LOOKING AHEAD

David Bowen
10 November 2016
An Aviation Strategy for Europe

Security
- Ensuring high levels of security

Cost Efficiency
- Up to 40% reduction in air navigation services costs per flight

Capacity
- Up to 30% reduction in departure delays
- Up to 10% additional flights landing at congested airports
- A system capable of handling up to 100% more traffic

Safety
- Improvement by up to a factor of 4

Operational Efficiency
- Up to 6% reduction in flight time
- Up to 10% reduction in fuel burn

Environment
- Up to 10% reduction in CO₂ emissions
- Positive impact on noise and air quality
To define, develop and deploy the technology that is needed to increase ATM performance and build Europe’s intelligent air transport system.
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
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**
Automation and use of data communication to ease controllers & support staff workload

**Integration of all vehicles**
All air vehicles fully integrated in ATM environment (incl. RPAS)

**Flight-centric operations**
Air users fly their preferred, more direct route in a flow and network context

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

**Sharing of information**
Information shared digitally via common information platform

**Virtualisation**
Virtualisation allowing dynamic capacity management

FROM INNOVATION TO SOLUTION
Flight-centric approach

- Planning
- Medium and short-term planning
- Pre-departure
- Taxi-out and take-off
- Climb
- Cruise
- Descent
- Landing and taxi-in
- Post flight phase

- 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.
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

EXPLORATORY RESEARCH

2016
ER-1 call awarded
ER-2 call (drones) published
ER-3 coming soon

2018
ER-4

Delivering best-in-class, globally interoperable and high-performing Air Transport for Airspace Users and Citizens

High Performing Airport Operations
Optimised ATM Network Services
Advanced Air Traffic Services

Enabling the Aviation Infrastructure
RPAS Integration

LARGESCALE DEMOs

Wave 1
2016-2019

Wave 2
2019-2021

PPP

FROM INNOVATION TO SOLUTION

Next calls
2016
2019
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
When
28-30 November 2017

Where
Belgrade

What
• Keynotes
• Sessions
• Posters
• Networking
• Return of the SESAR Young Scientist Award
Thank you for your attention