system safety, accountability, and service level compliance. This requirement covers NIST security control AU-2 a.
Category	<Functional><Security>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0030-0050	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>

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<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0005.0670
Requirement	The SWIM-TI Supervision shall monitor the technical and functional status of each configured SWIM Service.
Title	Status Monitoring of SWIM Service – monitoring service status
Status	<In Progress>
Rationale	The SWIM-TI Supervision needs to know the status of each SWIM Service as part of keeping the overall view of the system. The Supervision monitoring capability is essential to system safety, accountability, and service level compliance. This requirement covers NIST security control AU-2 a.
Category	<Functional><Security>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0030-0010	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0005.0680
Requirement	The SWIM-TI Supervision should monitor the operating condition of each of the following configured resources that are to be managed by Supervision at the local SWIM Node: 1. Node Hardware resources 2. Node Software (process) resources 3. Data communications resources. Configuration information at the local SWIM Node specifies which resources

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	are to be managed by SWIM-TI Supervision.
Title	Status monitoring of node resources
Status	<In Progress>
Rationale	The status of the Supervision needs to be monitored for ensuring that the status of the SWIM Technical Infrastructure is up-to-date. The SWIM-TI Supervision is dependent on a configured hardware, software, and data communications resources. Local Supervision must monitor the health of each of these resources. The Supervision monitoring capability is essential to system safety, accountability, and service level compliance. This requirement covers NIST security control AU-2 a.
Category	<Functional><Security>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Subscription handler><Publisher><Publication consumer><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0030-0010	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
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<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

3.4.1.3 Subscription Management Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.4.1.4 Service Level Agreement (SLA) Compliance Monitoring Requirements

[IREQ]

Identifier	REQ-14.01.04-TS-0005.1020
Requirement	The SWIM-TI Supervision shall collect the following service metrics on a Service with a Request/Response interaction pattern for each consumer-

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	provider pair: - Service Time - Number of Requests - Time of the Last Request - Number of Failed Requests - Number of Successful Requests - Maximum Response Time - Average Response Time - Last Response Time.
Title	Collection of Service Metrics for Service with R/R pattern – metrics to collect
Status	<In Progress>
Rationale	The SWIM-TI Supervision must collect service metrics in order to monitor system performance and compliance with service level agreements. Note: These metrics are collected per each consumer-provider pair This requirement covers NIST security controls SI-4 a.1
Category	<Functional><Security>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0020-0010	<Full>
<SATISFIES>	<ATMS Requirement>	P14.02.09-SWIM-MSG-18	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0005.1030
Requirement	The SWIM-TI Supervision shall collect the following service metrics on a Service with a Publish/Subscribe interaction pattern: - Service time - Number of Data publications

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	- Time of the last data publication - Number of failed data publications.
Title	Collection of Service Metrics for Service with P/S pattern – metrics to collect
Status	<In Progress>
Rationale	The SWIM-TI Supervision must collect service metrics in order to monitor system performance and compliance with service level agreements. This requirement covers NIST security controls SI-4 a.1
Category	<Functional><Security>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0020-0020	<Full>
<SATISFIES>	<ATMS Requirement>	P14.02.09-SWIM-MSG-17	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0005.1040
Requirement	The SWIM-TI Supervision shall monitor service metrics against configured thresholds.
Title	Monitor service metrics thresholds
Status	<In Progress>
Rationale	For safety reasons, the SWIM-TI Supervision must determine when a service metric has violated a threshold. This information is useful for improving the quality of service of the system and measuring compliance for service level agreements. This requirement covers NIST security controls SC-5 (3)
Category	<Functional><Security>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>

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Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0020-0040	<Full>
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0005.1050
Requirement	The SWIM-TI Supervision shall provide an indication when a monitored service metric violates a configured threshold.
Title	Indicate violation of monitored service metric threshold
Status	<In Progress>
Rationale	The SWIM-TI Supervision must make a service metric threshold violation known to interested entities. This requirement covers NIST security controls SC-5 (3)
Category	<Functional><Security>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0020-0040	<Full>
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
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3.4.1.5 Alarms Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.4.1.6 Logging Requirements

[IREQ]

Identifier	REQ-14.01.04-TS-0005.1220
Requirement	The SWIM-TI Supervision should log in persistent storage each change to the lifecycle status of a monitored service, where the logged information for a status change contains the following information: - Date and time of status change - Identifier for the element whose status has changed - Status before the change - Status after the change.
Title	Logging of change for service lifecycle status changes, and data to be logged
Status	<In Progress>
Rationale	The SWIM-TI Supervision needs to provide a persistent record of system events for monitored services, resources, service metric thresholds, and alarms. This event data is used for analyzing system performance, providing reports, analyzing errors, and reconstructing event history. This requirement covers NIST security control AU-2 a and SI-4 a.1.
Category	<Functional><Security>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0030-0050	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
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<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>

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<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0005.1230
Requirement	The SWIM-TI Supervision should log in persistent storage each change to the lifecycle status of a monitored resource, where the logged information for a status change contains the following information: - Date and time of status change - Identifier for the element whose status has changed - Status before the change - Status after the change.
Title	Logging of lifecycle status change for monitored resource, and data to be logged
Status	<In Progress>
Rationale	The SWIM-TI Supervision needs to provide a persistent record of system events for monitored services, resources, service metric thresholds, and alarms. This event data is used for analyzing system performance, providing reports, analyzing errors, and reconstructing event history. This requirement covers NIST security control AU-2 a and SI-4 a.1.
Category	<Functional><Security>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0030-0050	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0005.1240
Requirement	The SWIM-TI Supervision should log in persistent storage the following alarm-related events:

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	- Raising of an alarm condition for a monitored resource - Clearing of an alarm condition for a monitored resource.
Title	Logging of alarm events
Status	<In Progress>
Rationale	The SWIM-TI Supervision needs to provide a persistent record of system events for monitored services, resources, service metric thresholds, and alarms. This event data is used for analyzing system performance, providing reports, analyzing errors, and reconstructing event history. This requirement covers NIST security control AU-2 a and AU-2 d.
Category	<Functional><Security>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0020-0050	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0005.1250
Requirement	The SWIM-TI Supervision should provide the following information for each alarm event recorded in the log: - Date and time of event - Identifier for the event, where event is one of (RAISE ALARM, CLEAR ALARM) - Identifier for the alarm - Identifier for resource causing the alarm.
Title	Data to be logged for alarm event
Status	<In Progress>
Rationale	The SWIM-TI Supervision needs to provide a persistent record of system events for monitored services, resources, service metric thresholds, and alarms. This event data is used for analyzing system performance, providing reports, analyzing errors, and reconstructing event history. This requirement covers NIST security control AU-2 a.
Category	<Functional><Security>

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Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0020-0050	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0005.1260
Requirement	The SWIM-TI Supervision should log in persistent storage the following threshold-related events: - A violation of a monitored metric threshold - Clearing of a violation condition for a monitored metric threshold.
Title	Logging of service metric threshold violation and clearing events
Status	<In Progress>
Rationale	The SWIM-TI Supervision needs to provide a persistent record of system events for monitored services, resources, service metric thresholds, and alarms. This event data is used for analyzing system performance, providing reports, analyzing errors, and reconstructing event history. This requirement covers NIST security control AU-2 a and AU-2 d.
Category	<Functional><Security>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0020-0050	<Full>

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<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0005.1270
Requirement	The SWIM-TI Supervision should provide the following information for each threshold-violation event recorded in the log: - Date and time of violation - Identifier for the violated threshold - Identifier for service violating the threshold - If applicable for the service pattern, identifier of the service consumer in the producer-consumer pair associated with the violation. - Configured threshold control value - Actual value of the service metric.
Title	Data to be logged for service metric threshold violation events
Status	<In Progress>
Rationale	The SWIM-TI Supervision needs to provide a persistent record of system events for monitored services, resources, service metric thresholds, and alarms. This event data is used for analyzing system performance, providing reports, analyzing errors, and reconstructing event history. This requirement covers NIST security control AU-2 a.
Category	<Functional><Security>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0020-0050	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>

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<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0005.1280
Requirement	The SWIM-TI Supervision should provide the following information for each threshold-violation clearing event recorded in the log: - Date and time of clearing of violation - Identifier for the violated threshold - Identifier for service violating the threshold - If applicable for the service pattern, identifier of the service consumer in the producer-consumer pair associated with the violation. - Configured threshold control value - Actual value of service metric.
Title	Data to be logged for service metric threshold clearing events
Status	<In Progress>
Rationale	The SWIM-TI Supervision needs to provide a persistent record of system events for monitored services, resources, service metric thresholds, and alarms. This event data is used for analyzing system performance, providing reports, analyzing errors, and reconstructing event history. This requirement covers NIST security control AU-2 a.
Category	<Functional><Security>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0020-0050	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0005.1310
Requirement	The SWIM-TI Supervision should log in persistent storage an error that is

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	detected in launching a service.
Title	Logging of service launch errors
Status	<In Progress>
Rationale	The SWIM-TI Supervision needs to provide a persistent record of system events for monitored services, resources, service metric thresholds, and alarms. This event data is used for analyzing system performance, providing reports, analyzing errors, and reconstructing event history.
Category	<Functional>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0040-0060	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0005.1320
Requirement	The SWIM-TI Supervision should provide the following information for each launch error recorded in the log: - Date and time of error - Identifier for the error - Identifier for service for which the launch was attempted.
Title	Data to be logged for service launch error
Status	<In Progress>
Rationale	The SWIM-TI Supervision needs to provide a persistent record of system events for monitored services, resources, service metric thresholds, and alarms. This event data is used for analyzing system performance, providing reports, analyzing errors, and reconstructing event history.
Category	<Functional>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>

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Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0040-0060	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0005.1330
Requirement	The SWIM-TI Supervision should log in persistent storage an error that is detected in stopping a service.
Title	Log error detected in stopping a service
Status	<In Progress>
Rationale	The SWIM-TI Supervision needs to provide a persistent record of system events for monitored services, resources, service metric thresholds, and alarms. This event data is used for analyzing system performance, providing reports, analyzing errors, and reconstructing event history.
Category	<Functional>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0040-0110	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

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[IREQ]

Identifier	REQ-14.01.04-TS-0005.1340
Requirement	The SWIM-TI Supervision should provide the following information for each error in stopping a service that is recorded in the log: - Date and time of error - Identifier for the error - Identifier for service for which the stop operation was attempted.
Title	Data to be logged for error in stopping a service
Status	<In Progress>
Rationale	The SWIM-TI Supervision needs to provide a persistent record of system events for monitored services, resources, service metric thresholds, and alarms. This event data is used for analyzing system performance, providing reports, analyzing errors, and reconstructing event history.
Category	<Functional>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0040-0110	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0005.1350
Requirement	The SWIM-TI Supervision Service Control function should log in persistent storage an error that is detected during an attempt to start a service that is in the STOPPED state.
Title	Logging of error detected in service restart
Status	<In Progress>
Rationale	The SWIM-TI Supervision needs to provide a persistent record of system events for monitored services, resources, service metric thresholds, and alarms. This event data is used for analyzing system performance, providing reports, analyzing errors, and reconstructing event history.
Category	<Functional>
Validation Method	

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Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0040-0160	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0005.1360
Requirement	The SWIM-TI Supervision should provide the following information for each error in starting a previously-stopped service that is recorded in the log: - Date and time of error - Identifier for the error - Identifier for service for which the start operation was attempted.
Title	Data to be logged for service restart error
Status	<In Progress>
Rationale	The SWIM-TI Supervision needs to provide a persistent record of system events for monitored services, resources, service metric thresholds, and alarms. This event data is used for analyzing system performance, providing reports, analyzing errors, and reconstructing event history.
Category	<Functional>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0040-0160	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A

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<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0005.1390
Requirement	The SWIM-TI Supervision should log in persistent storage a change to stored service metric threshold information, where the log data contains the following information: - Date and time of change event - Content of change data.
Title	Logging of change to service metric threshold information and data to be logged for this change
Status	<In Progress>
Rationale	The SWIM-TI Supervision needs to provide a persistent record of system events for monitored services, resources, service metric thresholds, and alarms. This event data is used for analyzing system performance, providing reports, analyzing errors, and reconstructing event history.
Category	<Functional>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0020-0030	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0005.1410

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Requirement	The SWIM-TI Supervision should retain logged information about status lifecycle changes in persistent storage for a configurable number of days.
Title	Retain lifecycle status change log data for configured period
Status	<In Progress>
Rationale	The SWIM-TI Supervision needs to provide a persistent record of system events for monitored services, resources, service metric thresholds, and alarms. This event data is used for analyzing system performance, providing reports, analyzing errors, and reconstructing event history. This requirement covers NIST security controls AU-2 a and AU-11.
Category	<Functional><Security>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0020-0030	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0005.1430
Requirement	The SWIM-TI Supervision should retain logged information about metrics threshold configuration changes in persistent storage for a configurable number of days.
Title	Retain service metrics threshold configuration change log data for configured period
Status	<In Progress>
Rationale	The SWIM-TI Supervision needs to provide a persistent record of system events for monitored services, resources, service metric thresholds, and alarms. This event data is used for analyzing system performance, providing reports, analyzing errors, and reconstructing event history. This requirement covers NIST security control AU-2 a.
Category	<Functional><Security>
Validation Method	

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Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0020-0030	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
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<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0005.1440
Requirement	SWIM-TI Supervision should retain logged information about alarm events for a configurable number of days.
Title	Retain alarm event log data for configured period
Status	<In Progress>
Rationale	The SWIM-TI Supervision needs to provide a persistent record of system events for monitored services, resources, service metric thresholds, and alarms. This event data is used for analyzing system performance, providing reports, analyzing errors, and reconstructing event history. This requirement covers NIST security controls AU-2 a and AU-11.
Category	<Functional><Security>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0050-0212	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A

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<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0005.1450
Requirement	SWIM-TI Supervision should retain logged information about metrics threshold violations for a configurable number of days.
Title	Retain service metrics threshold violation log data for configured period
Status	<In Progress>
Rationale	The SWIM-TI Supervision needs to provide a persistent record of system events for monitored services, resources, service metric thresholds, and alarms. This event data is used for analyzing system performance, providing reports, analyzing errors, and reconstructing event history. This requirement covers NIST security controls AU-2 a and AU-11.
Category	<Functional><Security>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0050-0212	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0005.1460
Requirement	The SWIM-TI Supervision should retain logged information about the clearing of metrics threshold violations for a configurable number of days.
Title	Retain service metrics threshold violation clearing log data for configured

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	period
Status	<In Progress>
Rationale	The SWIM-TI Supervision needs to provide a persistent record of system events for monitored services, resources, service metric thresholds, and alarms. This event data is used for analyzing system performance, providing reports, analyzing errors, and reconstructing event history.
Category	<Functional>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0050-0212	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0005.1471
Requirement	The SWIM-TI Supervision should retain logged metrics data in persistent storage for a configurable number of days, where the metrics have been collected as set forth in REQ-14.01.04-TS-0005.1020 for SWIM Enabling Services and SWIM Services with a Request/Response interaction pattern.
Title	Retain Request/Response service metrics for configured period
Status	<In Progress>
Rationale	The SWIM-TI Supervision needs to provide a persistent record of system events for monitored services, resources, service metric thresholds, and alarms. This event data is used for analyzing system performance, providing reports, analyzing errors, and reconstructing event history.
Category	<Functional>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>

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Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0050-0210	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0005.1481
Requirement	The SWIM-TI Supervision should retain logged metrics data in persistent storage for a configurable number of days, where the metrics have been collected as set forth in REQ-14.01.04-TS-0005.1030 for SWIM Enabling Services and SWIM Services with a Publish/Subscribe interaction pattern.
Title	Retain Publish/Subscribe service metrics for configured period
Status	<In Progress>
Rationale	The SWIM-TI Supervision needs to provide a persistent record of system events for monitored services, resources, service metric thresholds, and alarms. This event data is used for analyzing system performance, providing reports, analyzing errors, and reconstructing event history.
Category	<Functional>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0050-0211	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

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[IREQ]

Identifier	REQ-14.01.04-TS-0005.1510
Requirement	The SWIM-TI Supervision should initiate archival of log data that is older than the number of days specified by configuration information.
Title	Initiate log data archival at end of retention period
Status	<In Progress>
Rationale	The SWIM-TI Supervision needs to have an archival function available to manage the log content and keep the amount of retained log data within the storage allocation limit. This requirement covers NIST security control AU-11.
Category	<Functional><Security>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0050-0210	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

3.4.1.7 Statistical Information and Reports Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.4.1.8 Configuration Information Management Requirements

[IREQ]

Identifier	REQ-14.01.04-TS-0005.1660
Requirement	The SWIM-TI Supervision should allocate persistent storage for service configuration information.

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Title	Storage allocation for service configuration information
Status	<In Progress>
Rationale	Stored configuration information is needed for SWIM-TI Supervision service management. The Supervision must ensure that adequate space is available for storing this information. This requirement covers NIST security control AU-4 and CM-2.
Category	<Functional><Security>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0030-0010	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0005.1670
Requirement	The SWIM-TI Supervision should allocate persistent storage for logging of accepted changes to stored configuration information.
Title	Storage allocation for logging information on configuration changes
Status	<In Progress>
Rationale	The SWIM-TI Supervision must be able to store log data about events of importance to the system and its processing history. The Supervision must ensure that adequate space is available for storing this information. This requirement covers NIST security control AU-4 and CM-3 c.
Category	<Functional><Security>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>

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Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0030-0010	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0005.1680
Requirement	The SWIM-TI Supervision should allocate persistent storage for logging of service status changes.
Title	Storage allocation for logging service lifecycle status changes
Status	<In Progress>
Rationale	The SWIM-TI Supervision must be able to store log data about events of importance to the system and its processing history. The Supervision must ensure that adequate space is available for storing this information. This requirement covers NIST security control AU-4.
Category	<Functional><Security>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0030-0050	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

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[IREQ]

Identifier	REQ-14.01.04-TS-0005.1690
Requirement	The SWIM-TI Supervision should allocate persistent storage for logging of service metrics.
Title	Storage allocation for logging service metrics
Status	<In Progress>
Rationale	The SWIM-TI Supervision must be able to store log data about events of importance to the system and its processing history. The Supervision must ensure that adequate space is available for storing this information. This requirement covers NIST security control AU-4.
Category	<Functional><Security>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0020-0010	<Full>
<SATISFIES>	<ATMS Requirement>	P14.02.09-SWIM-MSG-18	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0005.1700
Requirement	The SWIM-TI Supervision should allocate persistent storage for the logging of alarm status events.
Title	Storage allocation for logging alarm status events
Status	<In Progress>
Rationale	The SWIM-TI Supervision must be able to store log data about events of importance to the system and its processing history. The Supervision must ensure that adequate space is available for storing this information. This requirement covers NIST security control AU-4.
Category	<Functional><Security>
Validation Method	

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Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0040-0070	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0005.1710
Requirement	The SWIM-TI Supervision should allocate persistent storage for logging of monitored threshold events (violation, clearing of violation).
Title	Storage allocation for logging monitored service metrics threshold events
Status	<In Progress>
Rationale	The SWIM-TI Supervision must be able to store log data about events of importance to the system and its processing history. The Supervision must ensure that adequate space is available for storing this information. This requirement covers NIST security control AU-4.
Category	<Functional><Security>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0020-0050	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A

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<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
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<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0005.1720
Requirement	The SWIM-TI Supervision should allocate persistent storage for the logging of successful process control events.
Title	Storage allocation for logging process control success events
Status	<In Progress>
Rationale	The SWIM-TI Supervision must be able to store log data about events of importance to the system and its processing history. The Supervision must ensure that adequate space is available for storing this information.
Category	<Functional>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0040-0070	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0005.1740
Requirement	The SWIM-TI Supervision at each SWIM Node should use a stored configuration to determine the following: - The SWIM Node hardware resources to be monitored - The SWIM Node software (process) resources to be monitored - The SWIM Node data communications resources to be monitored.
Title	Use of stored configuration to determine resources to monitor
Status	<In Progress>

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Rationale	The local SWIM Node resources need to be monitored to ensure that the status of the SWIM Technical Infrastructure is up-to-date. The SWIM-TI Supervision is dependent on configured hardware, software process (including operating system features), and data communications platform, as well as on a set of services that are needed for each node in order for SWIM-TI Supervision to provide the required capabilities at that node. Local Supervision must monitor the health of each of these entities and provide status to the user upon request. This requirement covers NIST security controls SI-4 a.1
Category	<Functional><Security>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0030-0010	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0005.1750
Requirement	The SWIM-TI Supervision at each SWIM Node should use a stored configuration to determine the following: - The SWIM Services to be monitored - The SWIM Enabling Services to be monitored.
Title	Use of stored configuration to determine services to monitor
Status	<In Progress>
Rationale	The services at the local SWIM Node need to be monitored to ensure that the status of the SWIM Technical Infrastructure is up-to-date. Local Supervision must monitor the health of these services for keeping the overall view of the system. This requirement covers NIST security controls SI-4 a.1
Category	<Functional><Security>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>

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Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0030-0050	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0005.1820
Requirement	The SWIM-TI Supervision at each SWIM Node should use a stored configuration to determine the interaction pattern for each configured service, where the interaction pattern is one of the following: - Request/Response - Publish/Subscribe - Both Request/Response and Publish/Subscribe - Other.
Title	Use of stored configuration to determine interaction pattern for Publish/Subscribe service
Status	<In Progress>
Rationale	The SWIM-TI Supervision needs to determine the interaction pattern for a service in order to provide monitoring capabilities related to that pattern. For example, Supervision will collect different metrics for a Request/Response service than for a Publish/Subscribe service.
Category	<Functional>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0030-0090	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A

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<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0005.1910
Requirement	The SWIM-TI Supervision should use stored configuration information to determine the number of days to retain lifecycle status log data.
Title	Retention period for lifecycle status
Status	<In Progress>
Rationale	In order to manage the storage of log data and keep it from growing past the allocated limits, the Supervision must have configuration information that tells it how long to retain the log data in storage that is readily accessible to the local SWIM Node. Log data must be retained for a configurable time period in order to support the reporting, system history, and system analysis functions.
Category	<Functional>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0050-0210	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0005.1920
Requirement	The SWIM-TI Supervision should use stored configuration information to determine the number of days to retain alarm event log data.

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Title	Retention period for alarms
Status	<In Progress>
Rationale	In order to manage the storage of log data and keep it from growing past the allocated limits, the Supervision must have configuration information that tells it how long to retain the log data in storage that is readily accessible to the local SWIM Node. Log data must be retained for a configurable time period in order to support the reporting, system history, and system analysis functions.
Category	<Functional>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0050-0210	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0005.1930
Requirement	The SWIM-TI Supervision should use stored configuration information to determine the number of days to retain service metrics log data.
Title	Retention period for service metrics
Status	<In Progress>
Rationale	In order to manage the storage of log data and keep it from growing past the allocated limits, the Supervision must have configuration information that tells it how long to retain the log data in storage that is readily accessible to the local SWIM Node. Log data must be retained for a configurable time period in order to support the reporting, system history, and system analysis functions.
Category	<Functional>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>

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Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0050-0210	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0005.1940
Requirement	The SWIM-TI Supervision should use stored configuration information to determine the number of days to retain metrics threshold violation and clearing event log data.
Title	Retention period for service metrics threshold events
Status	<In Progress>
Rationale	In order to manage the storage of log data and keep it from growing past the allocated limits, the Supervision must have configuration information that tells it how long to retain the log data in storage that is readily accessible to the local SWIM Node. Log data must be retained for a configurable time period in order to support the reporting, system history, and system analysis functions.
Category	<Functional>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0050-0210	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>

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<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0005.1950
Requirement	The SWIM-TI Supervision should use stored configuration information to determine the SWIM-TI capabilities that are to be operational for the local SWIM Node.
Title	Use of configuration information for start of SWIM capabilities
Status	<In Progress>
Rationale	The SWIM-TI Supervision needs to be capable of controlling the SWIM capabilities in the SWIM Technical Infrastructure. This control function needs to have configuration information to identify what these necessary capabilities are.
Category	<Functional>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<SLA><Governance><Function/Behaviour>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.09-SWIM-SPV-1	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

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3.4.2 Adaptability

This section includes adaptability requirements as documented in ISO/IEC 25010:2011. In particular, requirements included in this section refer to adaptability sub-characteristic of portability NFRs.

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

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3.4.3 Performance Characteristics

This section includes performance efficiency requirements as documented in ISO/IEC 25010:2011. The structure of the section is in accordance with performance efficiency NFR sub-characteristics described in ISO/IEC 25010:2011: (§3.4.3.1) time behaviour, (§3.4.3.2) resource utilization and (§3.4.3.3) capacity.

3.4.3.1 Time behaviour Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.4.3.2 Resource utilization Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.4.3.3 Capacity Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

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3.4.4 Safety & Security

This section includes security requirements as documented in ISO/IEC 25010:2011. The structure of the section is in accordance with security NFR sub-characteristics described in ISO/IEC 25010:2011: (§3.4.4.1) confidentiality, (§3.4.4.2) integrity, (§3.4.4.3) non-repudiation, (§3.4.4.4) accountability and (§3.4.4.5) authenticity. Furthermore, according to SJU guidelines, a dedicated subsection (§3.4.4.6) is provided for safety requirements.

3.4.4.1 Confidentiality Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.4.4.2 Integrity Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.4.4.3 Non-repudiation Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.4.4.4 Accountability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.4.4.5 Authenticity Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.4.4.6 Safety Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

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3.4.5 Maintainability

This section includes maintainability requirements as documented in ISO/IEC 25010:2011. The structure of the section is in accordance with maintainability NFR sub-characteristics described in ISO/IEC 25010:2011: (§3.4.5.1) modularity, (§3.4.5.2) reusability, (§3.4.5.3) analysability, (§3.4.5.4) modifiability and (§3.4.5.5) testability.

3.4.5.1 Modularity Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.4.5.2 Reusability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.4.5.3 Analysability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.4.5.4 Modifiability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.4.5.5 Testability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

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3.4.6 Reliability

This section includes reliability requirements as documented in ISO/IEC 25010:2011. The structure of the section is in accordance with reliability NFR sub-characteristics described in ISO/IEC 25010:2011: (§3.4.6.1) maturity, (§3.4.6.2) availability, (§3.4.6.3) fault tolerance and (§3.4.6.4) recoverability.

3.4.6.1 Maturity Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.4.6.2 Availability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.4.6.3 Fault tolerance Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.4.6.4 Recoverability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

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3.4.7 Internal Data Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

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3.4.8 Design and Construction Constraints

This section includes compatibility and portability requirements as documented in ISO/IEC 25010:2011. The structure of the section is in accordance with sub-characteristics of both compatibility and portability NFR described in ISO/IEC 25010:2011: (§3.4.8.1) co-existence and (§3.4.8.2) interoperability compatibility NFR sub-characteristics, (§3.4.8.3) installability and (§3.4.8.4) replaceability portability NFR sub-characteristics.

3.4.8.1 Co-existence Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.4.8.2 Interoperability Requirements

Refer to interoperability requirements in §3.1.8.

3.4.8.3 Installability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.4.8.4 Replaceability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

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3.4.9 Interface Requirements

This section includes interface requirements applicable to the SWIM-TI Supervision.

[IREQ]

Identifier	REQ-14.01.04-TS-0905.0200
Requirement	The SWIM-TI Supervision should generate a report in a human-readable format as selected by the authorized requester, where the allowed format choices are the following: - ISO/IEC 15445(html 4.01) - ISO 32000-1/ISO 19005-1(pdf).
Title	Reports human readability
Status	<In Progress>
Rationale	The reports need to be generated in a standardized and manageable format so the output will be readable by the receiver.
Category	<Functional>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0050-0050	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0905.0210
Requirement	The SWIM-TI Supervision should provide images that are part of a report in the format selected by the report requester, where the allowed format choices are the following: - Portable Network Graphics, ISO/ IEC 15948:2003 (PNG) - Joint Photographic Experts Group, ISO/IEC 10918-1 (JPEG).
Title	Reports image format
Status	<In Progress>
Rationale	The reports need to be generated in a standardized and manageable format

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	for performing analysis and data mining.
Category	<Functional>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0050-0050	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0905.0220
Requirement	The SWIM-TI Supervision should generate a report in a machine readable format suitable for importing into spreadsheets and other automated processing software, as selected by the authorized requester, where the allowed format choices are the following: - Comma-separated values format - Tab-separated values format - Space-delimited text format - Open Document Format (ODF).
Title	Reports machine readability
Status	<In Progress>
Rationale	The reports need to be generated in a standardized and manageable format for performing analysis and data mining.
Category	<Functional>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

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Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0050-0050	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0905.0010
Requirement	SWIM-TI SUPERVISION shall provide an interface as services provided and consumed to the ATM System Supervision
Title	System Supervision Interface Definition
Status	<In Progress>
Rationale	System Supervision is involved in monitoring and controlling processes, applications, hardware and services of a system. SWIM-TI SUPERVISION do the same for SWIM nodes. System Supervision, if present, could provide supervision data to the SWIM-TI SUPERVISION or accept requests from it. It could be useful inside SESAR Project to standardize such an interface (at least e minimum profile).
Category	<Functional><Interface>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0050-0050	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05a	<Full>
<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

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[IREQ]

Identifier	REQ-14.01.04-TS-0905.0020
Requirement	SWIM-TI SUPERVISION shall provide an interface as services provided and consumed to other SWIM-TI SUPERVISION distributed instances
Title	SWIM-TI SUPERVISION Interfaces Definition
Status	<In Progress>
Rationale	In order to enable the information exchange between SPV Entities an interface shall be defined. Typical case is information exchange between SPV Entities made from different companies.
Category	<Functional><Interface>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable>

[IREQ Trace]

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<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
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[IREQ]

Identifier	REQ-14.01.04-TS-0905.0030
Requirement	SWIM-TI SUPERVISION shall provide an interface as services provided and consumed to the external world
Title	External Interfaces Definition
Status	<In Progress>
Rationale	In order to ease integration with non-SWIM-TI Supervision data consumers (e.g. legacy applications) a definition for an interface is needed.
Category	<Functional><Interface>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>

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Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0905.0050
Requirement	SWIM-TI SUPERVISION-System Supervision Interface shall provide operations for querying status from the System Supervision.
Title	System Supervision Interface Status Queries
Status	<In Progress>
Rationale	SWIM-TI Supervision shall monitor status of supervised entities. If System Supervision is present it could provide those status to the SWIM-TI Supervision.
Category	<Functional><Interface>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

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[IREQ]

Identifier	REQ-14.01.04-TS-0905.0060
Requirement	SWIM-TI SUPERVISION-System Supervision Interface shall provide operations for querying statistics from the System Supervision.
Title	System Supervision Interface Statistics Queries
Status	<In Progress>
Rationale	SWIM-TI Supervision shall calculate statistics. If System Supervision is present it could provide those statistics to the SWIM-TI Supervision.
Category	<Functional><Interface>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0050-0050	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
<SATISFIES>	<Enabler>	SWIM-SUPT-06b	<Partial>
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<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0905.0070
Requirement	SWIM-TI SUPERVISION-System Supervision Interface shall provide operations for querying status alerts from the System Supervision.
Title	System Supervision Interface Status Alerts Queries
Status	<In Progress>
Rationale	SWIM-TI Supervision shall detect status alerts. If System Supervision is present it could provide those status alerts to the SWIM-TI Supervision. This requirement covers NIST security controls SI-4 a.1
Category	<Functional><Interface><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>

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Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	P14.02.03-0050-0050	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
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<SATISFIES>	<Enabler>	SWIM-APS-05a	<Full>
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0905.0080
Requirement	SWIM-TI SUPERVISION-System Supervision Interface shall provide operations for querying SLA alerts from the System Supervision.
Title	System Supervision Interface Status Alerts Queries
Status	<In Progress>
Rationale	SWIM-TI Supervision shall calculate SLA alerts. If System Supervision is present it could provide those SLA alerts to the SWIM-TI Supervision. This requirement covers NIST security controls SI-5 b
Category	<Functional><Interface><Security>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
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<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
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<SATISFIES>	<Enabler>	SWIM-INFR-05b	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0905.0100
Requirement	External Interface shall provide operations for querying metrics from the SWIM-TI SUPERVISION.
Title	External Systems Interface Querying methods
Status	<In Progress>
Rationale	External Systems could be interested in metrics from the SWIM-TI SUPERVISION. SWIM-TI Supervision could provide those metrics to the external systems via External Interface. It remains to be specified the set of data to make available to the external system.
Category	<Functional><Interface>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

[IREQ]

Identifier	REQ-14.01.04-TS-0905.0160
Requirement	All SWIM-TI Supervision interfaces shall provide an operation, or a set of operations, to query the current values of all kind of supervised data of a SWIM-TI Supervision entity.
Title	SWIM-TI Supervision interfaces - On demand operational mode
Status	<In Progress>
Rationale	In order to improve flexible communication SWIM-TI Supervision interface shall permit different way of interrogation for data (data is status, sla alerts, status alerts, statistics).
Category	<Functional><Interface>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<BP Core><YP Advanced>

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Domain of interest	<ICD>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Functional block>	SPV	N/A
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<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
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[IREQ]

Identifier	REQ-14.01.04-TS-0905.0170
Requirement	All SWIM-TI Supervision interfaces shall provide an operation, or a set of operations, to enable a SWIM-TI Supervision entity to periodically get refresh of supervised data values.
Title	SWIM-TI Supervision interfaces - Continuous operational mode
Status	<In Progress>
Rationale	In order to improve flexible communication SWIM-TI Supervision interface shall permit different way of interrogation for data.
Category	<Functional><Interface>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
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<SATISFIES>	<Enabler>	SWIM-INFR-01a	<Full>

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<SATISFIES>	<Enabler>	SWIM-INFR-01b	<Full>
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[IREQ]

Identifier	REQ-14.01.04-TS-0905.0180
Requirement	All SWIM-TI Supervision interfaces shall provide an operation, or a set of operations, to enable a SWIM-TI Supervision entity to publish/subscribe last N samples of supervised data values. N > 0
Title	SWIM-TI Supervision interfaces - Continuous operational mode
Status	<In Progress>
Rationale	In order to improve flexible communication SWIM-TI Supervision interface shall permit different way of interrogation for data.
Category	<Functional><Interface>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<ICD>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
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[IREQ]

Identifier	REQ-14.01.04-TS-0905.0190
Requirement	SWIM-TI Supervision Interfaces shall support the use of standard formats for data exchange.
Title	SWIM-TI Supervision Interfaces - use of standards formats
Status	<In Progress>
Rationale	Data made available through the SWIM-TI Supervision Interfaces shall be packed using well known standards (e.g. xml).
Category	<Functional><Interface>
Validation Method	
Verification Method	<Review of Design><Test>
Profile Part	<BP Core><YP Advanced>
Domain of interest	<ICD>

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Point of view	<SWIM-TI provider>
Roles	<Service provider><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<Yes>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<APPLIES_TO>	<Operational Focus Area>	ENB02.01.01	N/A
<ALLOCATED_TO>	<Project>	14.02.03	N/A
<ALLOCATED_TO>	<Functional block>	SPV	N/A
<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
<SATISFIES>	<Enabler>	GGSWIM-10c	<Partial>
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3.5 Recording Functional and non-Functional Requirements

In this chapter functional and non-functional requirements concerning the SWIM-TI Recording are provided. These requirements have been specified according to SWIM-TI Technical Use Case and latest TAD.

3.5.1 Capabilities

This section provides the functional requirements of the SWIM-TI Recording derived from TAD functional and technical views.

[IREQ]

Identifier	REQ-14.01.04-TS-0004.0001
Requirement	The SWIM-TI Recording shall record the following information of a communication session in a data exchange between SWIM Nodes: - Time Stamp - Communication Session Context - Document Payload
Title	SWIM-TI Recording capability
Status	<Validated>
Rationale	For safety and recovery reasons all the operation executed needs to be stored in the SWIM Technical Infrastructure. Note: The SWIM-TI Recording will only record the data exchange via the SWIM Interface. This requirement covers NIST security control AU-10 and SC-7.
Category	<Functional><Security>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Security+>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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[IREQ]

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Identifier	REQ-14.01.04-TS-0004.0050
Requirement	The SWIM-TI Recording shall retain data which has been collected as set forth in REQ-14.01.04-TS-0004.0001 for a configurable number of days.
Title	Configurable Data
Status	<Validated>
Rationale	Data needs to be kept for a configurable number of days. This requirement covers NIST security control AU-4.
Category	<Functional><Security>
Validation Method	
Verification Method	<Test>
Profile Part	<BP Core><YP Security+>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Functional block>	Blue Profile	N/A
<ALLOCATED_TO>	<Functional block>	Yellow Profile	N/A
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3.5.2 Adaptability

This section includes adaptability requirements as documented in ISO/IEC 25010:2011. In particular, requirements included in this section refer to adaptability sub-characteristic of portability NFRs.

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

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3.5.3 Performance Characteristics

This section includes performance efficiency requirements as documented in ISO/IEC 25010:2011. The structure of the section is in accordance with performance efficiency NFR sub-characteristics described in ISO/IEC 25010:2011: (§3.5.3.1) time behaviour, (§3.5.3.2) resource utilization and (§3.5.3.3) capacity.

3.5.3.1 Time behaviour Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.5.3.2 Resource utilization Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.5.3.3 Capacity Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

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3.5.4 Safety & Security

This section includes security requirements as documented in ISO/IEC 25010:2011. The structure of the section is in accordance with security NFR sub-characteristics described in ISO/IEC 25010:2011: (§3.5.4.1) confidentiality, (§3.5.4.2) integrity, (§3.5.4.3) non-repudiation, (§3.5.4.4) accountability and (§3.5.4.5) authenticity. Furthermore, according to SJU guidelines, a dedicated subsection (§3.5.4.6) is provided for safety requirements.

3.5.4.1 Confidentiality Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.5.4.2 Integrity Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.5.4.3 Non-repudiation Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.5.4.4 Accountability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.5.4.5 Authenticity Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.5.4.6 Safety Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

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3.5.5 Maintainability

This section includes maintainability requirements as documented in ISO/IEC 25010:2011. The structure of the section is in accordance with maintainability NFR sub-characteristics described in ISO/IEC 25010:2011: (§3.5.5.1) modularity, (§3.5.5.2) reusability, (§3.5.5.3) analysability, (§3.5.5.4) modifiability and (§3.5.5.5) testability.

3.5.5.1 Modularity Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.5.5.2 Reusability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.5.5.3 Analysability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.5.5.4 Modifiability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.5.5.5 Testability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

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3.5.6 Reliability

This section includes reliability requirements as documented in ISO/IEC 25010:2011. The structure of the section is in accordance with reliability NFR sub-characteristics described in ISO/IEC 25010:2011: (§3.5.6.1) maturity, (§3.5.6.2) availability, (§3.5.6.3) fault tolerance and (§3.5.6.4) recoverability.

3.5.6.1 Maturity Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.5.6.2 Availability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.5.6.3 Fault tolerance Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.5.6.4 Recoverability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

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3.5.7 Internal Data Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

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3.5.8 Design and Construction Constraints

This section includes compatibility and portability requirements as documented in ISO/IEC 25010:2011. The structure of the section is in accordance with sub-characteristics of both compatibility and portability NFR described in ISO/IEC 25010:2011: (§3.5.8.1) co-existence and (§3.5.8.2) interoperability compatibility NFR sub-characteristics, (§3.5.8.3) installability and (§3.5.8.4) replaceability portability NFR sub-characteristics.

[IREQ]

Identifier	REQ-14.01.04-TS-0804.0001
Requirement	The SWIM-TI Recording shall be implemented using COTS products.
Title	SWIM-TI Recording Implementation
Status	<Validated>
Rationale	SWIM Technical Infrastructure shall be based upon well-recognized or emerging IT standard that are supported by mainstream IT COTS product in the market, that only require little or no further development/customisation.
Category	<Design>
Validation Method	
Verification Method	<Review of Design>
Profile Part	<BP Core><YP Core>
Domain of interest	<Governance>
Point of view	<SWIM-TI provider>
Roles	<Service provider><Service consumer><Subscriber><Publisher><Publication consumer><Subscription handler><Publication mediator>
Selfstanding set	<Not applicable>
Conformance	<No>
High Level	<No>
Testability	<Conformance testable>

[IREQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<ALLOCATED_TO>	<Functional block>	REC	N/A
<ALLOCATED_TO>	<Project>	14.02.09	N/A
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<SATISFIES>	<Enabler>	ER APP ATC 160	<Full>

3.5.8.1 Co-existence Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.5.8.2 Interoperability Requirements

Refer to interoperability requirements in §3.1.8.

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3.5.8.3 Installability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

3.5.8.4 Replaceability Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

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3.5.9 Interface Requirements

Requirements concerning this category have not been identified during SESAR 1 programme. This requirement category may be further investigated according to the evolution of the SWIM-TI Technical Specifications.

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4 Assumptions

None.

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5.1 Use of copyright / patent material /classified material

N/A.

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5.1.1 Classified Material

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Appendix A Concrete Cases Of PS-MEP Services using AMQP and WS-N

This appendix aims at documenting how available technologies and interface bindings available in PP and YP TSs may be or are used in concrete cases to implement the Publish/Subscribe Message Exchange Pattern.

It is not the aim of this appendix to provide an exhaustive list of possible variants for deploying Pub/Sub MEP. This would be impossible, given the number of possibilities and the limited extent of this sub-activity. Instead, some illustrative examples have been described, still providing a good overview.

As a result, the appendix describes two examples[1] of how publish/subscribe deployment MEP is realised in concrete scenarios:

- operational solution provided by EAD B2B, as an example for using WS-N technologies,
- operational solution provided by NM B2B, as an example for using WS-* + AMQP 1.0.

A.1 Generic Considerations

From a high level perspective the messaging functionality that provides MEPs that fall under the notion Publish/Subscribe can be decomposed into 4 functions:

- Subscription Management
- Publication Registration Management
- Message Distribution
- Administration

The Subscription Management function deals with the life cycle of the interest that a subscriber expresses to be informed about particular publications or not. This function allows for instance:

- for a subscriber to create a subscription, pause a subscription, list a subscription, view a subscription, update a subscription and delete a subscription.
- several variants exists to formulate the interest of a particular subscription, amongst which one can find topic and type.

The Publication Registration Management function deals with the life cycle of the interest that a publisher expresses to perform particular publications.

The Message Distribution function deals with the delivery of the messages that contain the publications from the publisher to the publication consumers.

- two patterns can be distinguished: push and pull.

The Administration function deals with the management aspects of the solution such as configuration and monitoring[2].

[1] A third example, based on AMQP 0-9-1, is presented in an annex of the Purple Profile technical specification.
[2] Configuration and monitoring requirements are described in the current TS as part of the Supervision specifications.

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A.2 EAD B2B as an example of WS-N based Publish/Subscribe

A.2.1 Introduction

The deployment described here is based on the operational solution provided by EAD B2B (AIMSL) which is intended to be fully aligned with the YP specification. Note, that the EAD B2B solution has been deployed before the YP specification was elaborated.[3]

The solution is based the OASIS WS-BrokeredNotification specifications to which a number of extensions have been added. The broker implementation is collocated and part of the EAD system deployment. The EAD system is the only publisher; there is no access for external publishers.

Despite the presence of extensions, the solution is meant to be usable by a client (subscriber, publication consumer (in WS-N terminology: notification consumer)) that implements the OASIS WS-Notification specifications only.

Authentication is based on the Web Service Security: SOAP Message Security 1.0 (WS-Security 2004) combined with Web Services Security: X.509 Certificate Token Profile 1.0 (March 2004), and the established identity is used for authorisation.

A.2.2 Subscription Management

The WS-N specification includes the Subscription Management in its scope.

Within the flexibility given by the WS-N, the Subscription Management functions of the EAD B2B solution is defined as follows:

- support of operations
  - Subscribe (from NotificationBroker interface),
  - Unsubscribe (from SubscriptionManager interface),
  - Renew (from SubscriptionManager interface).
- no support of PausableSubscriptionManager operations PauseSubscription, ResumeSubscription.

In addition to the functionality of the Subscription Management in the WS-N specification, the Subscription Management for the EAD B2B, also provides additional functionality by implementing following custom operations (these operations are not extensions of the standard, but they are separate requests besides WS-N (even if some type definitions of the standard are used)):

- GetAllTopics operation to retrieve a list of existing topics
- GetAllSubscriptions operation to retrieve a list of topics that an identity is subscribed to
- RemoveAllSubscriptions operation to remove a set of subscriptions of an identity

Binding:

The Subscription Management function is instantiated on a SOAP1.1/SOAP1.2 - HTTP/1.1- TCP - IPv4 based binding, according to following YP 3.0 requirements:

- REQ-14.01.04-TS-0901.0307
- REQ-14.01.04-TS-0901.0309

[3] The EAD B2B functionality is exposed over 2 Web Services stacks: one based on SOAP and one on a REST-style. A binding of WS-N over a REST-style is not defined, hence not usable/used in this document.

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The service and the operations supported by the service are formalised through a WSDL 1.1 and accompanying XSD. All the operations use the MEP SRR (Synchronous Request Reply).

Part of the service and operations are based on the OASIS WS-Notification specifications and part of the service and operations are based on specific extension for EAD B2B.

A.2.3 Publication Registration Management

There are no interoperability requirements with external stakeholders for the Publication Registration interface.

The Publication Registration Management for the EAD B2B is specific for the EAD B2B. Since AIMSL is deployed in a closed restricted environment, there is no publisher registration implemented, all the publishers (EAD subsystems) just need to know the correct internal endpoint URL.

A.2.4 Message Distribution

A.2.4.1 Introduction

At the time of writing pull message distribution is supported by the solution.

A push message distribution is anticipated but not yet implemented.

The WS-Notification specifications do not contain a mechanism to provide transport guarantees nor do they mandate a specific technology to provide such transport guarantees.

Optionally, if such transport guarantees are required, the EAD B2B solution defines an application level acknowledgement message.

A.2.4.2 Pull Message Distribution

Within the flexibility given by the WS-N, the Pull Message Distribution of this solution is defined as follows:

- support of the operations CreatePullPoint, GetMessages, DestroyPullPoint

Binding:

The Message Distribution function is instantiated on a SOAP1.1/SOAP1.2 - HTTP/1.1- - TCP - IPv4 based binding, according to following YP 3.0 requirements:

- REQ-14.01.04-TS-0901.0307
- REQ-14.01.04-TS-0901.0309

The service and the operations supported by the service are formalised through a WSDL 1.1 and accompanying XSD. All the operations use the MEP SRR (Synchronous Request Reply).

Part of the service and operations are based on the OASIS WS-Notification specifications and part of the service and operations are based on specific extension for EAD B2B. One of the extensions is the above mentioned possibility for application level acknowledgement messages.

A.2.5 Administration

There are no interoperability requirements with external stakeholders for the administration interface.

The administration interface is GUI based.

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The GUI allows to:

- browse topics
- browse/delete subscriptions
- browse/delete pullpoints

A.3 NM B2B as an example of WS-* + AMQP 1.0 based Publish/Subscribe

A.3.1 Introduction

The deployment described here is based on the operational solution provided by NM B2B since its release 19.0 which is intentionally fully aligned with the YP specification.

The definition of the operational solution was performed by NM B2B in strict and continuous collaboration with interested Stakeholders of NM B2B.

Authentication is based on mutual authentication using X.509v3 certificates at SSL/TLS level and the established identity is used for authorisation.[4]

A.3.2 Subscription Management

The Subscription Management interface for the NM B2B is specific for the NM B2B.

The Subscription Management interface for the NM B2B offers similar functionality as the WS-N Subscription Management interface:

- create (subscribe),
- delete (unsubscribe),
- pause (pause),
- resume (resume)

Additionally, compared to the WS-N Subscription Management interface, the Subscription Management interface for the NM B2B offers following additional functionality (this additional functionality is implemented using NM B2B proprietary operations (the ones listed) and NM B2B proprietary resources (e.g. queue)):

- list operation: list of existing subscriptions.
- retrieve operation: the details of a particular subscription.
- history operation: historical information
- create operation:
    - a description text for each subscription

[4] The AMQP v1.0 specification provides for 3 distinct methods to integrate security controls:
- on top of SSL/TLS (amqps) whereby the upper AMQP layer reuses the SSL/TLS controls for authentication, integrity and confidentiality.
- SSL/TLS embedded into AMQP v1.0. The same functionality as on top of SSL/TLS but this does not seem a "very popular" mechanism.
- SASL embedded into AMQP v1.0. This control is only usable to provide authentication.
Any of above can be selected. NM has selected the first.

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- organisation of the distribution channels. E.g. a subscriber can decide for a subscription to use its own unique distribution channel or can decide that multiple subscriptions use the same distribution channel.
- throttling of the number of subscriptions that are considered to be the same per subscriber. E.g. currently a single digital identity cannot create more than 1 identical subscription.

Service description:

The Subscription Management interface defines a series of operations related to the Subscription Management.

Binding:

The Subscription Management service is instantiated on a SOAP1.1 - HTTP/1.1- TLS1.0 - TCP - IPv4 based binding, according to following YP 3.0 requirements:

- REQ-14.01.04-TS-0901.0304

The service and the operations supported by the service are formalised through a WSDL 1.1 and accompanying XSD. All the operations use the MEP SRR (Synchronous Request Reply).

A.3.3 Publication Registration Management

There are no interoperability requirements with external stakeholders for the Publication Registration Management.

The Publication Registration Management interface for the NM B2B is specific for the NM B2B.

A.3.4 Message distribution

A.3.4.1 Introduction

Both Pull and Push message distribution are supported by the solution.

From a logical point of view the Pull and Push message distribution share the same message store.

- a message retrieved in a destructive read mode via the pull message distribution, will no longer be delivered via the push message distribution and vice versa[5]

[5] Each subscription has its own context but 2 subscriptions by the same digital identity can share the same "message store" (in concreto : a queue).
As described above, it is the subscriber who decides whether such sharing of a queue by multiple distinct subscriptions if effective of not.
If at the time of a new subscription no reference to a queue is provided, a new queue is created specific for that subscription.
Otherwise the subscription can at the time of subscription explicitly indicate an existing queue wherein the messages related to that particular subscription should be stored. This queue can then store messages from multiple subscriptions but the sharing is only possible within the context of the same digital identity.
This way a subscribing digiral identity has great freedom and flexibility on the organisation of the message distribution.

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- both Pull and Push message distribution support destructive read mode and non-destructive read mode (“browsing”)

A.3.4.2 Pull message distribution

The Pull message distribution provides following functionality:

- the request determines the number of messages to be provided in a reply
- the request determines whether the messages provided in the reply are removed (destructive read) or not
- the reply indicates whether more messages are available
- a destructive read of message on a message channel via Pull, removes the message also from the message channel via Push
- the Pull message distribution is foreseen to provide access to an archive of published messages but this is not yet implemented in R19.0. The archive will contain such messages independent of the delivery method (Pull or Push)

Service description:

The Pull message distribution interface defines the PullMessage operation.

Binding:

The Pull message distribution service is instantiated on a SOAP1.1 - HTTP/1.1- TLS1.0 - TCP - IPv4 based binding, according to following YP 3.0 requirements:

- REQ-14.01.04-TS-0901.0304.

The service and the operation supported by the service are formalised through a WSDL 1.1 and accompanying XSD. All the operations use the MEP SRR (Synchronous Request Reply).

The payload of each message contains a field called “message” that consists of XML which is described through XSD.

A.3.4.3 Push message distribution

The Push message distribution provides following functionality:

- the function is based on the AMQP v1.0 technology and therefore inherits the functionality that is part of the AMQP v1.0 specification

Service description:

Queue functionality combined with AMQP v1.0 functionality

Binding:

The NM implementation does not use the “Topic” functionality of ActiveMQ but uses the “Queue” functionality of ActiveMQ. Every subscriber has one or more private “Queues” wherein the messages are deposited.
The point-to-point security controls in TLS are used to determine whether a digital identity has access via AMQP v1.0 to such a “Queue” or not.

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The Push message distribution service is instantiated on a AMQP v1.0 - TLS1.0 - TCP - IPv4 based binding using TLS1.0 for authentication, according to following YP 3.0 requirements:

- REQ-14.01.04-TS-0901.0751.

There is no description of service and operation through a standardised description language.

The payload of each pushed message consists of XML which is described through XSD.

A.3.5 Administration

There are no interoperability requirements with external stakeholders for the Administration interface.

The Administration interface for the NM B2B is specific for the NM B2B.

The Administration interface is based on the interfaces provided by the COTS (Apache ActiveMQ) as well as on specific tooling.

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Appendix B Interface Evolution Analysis

Interface evolution activities focus on evolution of ATM Service STDD (Service Technical Design Description), or just technical contract. To specify versioning and evolution strategies of ATM Service, implies to govern the evolution of the ATM service STDD. It is not SWIM-TI (or WP14) responsibility to impose any rules/strategies. It will be up to specific actors (service architects, service provider) and/or governance bodies to decide the strategy to be applied. Provided compatibility assessment, recommendations and rules aim at supporting those actors in properly manage evolution of ATM service STDD. It is than up to those actors to apply or not (or to extend/refine) Rules and recommendations provided hereafter.

The “object under evolution” is the STDD which mainly provides the following groups of information:

a) “Applicable Service Name and Versioning”, that includes naming, versioning, status and reference concerning the ATM Service (and its related SDD) to which the Service Technical Design applies to.

b) “Service Technical Interfaces”, that includes the description of the technical interfaces of the service. This is the part where the link with chosen SWIM-TI interface bindings is provided.

c) “Service Levels And Design Decisions”, that includes the description of the service levels and any relevant design decisions taken during technical design.

Interface evolution analysis focus on evolution of only STDD “Service Technical Interfaces” part. This part in composed by different elements and evolution of one or more of those elements may be compatible or incompatible changes. The link between an ATM service STDD and interface evolution analysis is the SWIM-TI interface binding(s) chosen for that service.

Some rules/recommendations provided below are SWIM-TI Profiles Interface Bindings independent whereas other are binding specific due to particular standards adopted in that binding. For instance rules on XSD modelling techniques to achieve minor version compatibility are only applicable to interface bindings using XML/XSD. Furthermore, ATM service implementations versioning is not addressed. In particular for a given version of the STDD, a stakeholder may plan different versions of the service implementation. According to the “Contract first” (STDD) approach, changes on service implementations are not expected to impact technical interoperability (the STDD version is the same) if what specified in the STDD is properly used as reference by both provider and consumer.

In the tables below rules, recommendations and compatibility assessment applicable to ATM services using interface bindings part of this Technical Specification are provided. The first table provides for each row the applicable interface bindings. The second table provides complete definition of applicable rules, recommendations and compatibility assessment (use the identifier to identify what is applicable to which interface bindings). Exactly the same content is provided in the Interface Evolution Analysis spreadsheet available on the extranet [11].

Identifier	Type	Artifact	Title	Applicable Yellow Profile Interface Bindings
14.01.04-INTEV-0007	Recommendation	All the Bindings	Lifecycle Migration plan	REQ-14.01.04-TS-0901.0310 REQ-14.01.04-TS-0901.0311 REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785 REQ-14.01.04-TS-0901.0751
14.01.04-INTEV-0008	Recommendation	All the Bindings	Lifecycle Retirement plan	REQ-14.01.04-TS-0901.0310 REQ-14.01.04-TS-0901.0311 REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780

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Identifier	Type	Artifact	Title	Applicable Yellow Profile Interface Bindings
				REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785 REQ-14.01.04-TS-0901.0751
14.01.04-INTEV-0018	Recommendation	SOAP Binding Structural elements	Evolution of SOAP Binding Structural elements	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785
14.01.04-INTEV-0019	Compatibility Technique	All the Bindings	Evolution of binding Structural elements	REQ-14.01.04-TS-0901.0310 REQ-14.01.04-TS-0901.0311 REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318

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Identifier	Type	Artifact	Title	Applicable Yellow Profile Interface Bindings
				REQ-14.01.04-TS-0901.0785 REQ-14.01.04-TS-0901.0751
14.01.04-INTEV-0020	Recommendation	All the Bindings	Evolution of binding structural elements: Security	REQ-14.01.04-TS-0901.0310 REQ-14.01.04-TS-0901.0311 REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785 REQ-14.01.04-TS-0901.0751
14.01.04-INTEV-0021	Recommendation	All the Bindings	Evolution of binding structural elements: Protocol Stack	REQ-14.01.04-TS-0901.0310 REQ-14.01.04-TS-0901.0311 REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317

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Identifier	Type	Artifact	Title	Applicable Yellow Profile Interface Bindings
				REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785 REQ-14.01.04-TS-0901.0751
14.01.04-INTEV-0022	Recommendation	WSDL	Handling Incompatible changes of WSDL in SOAP based bindings	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785
14.01.04-INTEV-0023	Compatibility Assessment	WSDL	Compatibility Assessment of evolution of SOAP based bindings "contract" part: WSDL	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785

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Identifier	Type	Artifact	Title	Applicable Yellow Profile Interface Bindings
14.01.04-INTEV-0024	Rule	WSDL	Evolution of WSDL in SOAP based bindings: new data elements	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785
14.01.04-INTEV-0025	Rule	WSDL	Evolution of WSDL in SOAP based bindings: temporary data elements	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785
14.01.04-INTEV-0026	Rule	WSDL	Evolution of WSDL in SOAP based bindings: elements/attributes order	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305

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Identifier	Type	Artifact	Title	Applicable Yellow Profile Interface Bindings
				REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785
14.01.04-INTEV-0027	Rule	WSDL	Evolution of WSDL in SOAP based bindings: new Data Element Type	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785
14.01.04-INTEV-0028	Rule	WSDL	Evolution of WSDL in SOAP based bindings: Data Element renaming	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765

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Identifier	Type	Artifact	Title	Applicable Yellow Profile Interface Bindings
				REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785
14.01.04-INTEV-0029	Rule	WSDL	Evolution of WSDL in SOAP based bindings: Namespaces	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785
14.01.04-INTEV-0030	Rule	WSDL	Evolution of WSDL in SOAP based bindings: Namespaces and WSDL version	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775

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Identifier	Type	Artifact	Title	Applicable Yellow Profile Interface Bindings
				REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785
14.01.04-INTEV-0031	Rule	WSDL	Evolution of WSDL in SOAP based bindings: update of Data Element QName.	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785
14.01.04-INTEV-0032	Rule	WSDL	Evolution of WSDL in SOAP based bindings: update of wsdl:message.	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785

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Identifier	Type	Artifact	Title	Applicable Yellow Profile Interface Bindings
14.01.04-INTEV-0033	Rule	WSDL	Evolution of WSDL in SOAP based bindings: update of order of wsdl:input messages.	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785
14.01.04-INTEV-0034	Rule	WSDL	Evolution of WSDL in SOAP based bindings: new wsdl:input messages.	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785
14.01.04-INTEV-0035	Rule	WSDL	Evolution of WSDL in SOAP based bindings: remove wsdl:input messages.	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305

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Identifier	Type	Artifact	Title	Applicable Yellow Profile Interface Bindings
				REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785
14.01.04-INTEV-0036	Rule	WSDL	Evolution of WSDL in SOAP based bindings: order of wsdl:output messages.	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785
14.01.04-INTEV-0037	Rule	WSDL	Evolution of WSDL in SOAP based bindings: new wsdl:output messages.	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765

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Identifier	Type	Artifact	Title	Applicable Yellow Profile Interface Bindings
				REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785
14.01.04-INTEV-0038	Rule	WSDL	Evolution of WSDL in SOAP based bindings: remove wsdl:output messages.	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785
14.01.04-INTEV-0039	Rule	WSDL	Evolution of WSDL in SOAP based bindings: new wsdl:fault messages.	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775

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Identifier	Type	Artifact	Title	Applicable Yellow Profile Interface Bindings
				REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785
14.01.04-INTEV-0040	Rule	WSDL	Evolution of WSDL in SOAP based bindings: operation renaming.	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785
14.01.04-INTEV-0041	Rule	WSDL	Evolution of WSDL in SOAP based bindings: removal of wsdl:operation from a wsdl:portType.	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785

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Identifier	Type	Artifact	Title	Applicable Yellow Profile Interface Bindings
14.01.04-INTEV-0042	Rule	WSDL	Evolution of WSDL in SOAP based bindings: “message” and “name” attributes renaming.	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785
14.01.04-INTEV-0043	Rule	WSDL	Evolution of WSDL in SOAP based bindings: wsdl:portType renaming and removal.	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785
14.01.04-INTEV-0044	Rule	WSDL	Evolution of WSDL in SOAP based bindings: wsdl:binding definition.	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305

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Identifier	Type	Artifact	Title	Applicable Yellow Profile Interface Bindings
				REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785
14.01.04-INTEV-0045	Rule	WSDL	Evolution of WSDL in SOAP based bindings: wsdl:service definition.	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785
14.01.04-INTEV-0046	Recommendation	WSDL	WSDL namespaces	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765

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Identifier	Type	Artifact	Title	Applicable Yellow Profile Interface Bindings
				REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785
14.01.04-INTEV-0047	Recommendation	WSDL	WSDL versioning	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785
14.01.04-INTEV-0048	Recommendation	XSD	XSD namespaces	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775

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Identifier	Type	Artifact	Title	Applicable Yellow Profile Interface Bindings
				REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785 REQ-14.01.04-TS-0901.0751 (when MIME type application/xml or text/xml is used) REQ-14.01.04-TS-0901.0310 (when MIME type application/xml or text/xml is used) REQ-14.01.04-TS-0901.0311
14.01.04-INTEV-0049	Recommendation	XSD	XSD versioning	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785 REQ-14.01.04-TS-0901.0751 (when MIME type application/xml or text/xml is used) REQ-14.01.04-TS-0901.0310 (when MIME type application/xml or text/xml is used) REQ-14.01.04-TS-0901.0311
14.01.04-INTEV-0050	Recommendation	XSD	Handling Incompatible changes of XSD in SOAP based bindings	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760

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Identifier	Type	Artifact	Title	Applicable Yellow Profile Interface Bindings
				REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785 REQ-14.01.04-TS-0901.0751 (if MIME type application/xml or text/xml is used)
14.01.04-INTEV-0051	Compatibility Assessment	XSD	Compatibility Assessment of evolution of SOAP based bindings "contract" part: XSD	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785 REQ-14.01.04-TS-0901.0751 (when MIME type application/xml or text/xml is used) REQ-14.01.04-TS-0901.0310 (when MIME type application/xml or text/xml is used) REQ-14.01.04-TS-0901.0311
14.01.04-INTEV-0052	Rule	XSD	Evolution of XSD: new data elements	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304

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Identifier	Type	Artifact	Title	Applicable Yellow Profile Interface Bindings
				REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785 REQ-14.01.04-TS-0901.0751 (when MIME type application/xml or text/xml is used) REQ-14.01.04-TS-0901.0310 (when MIME type application/xml or text/xml is used) REQ-14.01.04-TS-0901.0311
14.01.04-INTEV-0053	Rule	XSD	Evolution of XSD: temporary data elements	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785 REQ-14.01.04-TS-0901.0751 (when MIME type application/xml or text/xml is used)

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Identifier	Type	Artifact	Title	Applicable Yellow Profile Interface Bindings
				REQ-14.01.04-TS-0901.0310 (when MIME type application/xml or text/xml is used) REQ-14.01.04-TS-0901.0311
14.01.04-INTEV-0054	Rule	XSD	Evolution of XSD: elements/attributes order	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785 REQ-14.01.04-TS-0901.0751 (when MIME type application/xml or text/xml is used) REQ-14.01.04-TS-0901.0310 (when MIME type application/xml or text/xml is used) REQ-14.01.04-TS-0901.0311
14.01.04-INTEV-0055	Rule	XSD	Evolution of XSD: new Data Element Type	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775

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Identifier	Type	Artifact	Title	Applicable Yellow Profile Interface Bindings
				REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785 REQ-14.01.04-TS-0901.0751 (if MIME type application/xml or text/xml is used)
14.01.04-INTEV-0056	Rule	XSD	Evolution of XSD: Data Element renaming	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785 REQ-14.01.04-TS-0901.0751 (when MIME type application/xml or text/xml is used) REQ-14.01.04-TS-0901.0310 (when MIME type application/xml or text/xml is used) REQ-14.01.04-TS-0901.0311
14.01.04-INTEV-0057	Rule	XSD	Evolution of XSD: Namespaces	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307

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Identifier	Type	Artifact	Title	Applicable Yellow Profile Interface Bindings
				REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785 REQ-14.01.04-TS-0901.0751 (when MIME type application/xml or text/xml is used) REQ-14.01.04-TS-0901.0310 (when MIME type application/xml or text/xml is used) REQ-14.01.04-TS-0901.0311
14.01.04-INTEV-0058	Rule	XSD	Evolution of XSD: Namespaces and XSD version	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785 REQ-14.01.04-TS-0901.0751 (when MIME type application/xml or text/xml is used) REQ-14.01.04-TS-0901.0310 (when MIME type application/xml or text/xml is used) REQ-14.01.04-TS-0901.0311
14.01.04-INTEV-0059	Rule	XSD	Evolution of XSD: update of Data Element QName.	REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304

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Identifier	Type	Artifact	Title	Applicable Yellow Profile Interface Bindings
				REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785 REQ-14.01.04-TS-0901.0751 (when MIME type application/xml or text/xml is used) REQ-14.01.04-TS-0901.0310 (when MIME type application/xml or text/xml is used) REQ-14.01.04-TS-0901.0311
14.01.04-INTEV-0060	Recommendation	All the Bindings	Recommended Versioning Approach	REQ-14.01.04-TS-0901.0310 REQ-14.01.04-TS-0901.0311 REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785

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Identifier	Type	Artifact	Title	Applicable Yellow Profile Interface Bindings
				REQ-14.01.04-TS-0901.0751
14.01.04-INTEV-0061	Recommendation	All the Bindings	Recommended Interface Evolution Strategy	REQ-14.01.04-TS-0901.0310 REQ-14.01.04-TS-0901.0311 REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780 REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785 REQ-14.01.04-TS-0901.0751
14.01.04-INTEV-0062	Recommendation	All the Bindings	Balance between evolution flexibility and contract effectiveness	REQ-14.01.04-TS-0901.0310 REQ-14.01.04-TS-0901.0311 REQ-14.01.04-TS-0901.0790 REQ-14.01.04-TS-0901.0795 REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780

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Identifier	Type	Artifact	Title	Applicable Yellow Profile Interface Bindings
				REQ-14.01.04-TS-0901.0318 REQ-14.01.04-TS-0901.0785 REQ-14.01.04-TS-0901.0751
14.01.04-INTEV-0090	Recommendation	WS-SecurityPolicy	Handling Incompatible changes of WS-SecurityPolicy in SOAP based bindings	REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780
14.01.04-INTEV-0091	Compatibility Assessment	WS-SecurityPolicy	Compatibility Assessment of evolution of SOAP based bindings "contract" part: WS-SecurityPolicy	REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780
14.01.04-INTEV-0092	Rule	WS-SecurityPolicy	Evolution of WS-SecurityPolicy: Policy Identification attributes.	REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780
14.01.04-INTEV-0093	Rule	WS-SecurityPolicy	Evolution of WS-SecurityPolicy: Attachment of new policies to Endpoint and/or Operations and/or Message Policy Subject.	REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308

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Identifier	Type	Artifact	Title	Applicable Yellow Profile Interface Bindings
				REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780
14.01.04-INTEV-0094	Rule	WS-SecurityPolicy	Evolution of WS-SecurityPolicy: Detach Policies attached to Endpoint and/or Operations and/or Message Policy Subject.	REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780
14.01.04-INTEV-0095	Compatibility Assessment	WS-SecurityPolicy	Evolution of WS-SecurityPolicy: New or updated Security Policy expressions.	REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780
14.01.04-INTEV-0096	Rule	WS-SecurityPolicy	Evolution of WS-SecurityPolicy: new policy assertions.	REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317

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Identifier	Type	Artifact	Title	Applicable Yellow Profile Interface Bindings
				REQ-14.01.04-TS-0901.0780
14.01.04-INTEV-0097	Rule	WS-SecurityPolicy	Evolution of WS-SecurityPolicy: new policy assertions.	REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780
14.01.04-INTEV-0098	Recommendation	WS-SecurityPolicy	Evolution of WS-SecurityPolicy: WS-SecurityPolicy sp:AlgorithmSuite.	REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780
14.01.04-INTEV-0099	Recommendation	WS-SecurityPolicy	Evolution of WS-SecurityPolicy: use of wsp:PolicyReference.	REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780
14.01.04-INTEV-0100	Recommendation	WS-SecurityPolicy	Evolution of WS-SecurityPolicy: Policy and WSDL.	REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0760 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0765 REQ-14.01.04-TS-0901.0307

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Identifier	Type	Artifact	Title	Applicable Yellow Profile Interface Bindings
				REQ-14.01.04-TS-0901.0770 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0775 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0780
14.01.04-INTEV-0101	Compatibility Technique	WS-N Specific	Compatibility Technique to handle incompatible evolution of WS-N Specific artifacts: Topic type XSD (Physical Data Exchange Model) incompatible changes	REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0318
14.01.04-INTEV-0102	Compatibility Technique	WS-N Specific	Compatibility Technique to handle incompatible evolution of WS-N Specific artifacts: WS Topic Namespace incompatible changes	REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0318
14.01.04-INTEV-0103	Compatibility Assessment	WS-N Specific	Compatibility Assessment of evolution of WS-N Specific artifacts: Filter Expression	REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0318
14.01.04-INTEV-0104	Compatibility Assessment	WS-N Specific	Compatibility Assessment of evolution of WS-N Specific artifacts: Topic Expression	REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0317

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Identifier	Type	Artifact	Title	Applicable Yellow Profile Interface Bindings
				REQ-14.01.04-TS-0901.0318
14.01.04-INTEV-0105	Compatibility Assessment	WS-N Specific	Compatibility Assessment of evolution of WS-N Specific artifacts: Topic Expression Dialects	REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0318
14.01.04-INTEV-0106	Recommendation	WS-N Specific	Handling Incompatible changes of WS-N Specific artifacts in SOAP based bindings	REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0318
14.01.04-INTEV-0107	Compatibility Assessment	WS-N Specific	Compatibility Assessment of evolution ofWS-N Specific artifacts	REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0318
14.01.04-INTEV-0108	Rule	WS-N Specific	Evolution of WS-N Specific artifacts: new policy assertions.	REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0318
14.01.04-INTEV-0109	Rule	WS-N Specific	Evolution of WS-N Specific artifacts: new policy assertions.	REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306

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Identifier	Type	Artifact	Title	Applicable Yellow Profile Interface Bindings
				REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0318
14.01.04-INTEV-0110	Rule	WS-N Specific	Evolution of WS-N Specific artifacts: new policy assertions.	REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0318
14.01.04-INTEV-0111	Rule	WS-N Specific	Evolution of WS-N Specific artifacts: new policy assertions.	REQ-14.01.04-TS-0901.0304 REQ-14.01.04-TS-0901.0305 REQ-14.01.04-TS-0901.0306 REQ-14.01.04-TS-0901.0308 REQ-14.01.04-TS-0901.0307 REQ-14.01.04-TS-0901.0309 REQ-14.01.04-TS-0901.0317 REQ-14.01.04-TS-0901.0318
14.01.04-INTEV-0112	Recommendation	AMQP 1.0 Binding Structural elements	Evolution of AMQP 1.0 Binding Structural elements	REQ-14.01.04-TS-0901.0751
14.01.04-INTEV-0113	Recommendation	AMQP 1.0 Bindings	AMQP 1.0 native features based Adapter Compatibility technique realization	REQ-14.01.04-TS-0901.0751
14.01.04-INTEV-0114	Recommendation	AMQP 1.0 Bindings	AMQP 1.0 bindings support of dynamic Content-type discovery technique.	REQ-14.01.04-TS-0901.0751
14.01.04-INTEV-0115	Recommendation	AMQP 1.0 Bindings	Handling Incompatible changes of AMQP 1.0 bindings contract elements	REQ-14.01.04-TS-0901.0751
14.01.04-INTEV-0116	Compatibility Assessment	AMQP 1.0 Bindings	Compatibility Assessment of evolution of AMQP 1.0 bindings contract elements	REQ-14.01.04-TS-0901.0751
14.01.04-INTEV-0117	Compatibility Assessment	AMQP 1.0 Bindings	Compatibility Assessment of evolution of AMQP 1.0 bindings contract elements: reference XSDs for application/xml or text/xml Content-type.	REQ-14.01.04-TS-0901.0751
14.01.04-INTEV-0118	Rule	AMQP 1.0 Bindings	Evolution of AMQP 1.0 bindings contract elements: supported Content-type-Content-encoding pairs.	REQ-14.01.04-TS-0901.0751
14.01.04-	Rule	AMQP 1.0 Bindings	Evolution of AMQP 1.0 bindings contract elements: use of element from	REQ-14.01.04-TS-0901.0751

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Identifier	Type	Artifact	Title	Applicable Yellow Profile Interface Bindings
INTEV-0119			header, delivery-annotations, message-annotations, properties and application-properties.	
14.01.04-INTEV-0120	Rule	AMQP 1.0 Bindings	Evolution of AMQP 1.0 bindings contract elements: use of element from header, delivery-annotations, message-annotations, properties and application-properties.	REQ-14.01.04-TS-0901.0751
14.01.04-INTEV-0121	Rule	AMQP 1.0 Bindings	Evolution of AMQP 1.0 bindings contract elements: use of element from header, delivery-annotations, message-annotations, properties and application-properties.	REQ-14.01.04-TS-0901.0751
14.01.04-INTEV-0122	Rule	AMQP 1.0 Bindings	Evolution of AMQP 1.0 bindings contract elements: use of element from header, delivery-annotations, message-annotations, properties and application-properties.	REQ-14.01.04-TS-0901.0751
14.01.04-INTEV-0123	Rule	AMQP 1.0 Bindings	Evolution of AMQP 1.0 bindings contract elements: use of element from header, delivery-annotations, message-annotations, properties and application-properties.	REQ-14.01.04-TS-0901.0751
14.01.04-INTEV-0124	Rule	AMQP 1.0 Bindings	Evolution of AMQP 1.0 bindings contract elements: addressing format.	REQ-14.01.04-TS-0901.0751
14.01.04-INTEV-0125	Rule	AMQP 1.0 Bindings	Evolution of AMQP 1.0 bindings contract elements: filter format.	REQ-14.01.04-TS-0901.0751
14.01.04-INTEV-0144	Recommendation	Plain Old XML Binding Structural elements	Evolution of Plain Old XML (POX) Binding Structural elements	REQ-14.01.04-TS-0901.0311
14.01.04-INTEV-0145	Recommendation	Plain Old XML Bindings	Plain Old XML Bindings (POX) native features based Adapter Compatibility technique realization	REQ-14.01.04-TS-0901.0311
14.01.04-INTEV-0146	Recommendation	Plain Old XML Bindings	Handling Incompatible changes of Plain Old XML bindings contract elements	REQ-14.01.04-TS-0901.0311
14.01.04-INTEV-0147	Compatibility Assessment	Plain Old XML Bindings	Compatibility Assessment of evolution of Plain Old XML (POX) bindings contract elements: reference XSDs for application/xml or text/xml Content-type.	REQ-14.01.04-TS-0901.0311
14.01.04-INTEV-0148	Recommendation	HTTP/REST Binding Structural elements	Evolution of HTTP/REST Binding Structural elements	REQ-14.01.04-TS-0901.0310
14.01.04-INTEV-0149	Recommendation	HTTP/REST Bindings	Plain HTTP/REST native features based Adapter Compatibility technique realization	REQ-14.01.04-TS-0901.0310
14.01.04-INTEV-0150	Recommendation	HTTP/REST Bindings	Handling Incompatible changes of HTTP/REST bindings contract elements	REQ-14.01.04-TS-0901.0310
14.01.04-INTEV-0151	Compatibility Assessment	HTTP/REST Bindings	Compatibility Assessment of evolution of HTTP/REST bindings contract elements: reference XSDs for application/xml or text/xml Content-type.	REQ-14.01.04-TS-0901.0310

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Identifier	Type	Artifact	Title	Applicable Yellow Profile Interface Bindings
14.01.04-INTEV-0152	Compatibility Assessment	HTTP/REST Bindings	Compatibility Assessment of evolution of HTTP/REST bindings contract elements	REQ-14.01.04-TS-0901.0310
14.01.04-INTEV-0153	Rule	HTTP/REST Bindings	Evolution of HTTP/REST bindings contract elements: supported Content-type-Content-encoding pairs.	REQ-14.01.04-TS-0901.0310
14.01.04-INTEV-0154	Rule	HTTP/REST Bindings	Evolution of HTTP/REST bindings contract elements: URLs-Protocol semantic change.	REQ-14.01.04-TS-0901.0310
14.01.04-INTEV-0155	Rule	HTTP/REST Bindings	Evolution of HTTP/REST bindings contract elements: URLs-Resource semantic.	REQ-14.01.04-TS-0901.0310
14.01.04-INTEV-0156	Recommendation	HTTP/REST Bindings	Evolution of HTTP/REST bindings contract elements: Version in URL.	REQ-14.01.04-TS-0901.0310
14.01.04-INTEV-0157	Rule	HTTP/REST Bindings	Evolution of HTTP/REST bindings contract elements: URLs-Argument name.	REQ-14.01.04-TS-0901.0310
14.01.04-INTEV-0158	Rule	HTTP/REST Bindings	Evolution of HTTP/REST bindings contract elements: URLs-New argument.	REQ-14.01.04-TS-0901.0310
14.01.04-INTEV-0159	Rule	HTTP/REST Bindings	Evolution of HTTP/REST bindings contract elements: URLs-Argument removal.	REQ-14.01.04-TS-0901.0310
14.01.04-INTEV-0160	Rule	HTTP/REST Bindings	Evolution of HTTP/REST bindings contract elements: JSON related changes.	REQ-14.01.04-TS-0901.0310

Identifier	Type	Artifact	Title	Description	Rationale
14.01.04-INTEV-0007	Recommendation	All the Bindings	Lifecycle Migration plan	If previous Major version is still available, migration plan should be produced.	Migration plan is required to enable consumers/providers to plan the migration to the new major version.
14.01.04-INTEV-0008	Recommendation	All the Bindings	Lifecycle Retirement plan	If previous Major version is still available but its deprecation or retirement is already foreseen, retirement plan should be produced.	Retirement plan is required to enable consumers/providers to know when the previous version will be retired and to plan accordingly the migration to the new major version.
14.01.04-INTEV-0018	Recommendation	SOAP Binding Structural elements	Evolution of SOAP Binding Structural elements	Changes in SOAP Binding Structural elements are recommended to result in a new major version of the STDD. The choice to use a minor version in case of compatible changes is left up to service designers although they are considered sufficiently fundamental to	All the changes in SOAP Binding Structural elements typically imply the selection/specification of a new interface binding resulting in the most general case in an incompatible change.

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Identifier	Type	Artifact	Title	Description	Rationale
				justify a major version change for documentation purposes.	
14.01.04-INTEV-0019	Compatibility Technique	All the Bindings	Evolution of binding Structural elements	When major (and incompatible) versions compatibility is required, the Adapter Compatibility technique is typically adopted. This techniques is not always applicable and in general is not always guaranteeing full compatibility: depending on the changes in binding Structural elements this techniques may or not guarantee "full" major versions compatibility. In particular if the "Security" part is updated moving from transport level to message level (updating accordingly also the "Protocol stack part") security mechanisms, the use of the Adapter Compatibility technique may not be enough to guarantee that message level security attributes are properly "mediated"/handled. Other changes in G1 (protocol stack) may also make impossible/complicated to use the Adapter Compatibility technique (SOAP x.y to SOAP x.z can be easily handled but SOAP x.y to AMQP not). Above considerations are also relevant when designing the first major version of the STDD. For instance, if it is planned to start with transport level security but in a given point in time the migration to message level security is already foreseen, the STDD architects already know that Backward compatibility will be broken between two major versions in future.	
14.01.04-INTEV-0020	Recommendation	All the Bindings	Evolution of binding structural elements: Security	If major versions compatibility is required do not change transport level to message level security.	As documented in 14.01.04-INTEV-0019, the use of the Adapter compatibility technique could not guarantee in this case a full compatibility between two major versions.
14.01.04-INTEV-	Recommendation	All the Bindings	Evolution of binding structural elements:	If major versions compatibility is required do not select new protocols that may make	As documented in 14.01.04-INTEV-0019, the use of the Adapter compatibility technique could not guarantee in this

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Identifier	Type	Artifact	Title	Description	Rationale
0021			Protocol Stack	expensive the realization of the mediation logic (in some case the FULL compatibility cannot be achieved) required to implement the Adapter compatibility technique.	case a full compatibility between two major versions.
14.01.04-INTEV-0022	Recommendation	WSDL	Handling Incompatible changes of WSDL in SOAP based bindings	If it is required to provide compatibility techniques to handle incompatible major versions due to WSDL evolution, Adapter compatibility technique should be adopted OR do design the WSDL as generic as possible to anticipate further evolution and use the Dynamic Binding Compatibility technique.	It should be noted that too flexible WSDL (second option) may result in too generic interfaces, impacting application semantics and increasing complexity.
14.01.04-INTEV-0023	Compatibility Assessment	WSDL	Compatibility Assessment of evolution of SOAP based bindings "contract" part: WSDL	If one of the following rules is violated backward compatibility between two consecutive versions is broken (no compatible change): 14.01.04-INTEV-0024 to 14.01.04-INTEV-0045. In such case, if it is required to handle incompatible major versions compatibility, recommendation 14.01.04-INTEV-0022 apply.	
14.01.04-INTEV-0024	Rule	WSDL	Evolution of WSDL in SOAP based bindings: new data elements	If backward compatibility between two consecutive versions is required, do use optional Data Element technique for new Data Element (wsdl:types).	
14.01.04-INTEV-0025	Rule	WSDL	Evolution of WSDL in SOAP based bindings: temporary data elements	If backward compatibility between two consecutive versions is required, do consider as optional Data Element the elements that may be removed in further minor versions (wsdl:types).	
14.01.04-INTEV-0026	Rule	WSDL	Evolution of WSDL in SOAP based bindings: elements/attributes order	If backward compatibility between two consecutive versions is required, do not change order of elements/attributes in Data Element between minor versions (wsdl:types).	
14.01.04-INTEV-	Rule	WSDL	Evolution of WSDL in SOAP based bindings:	If backward compatibility between two consecutive versions is required, do use	

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Identifier	Type	Artifact	Title	Description	Rationale
0027			new Data Element Type	Flexible Data Types technique to anticipate (in any) further modification of Data Element type and cardinality (wsdl:types).	
14.01.04-INTEV-0028	Rule	WSDL	Evolution of WSDL in SOAP based bindings: Data Element renaming	If backward compatibility between two consecutive versions is required, do use Selectable Data Element technique to anticipate further renaming of Data Elements (wsdl:types).	
14.01.04-INTEV-0029	Rule	WSDL	Evolution of WSDL in SOAP based bindings: Namespaces	If backward compatibility between two consecutive versions is required, do not change Namespaces.	
14.01.04-INTEV-0030	Rule	WSDL	Evolution of WSDL in SOAP based bindings: Namespaces and WSDL version	If backward compatibility between two consecutive versions is required, do not embed the version of the WSDL within its Namespace.	Minor version of the WSDL would imply Namespace renaming which results in an incompatible change
14.01.04-INTEV-0031	Rule	WSDL	Evolution of WSDL in SOAP based bindings: update of Data Element QName.	If backward compatibility between two consecutive versions is required, do not change element QName when Selectable Data Element technique is not used.	
14.01.04-INTEV-0032	Rule	WSDL	Evolution of WSDL in SOAP based bindings: update of wsdl:message.	If backward compatibility between two consecutive versions is required, do apply following rules for changes on the elements used by Web Services operations input, output and fault messages (wsdl:message): 14.01.04-INTEV-0024, 14.01.04-INTEV-0025, 14.01.04-INTEV-0026, 14.01.04-INTEV-0027, 14.01.04-INTEV-0028, 14.01.04-INTEV-0031.	
14.01.04-INTEV-0033	Rule	WSDL	Evolution of WSDL in SOAP based bindings: update of order of wsdl:input messages.	If backward compatibility between two consecutive versions is required, do not change the order of wsdl:input messages in wsdl:operation.	
14.01.04-INTEV-0034	Rule	WSDL	Evolution of WSDL in SOAP based bindings: new wsdl:input messages.	If backward compatibility between two consecutive versions is required, do not add new wsdl:input messages in wsdl:operation.	
14.01.04-INTEV-0035	Rule	WSDL	Evolution of WSDL in SOAP based bindings: remove wsdl:input	If backward compatibility between two consecutive versions is required, do not remove wsdl:input messages from	

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Identifier	Type	Artifact	Title	Description	Rationale
			messages.	wsdl:operation.	
14.01.04-INTEV-0036	Rule	WSDL	Evolution of WSDL in SOAP based bindings: order of wsdl:output messages.	If backward compatibility between two consecutive versions is required, do not change the order of wsdl:output messages in wsdl:operation.	
14.01.04-INTEV-0037	Rule	WSDL	Evolution of WSDL in SOAP based bindings: new wsdl:output messages.	If backward compatibility between two consecutive versions is required, do not add new wsdl: output messages in wsdl:operation.	
14.01.04-INTEV-0038	Rule	WSDL	Evolution of WSDL in SOAP based bindings: remove wsdl:output messages.	If backward compatibility between two consecutive versions is required, do not remove wsdl: output messages from wsdl:operation.	
14.01.04-INTEV-0039	Rule	WSDL	Evolution of WSDL in SOAP based bindings: new wsdl:fault messages.	If backward compatibility between two consecutive versions is required, do not add new wsdl:fault messages in wsdl:operation.	
14.01.04-INTEV-0040	Rule	WSDL	Evolution of WSDL in SOAP based bindings: operation renaming.	If backward compatibility between two consecutive versions is required, do not rename a wsdl:operation.	
14.01.04-INTEV-0041	Rule	WSDL	Evolution of WSDL in SOAP based bindings: removal of wsdl:operation from a wsdl:portType.	If backward compatibility between two consecutive versions is required, do not remove a wsdl:operation from a wsdl:portType.	
14.01.04-INTEV-0042	Rule	WSDL	Evolution of WSDL in SOAP based bindings: “message” and “name” attributes renaming.	If backward compatibility between two consecutive versions is required, do not rename “message” and “name” attributes of wsdl:operation input, output and fault messages.	
14.01.04-INTEV-0043	Rule	WSDL	Evolution of WSDL in SOAP based bindings: wsdl:portType renaming and removal.	If backward compatibility between two consecutive versions is required, do not rename o remove a wsdl:portType.	
14.01.04-INTEV-0044	Rule	WSDL	Evolution of WSDL in SOAP based bindings: wsdl:binding definition.	If backward compatibility between two consecutive versions is required, do not change the wsdl:binding definition, in particular for the SOAP protocol:	

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Identifier	Type	Artifact	Title	Description	Rationale
				- Do not change the soap:binding style or transport protocol (RPC to Document or vice versa – Document style is recommended) - Do not change the wsdl:operations inside a wsdl:binding. - Do not change the soap:operation of a wsdl:operation. - Do not change the soap:body "use" attribute (encoded, literal, literal wrapped – the latter is recommended).	
14.01.04-INTEV-0045	Rule	WSDL	Evolution of WSDL in SOAP based bindings: wsdl:service definition.	If backward compatibility between two consecutive versions is required, do not change the wsdl:service definition, in particular: - Do not change the wsdl:service name. - Do not change the wsdl:ports inside a wsdl:service. - Change of the actual address of the service is not considered as a change of the WSDL because it is a run-time/deployment information (even if sometime is provided in the WSDL).	
14.01.04-INTEV-0046	Recommendation	WSDL	WSDL namespaces	Avoid having a single namespace mixing concepts that have different lifecycle (partitioning of the model).	
14.01.04-INTEV-0047	Recommendation	WSDL	WSDL versioning	Include the WSDL version as part of WSDL definitions for documentation purposes.	
14.01.04-INTEV-0048	Recommendation	XSD	XSD namespaces	Avoid having a single namespace mixing concepts that have different lifecycle (partitioning of the model).	
14.01.04-INTEV-0049	Recommendation	XSD	XSD versioning	Include schema version in the XSD.	
14.01.04-INTEV-0050	Recommendation	XSD	Handling Incompatible changes of XSD in SOAP based bindings	If it is required to provide compatibility techniques to handle incompatible major versions due to XSD evolution, Adapter	It should be noted that too flexible XSD (second option) may result in too generic interfaces, impacting application semantics and increasing complexity.

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Identifier	Type	Artifact	Title	Description	Rationale
				compatibility technique should be adopted OR do design the XSD as generic as possible to anticipate further evolution and use the Dynamic Binding Compatibility technique.	
14.01.04-INTEV-0051	Compatibility Assessment	XSD	Compatibility Assessment of evolution of SOAP based bindings "contract" part: XSD	If one of the following rules is violated backward compatibility between two consecutive versions is broken (no compatible change): 14.01.04-INTEV-0052 to 14.01.04-INTEV-0059. In such case, if it is required to handle incompatible major versions compatibility, recommendation 14.01.04-INTEV-0050 apply.	
14.01.04-INTEV-0052	Rule	XSD	Evolution of XSD: new data elements	If backward compatibility between two consecutive versions is required, do use optional Data Element technique for new Data Element.	
14.01.04-INTEV-0053	Rule	XSD	Evolution of XSD: temporary data elements	If backward compatibility between two consecutive versions is required, do consider as optional Data Element the elements that may be removed in further minor versions.	
14.01.04-INTEV-0054	Rule	XSD	Evolution of XSD: elements/attributes order	If backward compatibility between two consecutive versions is required, do not change order of elements/attributes in Data Element between minor versions.	
14.01.04-INTEV-0055	Rule	XSD	Evolution of XSD: new Data Element Type	If backward compatibility between two consecutive versions is required, do use Flexible Data Types technique to anticipate (in any) further modification of Data Element type and cardinality.	
14.01.04-INTEV-0056	Rule	XSD	Evolution of XSD: Data Element renaming	If backward compatibility between two consecutive versions is required, do use Selectable Data Element technique to anticipate further renaming of Data Elements.	
14.01.04-INTEV-	Rule	XSD	Evolution of XSD: Namespaces	If backward compatibility between two consecutive versions is required, do not	

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Identifier	Type	Artifact	Title	Description	Rationale
0057				change Namespaces.	
14.01.04-INTEV-0058	Rule	XSD	Evolution of XSD: Namespaces and XSD version	If backward compatibility between two consecutive versions is required, do not embed the version of the XSD within its Namespace.	New version of the XSD would imply Namespace renaming which results in an incompatible change
14.01.04-INTEV-0059	Rule	XSD	Evolution of XSD: update of Data Element QName.	If backward compatibility between two consecutive versions is required, do not change element QName when Selectable Data Element technique is not used.	
14.01.04-INTEV-0060	Recommendation	All the Bindings	Recommended Versioning Approach	It is recommended that service designers utilize a “significance of change” versioning approach with at least two levels of significance.	In SWIM-TI TAD a number of possible versioning approaches are documented. It is recommended to apply “significance of change” approach with at least two levels of significance.
14.01.04-INTEV-0061	Recommendation	All the Bindings	Recommended Interface Evolution Strategy	It is recommended that service designers utilize the Flexible Interface Evolution Strategy for managing the evolution of service technical contract.	In SWIM-TI TAD a number of possible Interface Evolution Strategies are documented (Strict Strategy, Flexible Strategy and Loose Strategy). Taking into account the pros and cons (see SWIM-TI TAD) it is recommended to apply Flexible Strategy.
14.01.04-INTEV-0062	Recommendation	All the Bindings	Balance between evolution flexibility and contract effectiveness	It is recommended that service designers consider the right balance of technical contract evolution flexibility as it comes with the cost of vague and undefined interfaces.	In SWIM-TI TAD a number of possible Interface Evolution Strategies are documented (Strict Strategy, Flexible Strategy and Loose Strategy). Service designers are expected to maximize (when possible and when future planned versions are already known) the use of recommended rules for achieving forwards compatibility. This may result in a vague technical contract. According to that, service designers are recommended to consider the right balance.
14.01.04-INTEV-0090	Recommendation	WS-SecurityPolicy	Handling Incompatible changes of WS-SecurityPolicy in SOAP based bindings	If it is required to provide compatibility techniques to handle incompatible major versions due to WS-SecurityPolicy evolution, Adapter compatibility technique should be adopted.	
14.01.04-INTEV-0091	Compatibility Assessment	WS-SecurityPolicy	Compatibility Assessment of evolution of SOAP based bindings "contract" part: WS-SecurityPolicy	If one of the following rules is violated backward compatibility between two consecutive versions is broken (no compatible change): 14.01.04-INTEV-0092 to 14.01.04-INTEV-0097. In such case, recommendations 14.01.04-	

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Identifier	Type	Artifact	Title	Description	Rationale
				INTEV-0090 applies if it is required to handle incompatible major versions compatibility. Policy expressions/assertions modelled using a new version of the WS-Policy/WS-SecurityPolicy standard language/framework. A possible example is the update of the existing Policy by introducing new assertions/attributes/elements expressed using a new WS-Policy/WS-SecurityPolicy standard version. According to the extensibility points defined in WS-Policy, such updated Policy can be modelled to ensure backward compatibility. The detailed analysis of this kind of evolution is currently out of scope. Valuable examples and consideration are available in W3C Web Services Policy 1.5 – Primer §4.	
14.01.04-INTEV-0092	Rule	WS-SecurityPolicy	Evolution of WS-SecurityPolicy: Policy Identification attributes.	If backward compatibility between two consecutive versions is required, do not rename Policy Identification attributes (wsp:Policy/@Name, or wsp:Policy/@wsu:Id or wsp:Policy/@xml:id).	Updates of Policy Identification attributes. Irrespective of the artefact (ATM Service WSDL, standalone Policies WSDL, Policies XML) containing the Policy and of the mechanisms for Policy Retrieval, the renaming of wsp:Policy/@Name or wsp:Policy/(@wsu:Id | @xml:id) attributes is an incompatible change. These changes are incompatible changes because that does not allow service consumers to continue using the attachment points as (wsp:PolicyReference) defined in the older WSDL in a backward compatible manner.
14.01.04-INTEV-0093	Rule	WS-SecurityPolicy	Evolution of WS-SecurityPolicy: Attachment of new policies to Endpoint and/or Operations and/or Message Policy Subject.	If backward compatibility between two consecutive versions is required, do not attach a completely new policy to Endpoint and/or Operations and/or Message Policy Subject.	Attachment of new policies to Endpoint and/or Operations and/or Message Policy Subject. In this case a completely new Policy is attached to one or more Policy Subject (WSDL update). These changes are incompatible changes because that does not allow service consumers to continue using the attachment points as defined in the older WSDL in a backward compatible manner.
14.01.04-INTEV-0094	Rule	WS-SecurityPolicy	Evolution of WS-SecurityPolicy: Detach Policies attached to	If backward compatibility between two consecutive versions is required, do not detach a policy from Endpoint and/or	Detach Policies attached to Endpoint and/or Operations and/or Message Policy Subject. In this case an existing Policy is detached from one or more Policy Subject (WSDL update).

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Identifier	Type	Artifact	Title	Description	Rationale
			Endpoint and/or Operations and/or Message Policy Subject.	Operations and/or Message Policy Subject.	These changes are incompatible changes because that does not allow service consumers to continue using the attachment points as defined in the older WSDL in a backward compatible manner.
14.01.04-INTEV-0095	Compatibility Assessment	WS-SecurityPolicy	Evolution of WS-SecurityPolicy: New or updated Security Policy expressions.	Policy expressions (including WS-SecurityPolicy) modelled in accordance with Web Services Policy (WS-Policy) language enable basic versioning practices that allow service consumers to continue the use of older policy alternatives in a backward compatible manner. This versioning practice allows service providers, to deploy new behaviours using additional (or new) policy assertions without breaking compatibility with consumers that rely on any older policy alternatives. This basic versioning practices is based on Policy Operators specified in the WS-Policy standard. In accordance with WS-Policy, behaviours (capabilities and requirements) are expressed through Policy assertions and the assertions are combined using operators: wsp:Policy, wsp:All and wsp:ExactlyOne. These operators can be nested within each other according to the following rules (see WS-Policy): Equivalence; Empty (zero policy assertions and/or zero policy alternatives); Commutative; Associative; Idempotent; Distributive.	Combining policy assertions using the wsp:Policy or wsp:All operator means that all the behaviours represented by these assertions are required. (logical AND). Policy assertions combined using the wsp:ExactlyOne operator requires exactly one of the behaviours represented by the assertions (logical XOR). In other words, the wsp:ExactlyOne operator allows to express policy alternative (note: policy assertions can be marked optional - wsp:Optional attribute - to represent behaviours that may be or not engaged. At the end this will result in two policy alternatives - wsp:ExactlyOne - one with the assertion and one without).
14.01.04-INTEV-0096	Rule	WS-SecurityPolicy	Evolution of WS-SecurityPolicy: new policy assertions.	If backward compatibility between two consecutive versions is required and new policy assertions have to be added, do preserve policy assertions of previous versions by modelling them as policy alternatives and by designing the updated Policy using wsp:Policy, wsp:All and wsp:ExactlyOne operators.	This rule covers also the case where in the previous version no specific policy assertion were included (e.g. no Integrity Assertions). In this case the backward compatibility is achieved by relying on the rule for empty wsp:All/Policy (<wsp:All />) and by introducing policy alterative (wsp:ExactlyOne). For instance, if in the previous version of the Policy no assertions about encrypted parts were included and in the new version it is required to require the encryption of the soap body, the new policy should be as (simplified):

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Identifier	Type	Artifact	Title	Description	Rationale
					<wsp:Policy> [...] <wsp:ExactlyOne> <wsp:All> <sp:EncryptedParts> <sp:Body/> </sp:EncryptedParts> </wsp:All> <wsp:All/> </wsp:ExactlyOne> [...] </wsp:Policy> where policy alternative <wsp:All/> allows backward compatibility (no encryption of the soap body).
14.01.04-INTEV-0097	Rule	WS-SecurityPolicy	Evolution of WS-SecurityPolicy: new policy assertions.	If backward compatibility between two consecutive versions is required, do not remove any policy assertion.	See 14.01.04-INTEV-0096.
14.01.04-INTEV-0098	Recommendation	WS-SecurityPolicy	Evolution of WS-SecurityPolicy: WS-SecurityPolicy sp:AlgorithmSuite.	If backward compatibility between two consecutive versions is required and provided backward compatibility rules cannot accommodate the change, it is recommended to restrict changes to WS-SecurityPolicy sp:AlgorithmSuite element to algorithms and key sizes categorized as REQUIRED in the XML Encryption and XML Signature W3C's recommendation.	Algorithms and key sizes REQUIRED by W3C recommendations are supported by all W3C compliant implementations hence ensuring compatibility between them.
14.01.04-INTEV-0099	Recommendation	WS-SecurityPolicy	Evolution of WS-SecurityPolicy: use of wsp:PolicyReference.	It is recommended to use wsp:PolicyReference WS-Policy element to attach policies to Policy Subjects.	Well-known best practice increasing the reuse of policies and facilitating applicable artefacts (e.g. WSDL) evolution.
14.01.04-INTEV-0100	Recommendation	WS-SecurityPolicy	Evolution of WS-SecurityPolicy: Policy and WSDL.	It is recommended to do not include the definition of the Policy within the WSDL where Policy Subjects are defined.	Well-known best practice increasing the reuse of policies, facilitating applicable artefacts (e.g. WSDL) evolution and enabling Policy configuration management and governance. If applied, this recommendation requires to use wsp:PolicyReference with absolute URI reference to the policy. Two possible options exist to implement this recommendation: a) Policy/Policies defined in a WSDL file and imported in the

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Identifier	Type	Artifact	Title	Description	Rationale
					service WSDL using WSDL import (in this case the Policy Name attribute is required in the Policy definition and used in the wsp:PolicyReference. For instance: Policies WSDL (simplified): <?xml version="1.0" encoding="UTF-8"?> <definitions xmlns:tns=http://examples.policies.eu/ targetNamespace="http://examples.policies.eu/" name="Policies" > [...] <wsp:Policy Name="http://examples.policies.eu/PolicyA" > [...] </wsp:Policy> <wsp:Policy Name="http://examples.policies.eu/PolicyB" > [...] </wsp:Policy> </definitions> Service WSDL (simplified) <?xml version="1.0" encoding="UTF-8"?> <definitions ... > [...] <import namespace=http://examples.policies.eu location=".../Policies.wsdl"/> [...] <binding name="SecureSwimming" type="tns:..."> <wsp:PolicyReference URI="http://examples.policies.eu/PolicyA"/> [...] </binding> [...] </definitions> b) Policy/Policies defined in a standalone XML file available at a given URL (in this case the Policy wsu:Id attribute is required in the Policy definition and used in the wsp:PolicyReference. For instance: Policies XML (simplified) available at http://examples.policies.eu/ : <?xml version="1.0" encoding="UTF-8"?>

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Identifier	Type	Artifact	Title	Description	Rationale
					<policies... > [...] <wsp:Policy wsu:Id=”PolicyA” > [...] </wsp:Policy> <wsp:Policy wsu:Id=”PolicyB” > [...] </wsp:Policy> </policies> Service WSDL (simplified) <?xml version="1.0" encoding="UTF-8"?> <definitions ... > [...] <binding name="SecureSwimming" type="tns:...”> <wsp:PolicyReference URI="http://examples.policies.eu#PolicyA "/> [...] </binding> [...] </definitions>
14.01.04-INTEV-0101	Compatibility Technique	WS-N Specific	Compatibility Technique to handle incompatible evolution of WS-N Specific artifacts: Topic type XSD (Physical Data Exchange Model) incompatible changes	If it is required to provide compatibility techniques to handle incompatible versions due to Topic type XSD (Physical Data Exchange Model) evolution, Adapter compatibility technique should be adopted by publishing on the same WS-Topic both incompatible versions. This is technique is recommended to be used ONLY in transition/migration phase.	WS Topics allows distributing over the same Topic different domain specific types. The implementation of Adapter Compatibility technique in this case consists of duplicating data published on a given topic. For instance, we could have the case where over Topic T1 are published TypeA-v1.5 (XML according to XSD) and TypeB-v2.0 (XML according to XSD). Due to Topic type XSD (Physical Data Exchange Model) evolution, a new major version of Type A XSD is produced (e.g. TypeA-v2.0) and this version is not backward compatible with previous version (TypeA-v1.5). The implementation of the Adapter Compatibility technique consists in the extension of Topic T1 definition adding the new type: TypeA-v1.5, TypeB-v2.0, TypeA-v2.0. This allows existing (previous version) notification consumers to subscribe to TypeA-v1.5 (and eventually to plan migration to TypeA-v2.0). On the other hand Notification producers of TypeA have to publish each instance of that type: one conformant with TypeA-v1.5 and one conformant with

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Identifier	Type	Artifact	Title	Description	Rationale
					TypeA-v2.0. This results in a relevant overhead at Notification Producers side. This is why Adapter Compatibility technique implemented as describe above is recommended to be used ONLY in transition/migration phase.
14.01.04-INTEV-0102	Compatibility Technique	WS-N Specific	Compatibility Technique to handle incompatible evolution of WS-N Specific artifacts: WS Topic Namespace incompatible changes	If it is required to provide compatibility techniques to handle incompatible versions due to WS Topic Namespace evolution, Adapter compatibility technique should be adopted by supporting in parallel both new and previous versions (e.g. previous and new Topic QName). This is technique is recommended to be used ONLY in transition/migration phase.	In order to avoid naming collisions, and to facilitate interoperation between independently developed NotificationProducers and Consumers, each WS-Notification Topic is assigned to an XML Namespace. The set of Topics associated with a given XML Namespace is termed a Topic Namespace. WS-Topic defines a Topic Namespace document associated with a single Topic Namespace and that contains the names of Topics in that Topic Namespace along with their metadata (e.g. message types). WS-Topic defines a Topic Set document that gives an XML representation of the set of Topics (from one or more Topic Namespaces) supported by a NotificationProducer. Topics are referred to by TopicExpressions. The purpose of a TopicExpression is to identify a set of one or more Topics from one or more Topic Namespaces. Changes in the Topic Namespace (possibly impacting then any related Topic Set for one or more Notification Producers and Topic Expressions) may or may not result in incompatible changes. The recomended technique has to be used ONLY in transition/migration phase.
14.01.04-INTEV-0103	Compatibility Assessment	WS-N Specific	Compatibility Assessment of evolution of WS-N Specific artifacts: Filter Expression	The types and the support of Filter Expression is considered optional in WS-N standard. This implies that ATM Service technical contract based on that standard should not mandate the use of any specific filtering capability. Being these features optional, the evolution of supported Filter Expression is always backward compatible.	In case for a specific service the support of a given Filter Expression is considered mandatory (constraining OASIS standard), changes in Filter Expression may result in compatible or incompatible changes.
14.01.04-INTEV-0104	Compatibility Assessment	WS-N Specific	Compatibility Assessment of evolution of WS-N Specific artifacts: Topic Expression	Changes in WS-Topic and WS-TopicNamespace definitions may affect backward compatibility of Topic Expression. For instance, if the QName of a given Topic is modified, the existing Topic Expression used	

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Identifier	Type	Artifact	Title	Description	Rationale
				to select (among the other) that topic may be not applicable resulting in (e.g.) problems in subscription matching.	
14.01.04-INTEV-0105	Compatibility Assessment	WS-N Specific	Compatibility Assessment of evolution of WS-N Specific artifacts: Topic Expression Dialects	Changes in supported WS-Topic Topic Expression Dialects to the more flexible ones results in backwards compatible changes.	According to WS-Topic following considerations apply: (i) Simple TopicExpression Dialect. In this dialect the TopicExpression is simply the QName of a root Topic, consisting of a namespace prefix that identifies the Topic Space, and a local name that identifies the root Topic within that Topic Space (e.g. xmlns:tns=http://example.org/topics/example, tns:t1). This is the simplest dialect that could be supported. (ii) Concrete TopicExpression Dialect. The Concrete TopicExpression is used to identify a single Topic within a Topic Namespace, using a path notation. As it uses a path notation, it can identify any Topic within a Topic Namespace – it is not limited to root Topics (e.g. xmlns:tns=http://example.org/topics/example, tns:t1/t3). Simple TopicExpression Dialect introduced above is a subset of the Concrete TopicExpression Dialect. This means that such evolution in supporting this dialect will not break backward compatibility because Topic Expressions based on the Simple dialect will be still supported. (iii) Full TopicExpression Dialect. This dialect allows TopicExpressions that identify more than one Topic (possibly from multiple Topic Namespaces). Full TopicExpressions are XPath 1.0 relative location path expressions with some additional syntactic constraints (e.g. “tns:t1/*”, “tns://*”, etc.). This dialect extends the Concrete TopicExpression dialect, in the sense that every expression in the Concrete TopicExpression dialect is also valid in the Full TopicExpression dialect. This means that such evolution in supporting this dialect will not break backward compatibility because Topic Expressions based on the Simple/Concrete dialects will be still supported. (iv) XPath TopicExpression Dialect. It extends previous dialect by allowing a richer set of selection possibilities since the full range of XPath 1.0 is allowed. This dialect extends the Full

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Identifier	Type	Artifact	Title	Description	Rationale
					TopicExpression dialect in the sense that every expression in the Full TopicExpression is also valid in the XPath TopicExpression dialect. This means that such evolution in supporting this dialect will not break backward compatibility because Topic Expressions based on the Simple/Concrete/Full dialects will be still supported.
14.01.04-INTEV-0106	Recommendation	WS-N Specific	Handling Incompatible changes of WS-N Specific artifacts in SOAP based bindings	If it is required to provide compatibility techniques to handle incompatible major versions due to WS-SecurityPolicy evolution, Adapter compatibility technique should be adopted. In such case 14.01.04-INTEV-0101 and 14.01.04-INTEV-0102 apply.	
14.01.04-INTEV-0107	Compatibility Assessment	WS-N Specific	Compatibility Assessment of evolution ofWS-N Specific artifacts	If one of the following rules is violated backward compatibility between two consecutive versions is broken (no compatible change): 14.01.04-INTEV-0108 to 14.01.04-INTEV-0111. In such case, recommendations 14.01.04-INTEV-0106 applies if it is required to handle incompatible major versions compatibility. Evolution of OASIS WS-N WSDLs and XSDs are not analyzed in detail because their lifecycle is outside ATM Service STDD ones. Furthermore, it is assumed that OASIS WS-N implementations comply with the standard in terms of mandatory and optional features, operations behavior and messages format and content (e.g. mandatory soap actions). Rules and recommendations identified for the XSD artifacts apply to Physical Data Exchange Model schema evolution (see WS-Topic TopicNamespace Topic messageTypes property). Physical Data Exchange Model represents the definition of the Topic type (XSDs for published data).	
14.01.04-INTEV-	Rule	WS-N Specific	Evolution of WS-N Specific artifacts: new	If backward compatibility between two consecutive versions is required, do not	

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Identifier	Type	Artifact	Title	Description	Rationale
0108			policy assertions.	change Topic Namespace.	
14.01.04-INTEV-0109	Rule	WS-N Specific	Evolution of WS-N Specific artifacts: new policy assertions.	If backward compatibility between two consecutive versions is required, do not change the name of the topic.	
14.01.04-INTEV-0110	Rule	WS-N Specific	Evolution of WS-N Specific artifacts: new policy assertions.	If backward compatibility between two consecutive versions is required, do not change the hierarchy/tree of the topic (e.g. name of the root/parent Topic, etc.).	
14.01.04-INTEV-0111	Rule	WS-N Specific	Evolution of WS-N Specific artifacts: new policy assertions.	If backward compatibility between two consecutive versions is required, do not change Topic wstop:topic attribute.	
14.01.04-INTEV-0112	Recommendation	AMQP 1.0 Binding Structural elements	Evolution of AMQP 1.0 Binding Structural elements	Changes in AMQP 1.0 Binding Structural elements are recommended to result in a new major version of the STDD. The choice to use a minor version in case of compatible changes is left up to service designers although they are considered sufficiently fundamental to justify a major version change for documentation purposes.	
14.01.04-INTEV-0113	Recommendation	AMQP 1.0 Bindings	AMQP 1.0 native features based Adapter Compatibility technique realization	Adapter Compatibility techniques to handle Incompatible changes in AMQP 1.0 based bindings should be realized using AMQP 1.0 native features.	
14.01.04-INTEV-0114	Recommendation	AMQP 1.0 Bindings	AMQP 1.0 bindings support of dynamic Content-type discovery technique.	When multiple Content-type-Content-encoding pairs are supported and when it is foreseen that new Content-type-Content-encoding pairs may be supported in the future, it is recommended to adopt dynamic Content-type discovery technique.	Dynamic Content-type discovery technique allows consumers to dynamically discover what Content-type-Content-encoding pair is used for a given message. This technique is needed and useful when multiple Content-type-Content-encoding pairs are supported in a fixed version of the contract but it is also useful to be able to anticipate the ability to process new pairs that may be added in future versions.
14.01.04-INTEV-0115	Recommendation	AMQP 1.0 Bindings	Handling Incompatible changes of AMQP 1.0 bindings contract elements	If it is required to provide compatibility techniques to handle incompatible major versions due to AMQP 1.0 Bindings contract elements evolution, Adapter compatibility technique should be adopted. In such case 14.01.04-INTEV-0113 applies.	
14.01.04-	Compatibility	AMQP 1.0	Compatibility Assessment	If one of the following rules is violated	

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Identifier	Type	Artifact	Title	Description	Rationale
INTEV-0116	Assessment	Bindings	of evolution of AMQP 1.0 bindings contract elements	backward compatibility between two consecutive versions is broken (no compatible change): 14.01.04-INTEV-0118 to 14.01.04-INTEV-0125. In such case, recommendations 14.01.04-INTEV-0115 applies if it is required to handle incompatible major versions compatibility.	
14.01.04-INTEV-0117	Compatibility Assessment	AMQP 1.0 Bindings	Compatibility Assessment of evolution of AMQP 1.0 bindings contract elements: reference XSDs for application/xml or text/xml Content-type.	In case the content-type references the MIME type application/xml or text/xml, all XML related recommendations and rules are applicable	In such case, recommendations 14.01.04-INTEV-0115 applies if it is required to handle incompatible major versions compatibility.
14.01.04-INTEV-0118	Rule	AMQP 1.0 Bindings	Evolution of AMQP 1.0 bindings contract elements: supported Content-type-Content-encoding pairs.	If backward compatibility between two consecutive versions is required, do not remove the support of Content-type-Content-encoding pair supported in the previous version.	The removal of the support of one or more Content-type-Content-encoding pairs in a new version is an incompatible change.
14.01.04-INTEV-0119	Rule	AMQP 1.0 Bindings	Evolution of AMQP 1.0 bindings contract elements: use of element from header, delivery-annotations, message-annotations, properties and application-properties.	If backward compatibility between two consecutive versions is required, do not change semantic and syntax of element from header and/or delivery-annotations and/or message-annotations and/or properties and/or application-properties used in the previous version.	Semantic and syntax changes of element from header, delivery-annotations, message-annotations, properties and application-properties are incompatible changes.
14.01.04-INTEV-0120	Rule	AMQP 1.0 Bindings	Evolution of AMQP 1.0 bindings contract elements: use of element from header, delivery-annotations, message-annotations, properties and application-properties.	If backward compatibility between two consecutive versions is required, do not change name/type/format of element from header and/or delivery-annotations and/or message-annotations and/or properties and/or application-properties used in the previous version.	Changes of element from header, delivery-annotations, message-annotations, properties and application-properties name/type/format are incompatible changes.
14.01.04-INTEV-0121	Rule	AMQP 1.0 Bindings	Evolution of AMQP 1.0 bindings contract elements: use of element	If backward compatibility between two consecutive versions is required, do not remove the support of non-optional use of	The non-use of non-optional element from header and/or delivery-annotations and/or message-annotations and/or properties and/or application-properties used in the previous

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Identifier	Type	Artifact	Title	Description	Rationale
			from header, delivery-annotations, message-annotations, properties and application-properties.	element from header and/or delivery-annotations and/or message-annotations and/or properties and/or application-properties used in the previous version.	version is an incompatible change.
14.01.04-INTEV-0122	Rule	AMQP 1.0 Bindings	Evolution of AMQP 1.0 bindings contract elements: use of element from header, delivery-annotations, message-annotations, properties and application-properties.	If backward compatibility between two consecutive versions is required, do consider optional the use of element from header and/or delivery-annotations and/or message-annotations and/or properties and/or application-properties not used in the previous version.	By considering optional the use of element from header and/or delivery-annotations and/or message-annotations and/or properties and/or application-properties not used in the previous version ensures backward compatibility.
14.01.04-INTEV-0123	Rule	AMQP 1.0 Bindings	Evolution of AMQP 1.0 bindings contract elements: use of element from header, delivery-annotations, message-annotations, properties and application-properties.	If backward compatibility between two consecutive minor versions is required, do consider as optional-use the support of element from header and/or delivery-annotations and/or message-annotations and/or properties and/or application-properties that may be removed in further versions.	By considering optional the use of element from header and/or delivery-annotations and/or message-annotations and/or properties and/or application-properties that may be removed in further versions ensures both forward and backward compatibility.
14.01.04-INTEV-0124	Rule	AMQP 1.0 Bindings	Evolution of AMQP 1.0 bindings contract elements: addressing format.	If backward compatibility between two consecutive versions is required, do not change addressing format.	Changes in addressing format is an incompatible changes.
14.01.04-INTEV-0125	Rule	AMQP 1.0 Bindings	Evolution of AMQP 1.0 bindings contract elements: filter format.	If backward compatibility between two consecutive versions is required, do make sure changes in supported filter format preserve filters used in previous version.	To ensure backward compatibility (if required), changes in supported filter format should be such as filters used in previous version do still match and they are still valid.
14.01.04-INTEV-0144	Recommendation	Plain Old XML Binding Structural elements	Evolution of Plain Old XML (POX) Binding Structural elements	Changes in Plain Old XML (POX) Binding Structural elements are recommended to result in a new major version of the STDD. The choice to use a minor version in case of compatible changes is left up to service designers although they are considered sufficiently fundamental to justify a major version change for documentation purposes.	

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Identifier	Type	Artifact	Title	Description	Rationale
14.01.04-INTEV-0145	Recommendation	Plain Old XML Bindings	Plain Old XML Bindings (POX) native features based Adapter Compatibility technique realization	Adapter Compatibility techniques to handle Incompatible changes in Plain Old XML (POX) based bindings should be realized using native features.	
14.01.04-INTEV-0146	Recommendation	Plain Old XML Bindings	Handling Incompatible changes of Plain Old XML bindings contract elements	If it is required to provide compatibility techniques to handle incompatible major versions due to Plain Old XML Bindings contract elements evolution, Adapter compatibility technique should be adopted. In such case 14.01.04-INTEV-0145 applies.	
14.01.04-INTEV-0147	Compatibility Assessment	Plain Old XML Bindings	Compatibility Assessment of evolution of Plain Old XML (POX) bindings contract elements: reference XSDs for application/xml or text/xml Content-type.	All XML related recommendations and rules are applicable	If it is required to handle incompatible major versions compatibility, recommendation 14.01.04-INTEV-0146 applies.
14.01.04-INTEV-0148	Recommendation	HTTP/REST Binding Structural elements	Evolution of HTTP/REST Binding Structural elements	Changes in HTTP/REST Binding Structural elements are recommended to result in a new major version of the STDD. The choice to use a minor version in case of compatible changes is left up to service designers although they are considered sufficiently fundamental to justify a major version change for documentation purposes.	
14.01.04-INTEV-0149	Recommendation	HTTP/REST Bindings	Plain HTTP/REST native features based Adapter Compatibility technique realization	Adapter Compatibility techniques to handle Incompatible changes in HTTP/REST based bindings should be realized using native features.	
14.01.04-INTEV-0150	Recommendation	HTTP/REST Bindings	Handling Incompatible changes of HTTP/REST bindings contract elements	If it is required to provide compatibility techniques to handle incompatible major versions due to HTTP/REST Bindings contract elements evolution, Adapter compatibility technique should be adopted. In such case 14.01.04-INTEV-0149 applies.	
14.01.04-	Compatibility	HTTP/REST	Compatibility Assessment	In case the content-type references the	If it is required to handle incompatible major versions

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Identifier	Type	Artifact	Title	Description	Rationale
INTEV-0151	Assessment	Bindings	of evolution of HTTP/REST bindings contract elements: reference XSDs for application/xml or text/xml Content-type.	MIME type application/xml or text/xml, all XML related recommendations and rules are applicable	compatibility, recommendation 14.01.04-INTEV-0146 applies.
14.01.04-INTEV-0152	Compatibility Assessment	HTTP/REST Bindings	Compatibility Assessment of evolution of HTTP/REST bindings contract elements	If one of the following rules is violated backward compatibility between two consecutive versions is broken (no compatible change): 14.01.04-INTEV-0153 to 14.01.04-INTEV-0160. In such case, recommendations 14.01.04-INTEV-0146 applies if it is required to handle incompatible major versions compatibility.	
14.01.04-INTEV-0153	Rule	HTTP/REST Bindings	Evolution of HTTP/REST bindings contract elements: supported Content-type-Content-encoding pairs.	If backward compatibility between two consecutive versions is required, do not remove the support of Content-type-Content-encoding pair supported in the previous version.	The removal of the support of one or more Content-type-Content-encoding pairs in a new version is an incompatible change.
14.01.04-INTEV-0154	Rule	HTTP/REST Bindings	Evolution of HTTP/REST bindings contract elements: URLs-Protocol semantic change.	If backward compatibility between two consecutive versions is required, do not change the semantic of the HTTP verbs GET, POST, PUT, DELETE and HEAD.	
14.01.04-INTEV-0155	Rule	HTTP/REST Bindings	Evolution of HTTP/REST bindings contract elements: URLs-Resource semantic.	If backward compatibility between two consecutive versions is required, do not change existing resource semantic. In particular do not change the location of a particular resource in the resource tree.	This rule is applicable to GET, DELETE and HEAD HTTP verbs. Below are examples of validity of some changes starting from a version 1 resources tree R/R2/R3. - Compatible change: R/R1/[R2 | R3]. - Compatible change: R/R1/R2/R3. - Incompatible change: R/R1/R3/R2.
14.01.04-INTEV-0156	Recommendation	HTTP/REST Bindings	Evolution of HTTP/REST bindings contract elements: Version in URL.	Do not embed the minor version of the service interface within the URL.	This rule is applicable to GET, DELETE and HEAD HTTP verbs.
14.01.04-INTEV-0157	Rule	HTTP/REST Bindings	Evolution of HTTP/REST bindings contract elements: URLs-Argument name.	If backward compatibility between two consecutive versions is required, do not change argument name in the URL.	This rule is applicable to GET, DELETE and HEAD HTTP verbs.
14.01.04-INTEV-	Rule	HTTP/REST Bindings	Evolution of HTTP/REST bindings contract	If backward compatibility between two consecutive versions is required, do consider	This rule is applicable to GET, DELETE and HEAD HTTP verbs.

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Identifier	Type	Artifact	Title	Description	Rationale
0158			elements: URLs-New argument.	any new argument in the URL as optional.	
14.01.04-INTEV-0159	Rule	HTTP/REST Bindings	Evolution of HTTP/REST bindings contract elements: URLs-Argument removal.	If backward compatibility between two consecutive versions is required, do not remove any argument from the URL unless a meaningful default value can be provided for any request.	This rule is applicable to GET, DELETE and HEAD HTTP verbs.
14.01.04-INTEV-0160	Rule	HTTP/REST Bindings	Evolution of HTTP/REST bindings contract elements: JSON related changes.	If application/json MIME type is used and backward compatibility between two consecutive versions is required, do not change the meaning of any name, term or custom keyword used in the previous version of the JSON schema.	This rule is applicable to GET, POST and PUT HTTP verbs. "Compatibility" is evaluated at the JSON object level. A new version of a schema shall be deemed to be "backward compatible" if all instance objects that were valid according to a previous version are valid according to the new version.

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