



FROM INNOVATION TO SOLUTION

LOOKING AHEAD

David Bowen

10 November 2016



#SIDS2016
@SESAR_JU

founding members



EUROPEAN UNION



EUROCONTROL

SESAR vision



SESAR life cycle

- To define, develop and deploy the technology that is needed to increase ATM performance and build Europe's intelligent air transport system



SESAR 1 results



SESAR Solutions refer to new or improved operational procedures or technologies that aim to contribute to the modernisation of the European and global ATM system.

- **63 SESAR Solutions, divided into 4 areas (Key Features)**



- **24 Solutions are already being deployed across Europe**

SESAR 2020 exploratory research: key changes

Innovation pipeline

Enable the flow of exploratory research results into industrial research/very large-scale demos activities through ATM applications oriented topics

Scientific excellence/knowledge transfer

Strengthen links between ATM research community & SESAR stakeholders, engaging end-users and delivering and communicating results



SESAR 2020 : A step-change in system capabilities

Automation of routine tasks

Three interlocking white gears are shown on a white background. The gears are arranged in a triangular pattern, with one gear at the top and two below it. They are rendered with soft shadows, giving them a three-dimensional appearance.

Automation and use of data communication to ease controllers & support staff workload

Integrated systems

The diagram illustrates an integrated system architecture. At the center is a large blue circle. Eight lines radiate from this central circle to various components, each represented by a blue icon and a text label. Starting from the top and moving clockwise, the components are: a 'Dive Management Center' (with a submarine icon), a 'NET Service Provider' (with a cloud icon), a 'Support' unit (with a person icon), 'Vehicles' (with a truck icon), a 'Mobile Operation Center' (with a person in a vehicle icon), a 'MOP ATC' (with a radar icon), a 'Military Off Center' (with a person in a vehicle icon), and an airplane icon at the top left. The entire diagram is set against a dark blue background.

**Lean and modular
systems, easily
upgradable and
interoperable**

Integration of all vehicles

The collage consists of four images arranged in a 2x2 grid. The top-left image shows a blue and white helicopter flying against a cloudy sky. The top-right image shows a white and black helicopter on a tarmac. The bottom-left image shows a grey fighter jet in flight. The bottom-right image shows a small white propeller plane with red and yellow stripes on its tail, flying over green trees.

All air vehicles fully integrated in ATM environment (incl. RPAS)

Sharing of information



Information shared digitally via common information platform

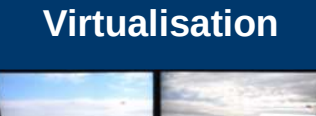
Flight-centric operations



A map of Europe with several teal lines connecting different cities, representing flight routes. The lines are drawn over a light gray map of Europe with white borders. The connections are as follows: a line from London to Paris, a line from London to Frankfurt, a line from London to Rome, a line from Paris to Frankfurt, a line from Paris to Rome, a line from Frankfurt to Rome, a line from Rome to Athens, a line from Athens to Istanbul, a line from Istanbul to London, a line from London to Athens, a line from London to Rome, a line from Paris to Rome, a line from Frankfurt to Rome, and a line from Rome to Athens.

Air users fly their preferred, more direct route in a flow and network context

Virtualisation

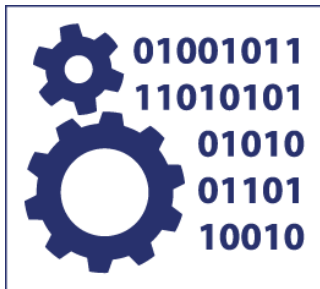
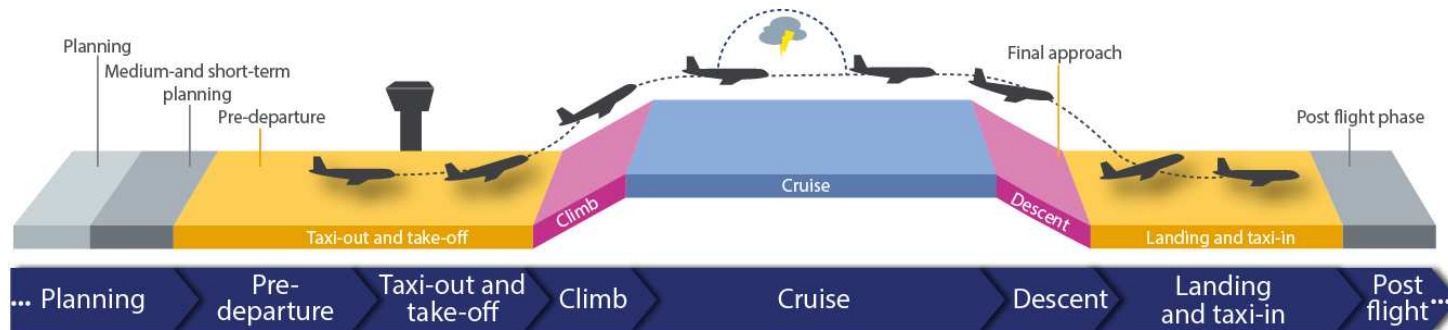


Virtualisation allowing dynamic capacity management



FROM INNOVATION TO SOLUTION

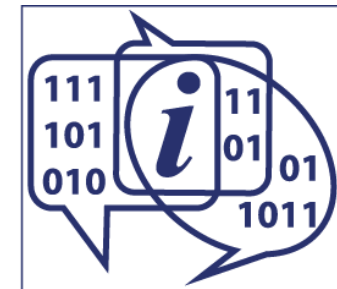
Flight-centric approach



Automation support



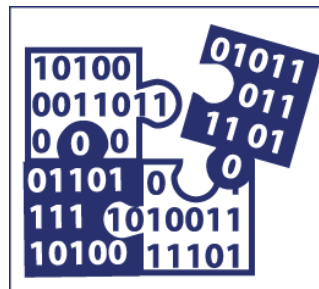
Flight- and flow-centric operations



Sharing of information



Integration of all vehicles



Integrated systems



Virtualisation

SESAR 2020 exploratory research: main principles

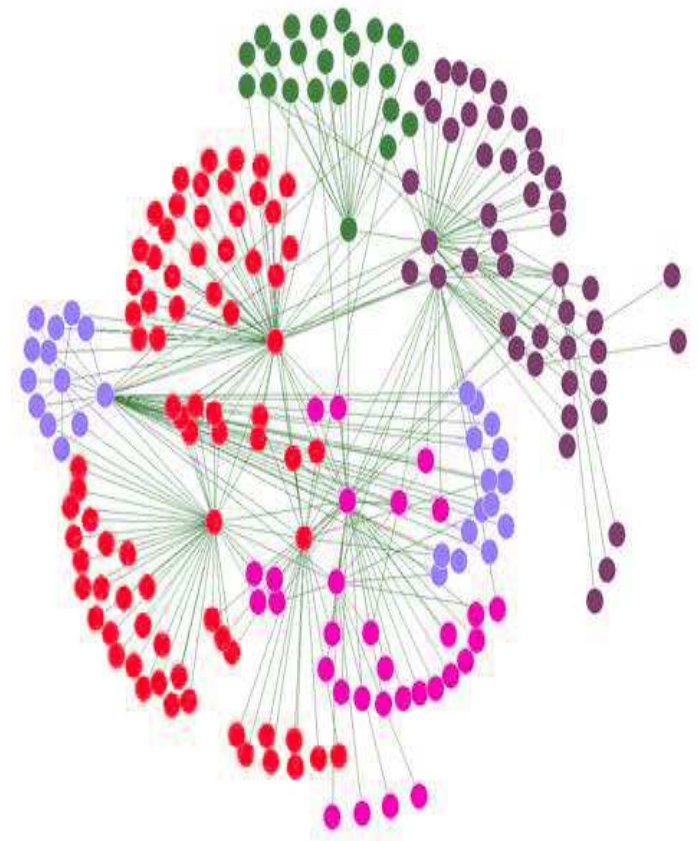
- Builds on **results and positive outcomes of SESAR 1 ER** research;
- Acts as a driver for **innovative and disruptive research ideas**;
- Feeds the **SESAR innovation pipeline**;
- Encourages **scientific excellence** and the development of a highly skilled ATM work-force.



FROM INNOVATION TO SOLUTION

Creating an inclusive European ATM research area

- Focus on the **assessment, transfer, communication and sharing of research results** among the ATM community.
- Support and encourage **collaborative research** on future and emerging innovative ideas, expertise and knowledge.
- Facilitate **interdisciplinary or ‘themed’ network activities and events**.
- Promote new ideas through **PhD research activities**.



Call timeline

THE SESAR 2020 PROGRAMME STRUCTURE



FROM INNOVATION TO SOLUTION

Exploratory research calls

H2020 open calls: not limited to SJU Members

- **ER-1** (20,6 Meuro)
ATM excellent science & outreach and
ATM applications oriented research
- **ER-2** (9 Meuro)
Remotely-piloted aircraft systems
(RPAS) in very low-level (VLL) drone
operations
- **ER-3** (10 Meuro)
Transversal activities, including
knowledge transfer networks (KTN)
and ATM applications oriented topics
- **ER-4** (40 Meuro)
ATM excellent science & outreach and
ATM applications oriented research



SESAR Innovation Days 2017

When

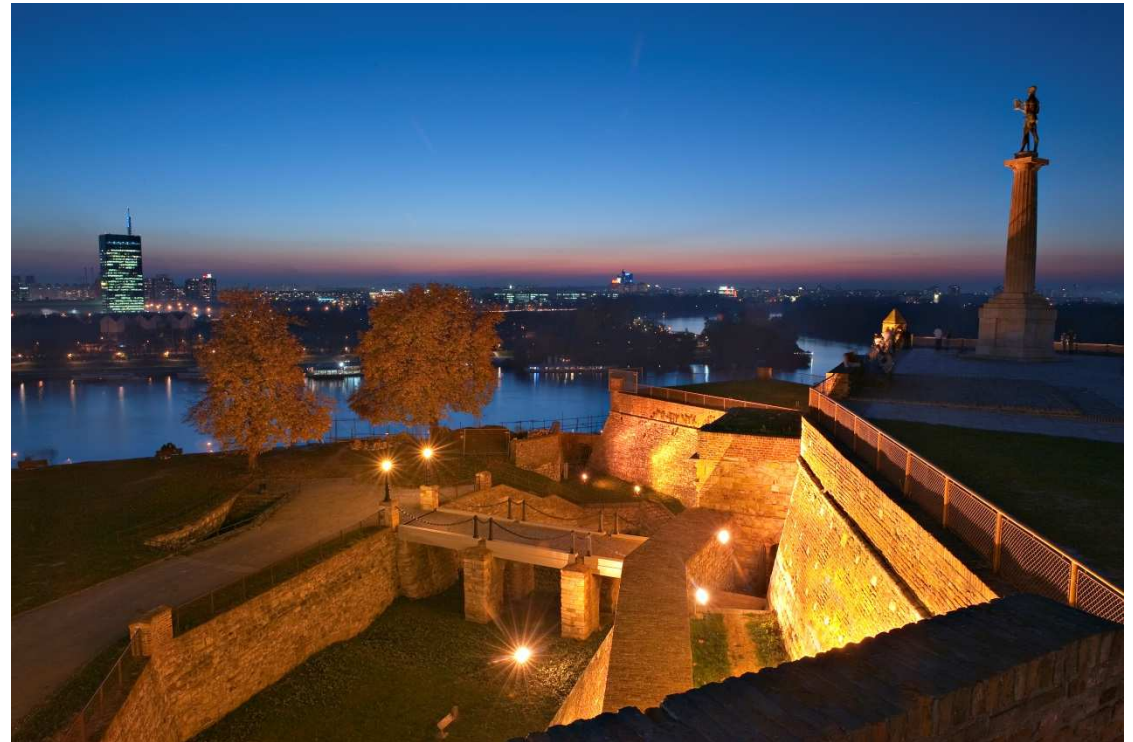
28-30 November 2017

Where

Belgrade

What

- Keynotes
- Sessions
- Posters
- Networking
- Return of the SESAR Young Scientist Award



Copyright: X3M3898 Pobednik i pogled na Usce



Thank you for your attention