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SORT

SAFELY OPTIMISED RUNWAY THROUGHPUT

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Abstract

This document constitutes the DEMO Report-Part III Human Performance Assessment Report (HPAR) for WP5, hence is part of the contractual deliverable D1.4 (DEMOR). It contains the Human Performance (HP) assessment for the VLD-03-004 exercise of WP5 which consists of the HP assessment plan, the results of the HP activities conducted according to the HP assessment process, newly identified issues and the HP recommendations & requirements. It corresponds to the completion of the four steps of the Human Performance assessment process, namely: Step 1 – Understand the concept: Baseline, Solution and Assumptions, Step 2 – Understand the Human Performance Implications, Step 3 – Improve and Validate the concept and Step4 – Collate findings & conclude on transition to next V-phase.

Table of Contents

Abstract	4
1 Executive Summary.....	6
2 Introduction.....	7
2.1 Purpose of the document.....	7
2.2 Intended readership	7
2.3 Structure of the document.....	8
2.4 Acronyms and Terminology	8
3 The Human Performance Assessment Process: Objective and Approach.....	10
4 Human Performance Assessment	12
4.1 Step 1 Understand the ATM concept	12
4.2 Step 2 Understand the HP implications.....	14
4.3 Step 3 Improve and validate the concept.....	15
4.4 Step 4 Collate findings & conclude on transition to next V-phase	17
5 References	23
Appendix A – Additional HP activities conducted.....	24
Appendix B – HP Recommendations Register	25
Appendix C – HP Requirements Register	30
Appendix D – HP Log.....	31

List of Tables

Table 1: Acronyms and terminology	9
Table 2: Description of the change	14
Table 4: Description of Activity 1	15
Table 5: Summary of the HP results and recommendations/ requirements for each identified issue & related argument	21
Table 6: HP recommendations	29

List of Figures

Figure 1: Steps of the HP assessment process	11
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1 Executive Summary

This document is the Human Performance Assessment Report for the VLD-03-004 Exercise under WP5 of the SESAR 2020 VLD3-W2-SORT project. It constitutes Part-III for WP5 of the contractual deliverable D1.4 (DEMOR). This document presents the results with focus on Human Performance aspects of the Very Large Demonstration (VLD) of the Integrated Runway Sequence Function (IRSF), based on the PJ02-08-01 solution.

As the VLD is a *demonstration*, the role of the ATCOs was to observe, and as such, the Human Performance assessment is based on observed experience of the system, when presented with live traffic and also with recordings of specific live traffic situations.

In accordance with the HP Assessment Guidance process, and through consideration of project documentation including the results of the V3 phase, the following main HP objectives for the concept can be summarized as follows:

- Demonstrate ATCO acceptability of the procedures associated with the IRSF.
- Address potential evolution in ATCO workload.
- Address impact of IRSF on ATCO situational awareness.
- Address the effect of the HMI on ATCO situational awareness.

The HP evaluation process has been performed as an iterative process over a series of demonstration exercises, where feedback from ATCOs was used both for the final HP assessment report but also iteratively for the development of the assessment process.

2 Introduction

This document is the Human Performance Assessment Report (HPAR) for the VLD-03-004 Exercise under WP5, which is a live trial demonstration of the Integrated Runway Sequence Function, developed by SINTEF. It was conducted at Stockholm ATCC building (conference room) with live data, Arlanda Tower (conference room) with recorded data and at Malmö ATCC (simulator room) with both live data and recorded data. The operational environment is Stockholm-Arlanda approach and tower.

The demonstration was performed with shadow-mode technique in localities separate from the operations room and no Air Traffic Controller was asked to act on the information provided by the shadow-mode system and no aircraft was given instructions based on it.

The concept was validated and verified in V3, and documented in part IV of the Operational Services and Environment Definition (OSED) for SESAR Solution 02-08 for V3.

The purpose of this demonstration was to give ground ATM actors and stakeholders a demonstration of the concept with live traffic, and provide participants with useful insight in the benefits to capacity, safety, predictability and environmental impacts of the solution. It also gave the opportunity for further feedback from ATCOs, airport users and ANS users.

2.1 Purpose of the document

The purpose of this document is to present the results from assessing the impact of the integrated runway sequence function on human performance (HP)

2.2 Intended readership

The intended audience for this document are the team members of the DEMO VLD3-04.

HP practitioners at the level of the transversal areas are also expected to have an interest in this document.

Other stakeholders that may be interested in this document are to be found among:

- ANS providers
- Airport owners / providers
- Airspace users

2.3 Structure of the document

This document is structured as follows:

- **Section 1** provides an executive summary of the document.
- **Section 2** (this section) introduces the document.
- **Section 3** provides a short overview of the Human Performance assessment process.
- **Section 4** presents the activities performed and the findings obtained from the Human Performance assessment steps conducted and completed to date.
- **Section 5** lists the documents referenced in this document.

2.4 Acronyms and Terminology

Term	Description
Human Factors (HF)	HF is used to denote aspects that influence a human's capability to accomplish tasks and meet job requirements. These can be external to the human (e.g. light & noise conditions at the work place) or internal (e.g. fatigue). In this way, "Human Factors" can be considered as <i>focussing on the variables that determine Human Performance</i> .
Human Performance (HP)	HP is used to denote the human capability to successfully accomplish tasks and meet job requirements. In this way, "Human Performance" can be considered as <i>focussing on the observable result of human activity in a work context</i> . Human Performance is a function of Human Factors (see above). It also depends on aspects related to Recruitment, Training, Competence, and Staffing (RTCS) as well as Social Factors and Change Management.
HP activity	An HP activity is an evidence-gathering activity carried out as part of Step 3 of the HP assessment process. An HP activity can relate to, among others, task analyses, cognitive walkthroughs, and experimental studies.
HP argument	An HP argument is an HP claim that needs to be proven through the HP Assessment Process.
HP assessment	An HP assessment is the documented result of applying the HP assessment process to the SESAR Solution-level. HP assessments provide the input for the HP case.
HP assessment process	The HP assessment process is the process by which HP aspects related to the proposed changes in SESAR are identified and addressed. The development of this process constitutes the scope of Project 16.04.01. It covers the conduct of HP assessments on the Solution-level as well as the HP case building over larger clusters of Solutions.

HP benefit	An HP benefit relates to those aspects of the proposed ATM concept that are likely to have a positive impact on human performance.
HP case	An HP case is the documented result of combining HP assessments from Solutions into larger clusters (SESAR Projects, deployment packages) in SESAR.
HP issue	An HP issue relates to those aspects in the ATM concept that need to be resolved before the proposed change can deliver the intended positive effects on Human Performance.
HP impact	An HP impact relates to the effect of the proposed solution on the human operator. Impacts can be positive (i.e. leading to an increase in Human Performance) or negative (leading to a decrease in Human Performance).
HP recommendations	HP recommendations propose means for mitigating HP issues related to a specific operational or technical change. HF recommendations are proposals that require additional analysis (i.e. refinement and validation). Once this additional analysis is performed, HF recommendations may be transformed into HF requirements.
HP requirements	HP requirements are statements that specify required characteristics of a solution from an HF point of view. HP requirements should be integrated into the DOD, OSED, SPR, or specifications. HF requirements can be seen as the stable result of the HF contribution to the Solution, leading to a redefinition of the operational concept or the specification of the technical solution.

Table 1: Acronyms and terminology

3 The Human Performance Assessment Process: Objective and Approach

The purpose of the HP assessment process described in detail in Human Performance Guidance document (see latest version in Program Library) is to ensure that HP aspects related to SESAR DEMO technical and operational developments are systematically identified and managed. The SESAR HP assessment process uses an ‘argument’ and ‘evidence’ approach. An HP argument is an ‘HP claim that needs to be proven’. The aim of the HP assessment is to provide the necessary ‘evidence’ to show that the HP arguments impacted have been considered and satisfied by the HP assessment process. This includes the identification of HP requirements and recommendations to support the design and development of the concept, which will be defined in the HP Assessment Report

The HP assessment process is a four-step process. Figure 1 provides an overview of these four steps with the tasks to be carried out and the two main outputs (i.e. HP plan and HP assessment report). In addition, an HP Log is recommended to be maintained throughout the lifecycle of the DEMO in which all the data/ information obtained from all HP activities conducted as part of the HP assessment is documented. It was agreed in V2 that no HP Log was necessary.

For the VLD the main objective is to demonstrate the benefits of the concept to ATCOs and stakeholders. The HP assessment at this level (referred to as V3+ in the Human Performance Guidelines document) aims primarily at bridging the gap between the V3 validation phase and deployment.

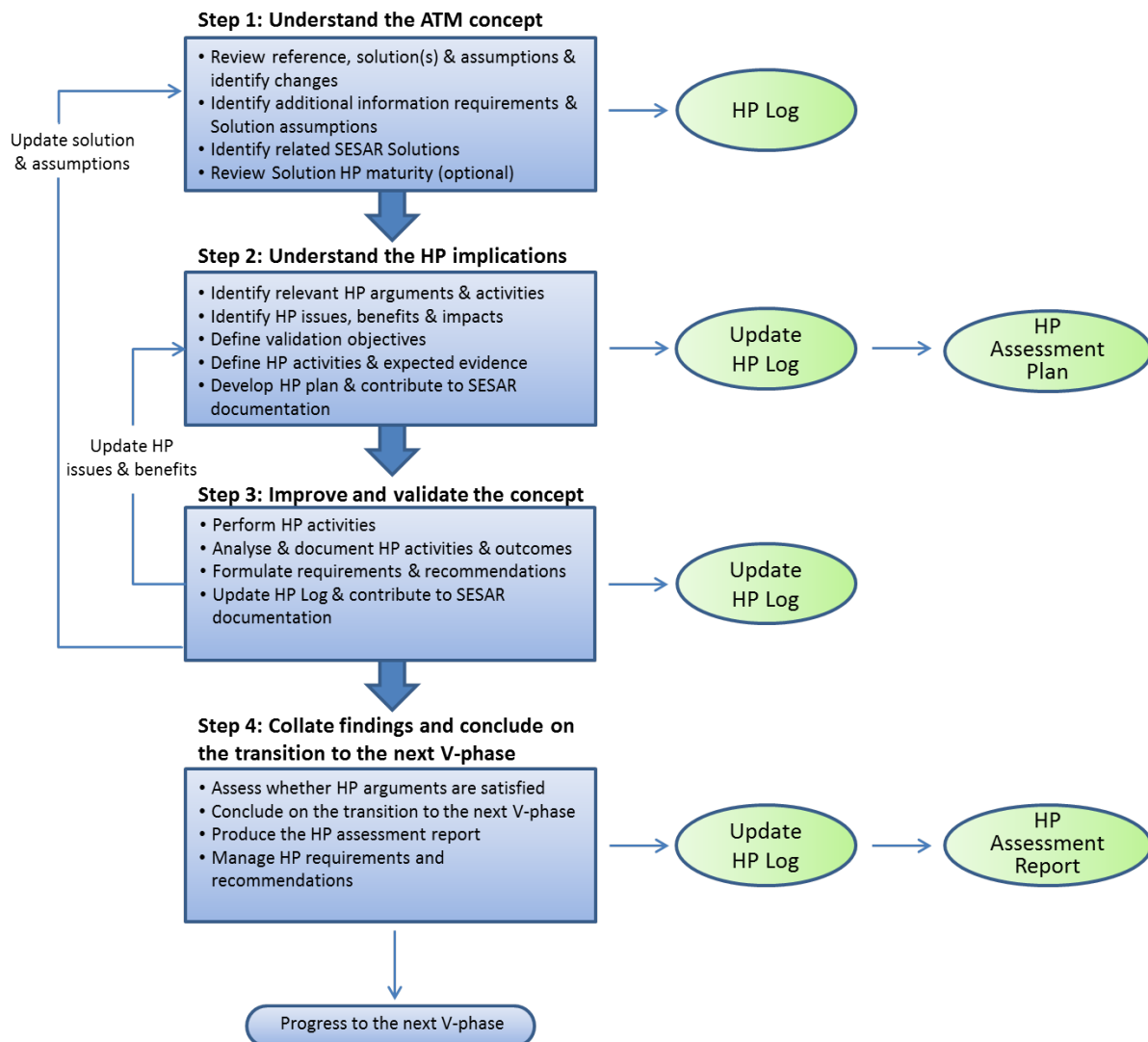


Figure 1: Steps of the HP assessment process

4 Human Performance Assessment

4.1 Step 1 Understand the ATM concept

4.1.1 Description of reference scenario

The reference scenario is the real operations. For a more detailed description, see DEMOP Part I, section 5.5.4.1. [2]

4.1.2 Description of solution scenario

The IRSF set an integrated arrival and departure runway sequence, sometimes with the runway configuration used in real operations and sometimes with a different runway configuration, also to perform selected arrivals to land on departure runway. This is the solution scenario.

For full description of the Use Cases, see DEMOP Part I, section 5.5.4.2.

4.1.3 Consolidated list of assumptions

Assumptions are listed in the section 5.5 of the DEMOP Part I.

4.1.4 List of related SESAR Solutions to be considered in the HP assessment

The VLD is based on Solution 02-08 and results from the V3 phase validation.

4.1.5 Identification of the nature of the change

HP argument branch	Change & affected actors
1. ROLES & RESPONSIBILITIES Left column	
1.1 ROLES & RESPONSIBILITIES	Roles and responsibilities of the concerned actors (ATCOs), with regards to providing Air Traffic Services will not change, the purpose of the Integrated Runway Sequence function is to provide support in the work of sequencing arrivals and departures, both in segregated and mixed mode operations.
1.2 OPERATING METHODS	The concept involves a change in operating methods, with regards to new procedures. The procedural changes will involve following the proposed sequence from the IRSF, confirming the use of the sequence and closely monitoring the flow of events for deviations.

	However, given the nature of the demonstration, none of these procedural changes were in use.
1.3 TASKS	Generally, the new tasks associated with the change; complying with the system sequence and/or manually informing the system when a change is made (controller cannot comply with the proposed sequence/controller makes an optimisation unforeseen by the sequence function). All roles require active monitoring of the systems for updates. Specifically, TMA Tactical Supervisor/TWR Supervisor in the pre-tactical phase, verify to the system that the provided integrated sequence is carried out/changed (e.g. Coordinating change of runway in use, based on traffic load and environmental constraints). TWR Ground Controller work with IRSF and might need to manually update the sequence (e.g. two departing aircrafts taxiing out in the wrong sequence order). The TWR Runway Controller performs their tasks according to the information provided by the IRSF. If needed, the Runway Controller can update the sequence for throughput improvement, and when necessary, adjusts the sequence for safety. Provides coordination with approach controller in situations where fine-tuning or adjustment of the gap size is needed. The Approach Controllers follow the sequence provided by the IRSF and provide gap size according to system proposal, to accommodate departures. No impact expected on flight crew. A positive effect could be improved ability to perform continuous descent approach.
2. HUMAN & SYSTEM	
2.1 ALLOCATION OF TASKS (HUMAN & SYSTEM)	The system decides on the integrated arrival and departure runway sequence and the controllers apply it as close as practical. The sequence can be updated by the operator in pre-defined phases.
2.2 PERFORMANCE OF TECHNICAL SYSTEM	The IRSF provides the controllers with an integrated arrival/departure sequence based on the dynamic balancing of arrivals and departures.

2.3 HUMAN – MACHINE INTERFACE	The information calculated by the IRSF was presented to the controller on an HMI provided by Enhanced DMAN and AAVIP, including presentation of both departures and arrivals.
3. TEAMS & COMMUNICATION	
3.1 TEAM COMPOSITION	No change in the composition of teams are foreseen.
3.2 ALLOCATION OF TASKS	No changes in allocation of tasks between ATCOs are foreseen.
3.3 COMMUNICATION	The sequence calculated by the IRSF, resulting in updates of target times, to be shared with Swedavia A-CDM platform.
4. HP RELATED TRANSITION FACTORS	
4.1 ACCEPTANCE & JOB SATISFACTION	ATCO situational awareness should increase with presentation of arrivals/departures target times and sequence number being displayed. The expected improved predictability and efficiency reduce the need for manual intervention. The APP/TWR Controllers should follow the integrated arrivals/departures sequence calculated by the IRSF as long as practical or update the sequence when needed.
4.2 COMPETENCE REQUIREMENTS	No changes on competence requirements are currently foreseen.
4.3 STAFFING REQUIREMENTS & STAFFING LEVELS	No changes to staffing requirements or staffing levels are currently foreseen.
4.5. TRAINING NEEDS	Persons using the new system to receive necessary training.

Table 2: Description of the change

4.2 Step 2 Understand the HP implications

4.2.1 Identification of relevant arguments, HP issues & benefits and HP activities

Please see “SESAR 2020 VLD3 SORT DEMO Plan – Part IV HPAP”, section 4.2.1 and 4.2.2 [1].

4.3 Step 3 Improve and validate the concept

4.3.1 Description of HP activities conducted

HP activity	Associated validation exercise
Debriefings during VLD	EXE-VLD-03-004
Subjective HP performance assessment during VLD	EXE-VLD-03-004

Table 3: Table of proposed HP activities and their priority

ACTIVITY 1.	
Description	Briefing and de-briefing
HP objectives	OBJ-02-08-HP-001 OBJ-02-08-HP-003 OBJ-02-08-HP-004 OBJ-02-08-HP-011
Tools/Methods selected out of the HP repository	No HP repository tool used / Own questionnaires
Summary of the HP activity	The main result is that a system based on IRSF can decrease the workload for the ATCOs, as the system help with the planning of the sequence, while the situational awareness can be improved, as the system improves and simplifies the overall understanding of the sequence both for departures and arrivals. The results from the demonstration confirm the results from the V3 validation. The results from the V3 validations are that “Feedback from debriefings and questionnaires indicate that the level of mental and physical workload is lower while using an Integrated Runway Sequence than using a standalone AMAN and a standalone DMAN”. Results from V3 validation also states that “De-briefings and questionnaires showed that the solution improved shared awareness between TWR and APP compared to the baseline scenario. Individual situation awareness was also identified to improve in nominal situations and remain acceptable in non-nominal situations”. More details from V3 validations can be found in PJ02-08 OSED for V3 – Part IV HP [3].

Table 3: Description of Activity 1

ACTIVITY 2.

Description	Subjective HP performance assessment during VLD via questionnaires to assess the Integrated Runway Sequence function in shadow mode on live, and recorded live, data.
HP objectives	OBJ-02-08-HP-001 OBJ-02-08-HP-003 OBJ-02-08-HP-004 OBJ-02-08-HP-011
Tools/Methods selected out of the HP repository	No HP repository tool used / Own questionnaires
Summary of the HP activity	The main result is that a system based on IRSF can decrease the workload for the ATCOs, as the system help with the planning of the sequence, while the situational awareness can be improved, as the system improves and simplifies the overall understanding of the sequence both for departures and arrivals. The results from the demonstration confirm the results from the V3 validation. The results from the V3 validations are that “Feedback from debriefings and questionnaires indicate that the level of mental and physical workload is lower while using an Integrated Runway Sequence than using a standalone AMAN and a standalone DMAN”. Results from V3 validation also states that “De-briefings and questionnaires showed that the solution improved shared awareness between TWR and APP compared to the baseline scenario. Individual situation awareness was also identified to improve in nominal situations and remain acceptable in non-nominal situations”. More details from V3 validations can be found in PJ02-08 OSED for V3 – Part IV HP [3].

Table 5: Description of Activity 2

4.4 Step 4 Collate findings & conclude on transition to next V-phase

4.4.1 Summary of HP activities results & recommendations / requirements

The results from demonstration are based on debriefings and/or observations and focuses mainly on demonstrating that the solution works as intended and that the results from the demonstration are in line with the results from the V3 validation.

Issue ID	HP issue / Benefit	HP Issue/ Benefit Status	HP/ Obj. ID	Valid. activity conducted	results / evidence	recommendations	requirements
Arg. 1.2.5: Operating methods (procedures) can be followed in an accurate, efficient and timely manner.							
ISS-02-08-HP.0001	The new operating methods linked to the use of the Integrated Runway Sequence Function applicable by controllers.	Closed	OBJ-02-08-HP-001 OBJ-02-08-HP-002	Activity 1 and 2	ATCOs found the new operating methods linked to the use of an Integrated Runway Sequence efficient and acceptable	Keep following A-CDM procedure and methods for deployment. See PJ02-08 OSED for V3 – Part IV HP [3] for more recommendations.	N/A
Arg. 1.3.3: The level of workload (induced by cognitive or physical demand) is acceptable.							
ISS-02-08-HP.0002	The Integrated Runway Sequence function impact	Closed	OBJ-02-08-HP-003	Activity 1 and 2	ATCOs feedback is no increase of workload is expected with the use of IRSF.	See PJ02-08 OSED for V3 – Part IV HP.	N/A

	on ATCO workload.					
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Arg. 1.3.5: Human actors can maintain a sufficient level of situation awareness.

BEN-02-08-HP.0001	The Integrated Runway Sequence function is expected to improve ATCO's situation awareness on traffic (individual and team) with the provision of shared information on the departure and arrival sequences. In turn this will bring a benefit for safety.	Closed	OBJ-02-08-HP-004	Activity 1 and 2	ATCOs feedback shows that the situational awareness can be improved with the use of IRSF.	See PJ02-08 OSED for V3 – Part IV HP.	N/A
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Arg. 2.1.5: Human actors can acquire an adequate mental model of the machine and its automated functions.

Arg. 2.1.6: The level of trust in automated functions is appropriate.

ISS-02-08-HP.0003	The sequence and advisories proposed by the Integrated Runway Sequence function might not match to the controller's logic.	Closed	OBJ-02-08-HP-005	Activity 1 and 2	The feedback shows that the ATCOs trust in the IRSF is high when demonstrated with live traffic.	No further recommendations found during demonstration. See PJ02-08 OSED for V3 – Part IV HP for more recommendations.	N/A
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Arg. 2.3.1: The level of information provided satisfies the information requirements of the human.

ISS-02-08-HP.0005	The sequence and advisories proposed by the Integrated Runway Sequence function might not match to the controller's logic.	Closed	OBJ-02-08-HP-007	No activities with focus on this Arg. has been performed during demonstration. However, debriefs and questionnaires gave information of interest related to this Arg.	In general, the ATCOs feedback on information presented was positive, including new HMI presentation for "AMAN in horizon departures".	New HMI for graphical IRSF presentation of KPI's found valuable for supervisors and coordinators. Address HMI usability from the very beginning prior to deployment. See PJ02-08 OSED for V3 – Part IV HP.	N/A
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Arg. 2.3.6: The usability of the user interface (input devices, visual displays/output devices, alarms&alerts) is acceptable.

ISS-02-08-HP.0007	The usability of information provided by Integrated Runway Sequence Function.	Closed	OBJ-02-08-HP-009		In general, the ATCOs feedback on information presented was found usable, when IRSF was demonstrated with live traffic. See results from PJ02-08 OSED for V3 – Part IV HP Section 4.4.	Verify impact on ATCOs communication workload prior to deployment in nominal and nominal situations, including situations of degraded modes. Address HMI usability from the very beginning prior to deployment. See PJ02-08 OSED for V3 – Part IV HP.	N/A
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Arg. 2.3.8: The user interface design supports a sufficient level of individual situation awareness.

BEN-02-08-HP.0004	The display of the Integrated Runway Sequence is expected to improve situation awareness on the traffic	Closed	OBJ-02-08-HP-011	Activity 1 and 2	The ATCOs found the HMI as stable and easy to understand, this resulting in an improved awareness.	Verify impact of the user interface design on ATCOs individual situation awareness prior to deployment. See PJ02-08 OSED for V3 – Part IV HP for more recommendations.	N/A
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	situation for ACC, APP and TWR controllers.						
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Arg. 2.3.9: The user interface design supports a sufficient level of team situational awareness.

BEN-02-08-HP.0003	The display of the Integrated Runway Sequence is expected to improve shared situation awareness between ACC, APP and TWR controllers.	Closed	OBJ-02-08-HP-012	Activity 1 and 2	ATCOs showed in debriefings and questionnaire that the solution improved shared awareness between TWR and APP, additionally also shared awareness with ACC. See results from PJ02-08 OSED for V3 – Part IV HP Section 4.4.	Verify impact of the user interface design on ATCOs team situation awareness prior to deployment. Address presentation of IRSF AMAN information for upstream En-route ATCOs (adjacent ACC/FIR) See PJ02-08 OSED for V3 – Part IV HP.	N/A
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Arg. 3.3.4: The communication load of team members is acceptable in normal and abnormal conditions and degraded modes of operations.

ISS-02-08-HP.0011	The impact on communication load for team members and need for coordination when applying the runway sequence, including possible updates.	Closed	OBJ-02-08-HP-014	Activity 1 and 2	In general, the ATCOs expected a reduction of communication workload with the use of IRSF. See results from PJ02-08 OSED for V3 – Part IV HP Section 4.4.	See PJ02-08 OSED for V3 – Part IV HP.	N/A
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Arg. 4.1.2: The impact of changes on the job satisfaction of affected human actors has been considered.

ISS-02-08-HP.0012	A lack of flexibility, reduced in favour of	Closed	OBJ-02-08-HP-015		No activities with focus on this Arg. has been performed during demonstration.	See PJ02-08 OSED for V3 – Part IV HP.	N/A
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	predictability, may negatively impact job satisfaction.				See results from PJ02-08 OSED for V3 – Part IV HP Section 4.4.		
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Arg. 4.2.1: Knowledge, skill and experience requirements for human actors have been identified.

ISS-02-08-HP.0013	The automation of the integration of arrival and departure sequences might lead to a loss of skills in the long term.	Open	OBJ-02-08-HP-016		No activities with focus on this Arg. has been performed during demonstration. See results from PJ02-08 OSED for V3 – Part IV HP Section 4.4.	See PJ02-08 OSED for V3 – Part IV HP.	N/A
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Table 4: Summary of the HP results and recommendations/ requirements for each identified issue & related argument

The results from the demonstration are similar to the results from the V3 validation. This indicates that the results from the V3 validation are true and can be trusted.

4.4.2 Maturity of the DEMO

No maturity assessment is to be performed.

5 References

Human Performance

- [1] SESAR 2020 VLD3-W2- SORT D1.1 DEMO Plan – Part IV Human Performance, edition 00.02.000, issued as D1.1.01, 29/10/2021.

Main documentation

- [2] SESAR 2020 VLD3-W2-SORT D1.1 Demo Plan - Part I, edition 00.02.00, issued as D1.1.01, 29/10/2021.
- [3] SESAR Solution 02-08 SPR/INTEROP-OSED for V3 - Part IV - Human Performance Assessment Report, D6.1.20, edition 00.03.00.

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Appendix A – Additional HP activities conducted

N/A



Appendix B – HP Recommendations Register

HP Recommendations Register									
Reference	Type of recommendation	Recommendation	Rationale	Assessment source + Reference report	Scope (Air, Air/Ground, Ground)	Concept/solution Involved	Recommendation status	Rationale in case of rejection	Comments
HP_R_C_10 1	Training	Keep following A-CDM procedure and methods for deployment. See PJ02-08 OSED for V3 – Part IV HP [3] for more recommendations.	To properly ensure that new operating methods linked to the use of an Integrated Runway Sequence are followed in an accurate, efficient and timely manner.	DEMOR	Ground	PJ02-08	Open	-	-
HP_R_C_10 2	Validation	See PJ02-08 OSED for V3 – Part IV HP.	To properly ensure that level of workload linked to the use of an Integrated Runway	DEMOR	Ground	PJ02-08	Open	-	-

			Sequence is acceptable.						
HP_R_C_10 3	Validation	See PJ02-08 OSED for V3 – Part IV HP.	To properly ensure that human actors can maintain a sufficient level of situation awareness while using and Integrated Runway Sequence	DEMOR	Ground	PJ02-08	Open	-	-
HP_R_C_10 4	Validation	See PJ02-08 OSED for V3 – Part IV HP.	To explore further situation awareness improvement for APP ATCOs especially in situations of heavy traffic.	DEMOR	Ground	PJ02-08	Open	-	-
HP_R_C_10 5	Validation	No further recommendations found during demonstration. See PJ02-08 OSED for V3 – Part IV HP	To properly ensure that human actors can acquire an adequate mental model of the Integrated	DEMOR	Ground	PJ02-08	Open	-	-

		for more recommendations.	Runway Sequence function and to ensure that the level of trust in that function is appropriate						
HP_R_C_10 6	Validation	New HMI for graphical IRSF presentation of KPI's found valuable for supervisors and coordinators. Address HMI usability from the very beginning prior to deployment. See PJ02-08 OSED for V3 – Part IV HP.	To properly make sure that the level of information provided by the Integrated Runway Sequence satisfies the information requirements of concerned ATCOs and that the usability of the Integrated Runway Sequence user interface is acceptable.	DEMOR	Ground	PJ02-08	Open	-	-
HP_R_C_10 7	Validation	Verify impact of the user interface design on ATCOs individual situation	To properly ensure that the Integrated Runway Sequence user	DEMOR	Ground	PJ02-08	Open	-	-

		awareness prior to deployment. See PJ02-08 OSED for V3 – Part IV HP for more recommendations.	interface design supports a sufficient level of individual situation awareness.						
		Verify impact of the user interface design on ATCOs team situation awareness prior to deployment. Address presentation of IRSF AMAN information for upstream En-route ATCOs (adjacent ACC/FIR) See PJ02-08 OSED for V3 – Part IV HP for more recommendations.	To properly ensure that the Integrated Runway Sequence user interface design supports a sufficient level of team situation awareness.						
HP_R_C_10 8	Validation			DEMOR	Ground	PJ02-08	Open	-	-
HP_R_C_10 9	Validation	See PJ02-08 OSED for V3 – Part IV HP.	To properly ensure that the communication load linked to the use of an	DEMOR	Ground	PJ02-08	Open	-	-

			Integrated Runway Sequence is acceptable in normal and abnormal conditions and degraded modes of operations.						
HP_R _C_110	Validation	See PJ02-08 OSED for V3 – Part IV HP.	In order to ensure that impact of the use of an Integrated Runway Sequence in ACC, APP and TWR ATCOs skills is properly identified.	DEMOR	Ground	PJ02-08	Open	-	-

Table 5: HP recommendations

Appendix C – HP Requirements Register

N/A

Appendix D – HP Log

N/A



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