SESAR UPDATE

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Bigger picture

SINGLE EUROPEAN SKY

« DEFINITION »

ATM MASTER PLAN

« DEVELOPMENT »

EXPLORATORY RESEARCH

INCREASING MASTERY

INDUSTRIAL RESEARCH AND VALIDATION

VERY LARGE SCALE DEMOs

SESAR SOLUTIONS

« DEPLOYMENT »

SESAR DEPLOYMENT

« DEFINITION »

« DEVELOPMENT »

« DEPLOYMENT »
SESAR 1 long-term research

• Work Package E
• 2009-2016
• 40 projects
• 3 research networks:
  – HALA! – Towards Higher Levels of Automation in ATM
  – Complex World – Mastering Complex Systems Safely
  – ALIAS – Addressing the Liability Impact of Automated Systems
SESAR 1 lessons learnt

• Research networks and projects demonstrated their scientific value;

• Challenge remains to transfer long-term research results into SESAR industrial research activities;

• More efforts are needed to strengthen links between ATM research community and SESAR stakeholders.
SESAR 2020

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

LARGE SCALE DEMOs

Wave 1
2016-2019
Wave 2
2019-2021

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
ER-1: exploratory research topics

ATM excellent science and outreach:
- ER-01-2015 - Automation in ATM
- ER-02-2015 - Data science in ATM
- ER-03-2015 - Information management in ATM
- ER-04-2015 - Environment and meteorology in ATM
- ER-05-2015 - Economics and legal change in ATM

ATM application-oriented research:
- ER-06-2015 – High-performing airport operations
- ER-07-2015 - Separation management and separation standards
- ER-08-2015 - Communications, navigation and surveillance
- ER-09-2015 – Trajectory-based operations
- ER-10-2015 - ATM architecture
- ER-11-2015 - ATM performance
Selected projects per topic

- Automation in ATM
- Data Science in ATM
- Information Management in ATM
- Environment and meteorology in ATM
- Economics and Legal Change in ATM
- High Performing Airport Operations
- Separation Management & Separation Standards
- Communication Navigation & Surveillance
- Trajectory Based Operations
- ATM Architecture
- ATM Performance

Exploratory research: Projects per topic

Selected projects per topic
S2020 Exploratory research today

**SESAR Scientific Committee**

**Economics & Legal Change in ATM**
- COCTA, COMPAIR, VISTA

**Information Management in ATM**
- BEST

**Environment & Meteorology in ATM**
- TBO-MET, ATM 4E, PNOWWA

**High Performing Airport Operations**
- MOTO, RETINA
- Separation Management
  - SALSA, R-WAKE
  - CNS
  - NAVISAS, SAPIENT
- TBO
  - OptiFrame, COPTRA, PARTAKE
- ATM Architecture
  - PACAS
- ATM Performance
  - INTUIT, AURORA, Apache

**Automation in ATM**
- AUTOPACE, TACO, AGENT, STRESS, MINIMA

**Data Science in ATM**
- Big Data4ATM, DART, MALORCA

FROM INNOVATION TO SOLUTION
ER-1 call observations

- **Highly competitive** with high quality proposals **building upon** WP-E results;

- **Innovative research** questions and challenges addressed;

- Fully in-line with **SESAR 2020 vision** for the future evolution of the European ATM.
ER-2: deadline extended

- **Extended deadline:**
  15th November 2016

- **Scope:** Operations of unmanned aircraft Systems (UAS) and RPAS in very low level (VLL), including the visual line of sight (B-LOS) operations, as well as visual flight rules (VFR) environments

- **More information:**
ER-3 Part 1: Knowledge transfer network (KNT)

• Support the SJU by focussing 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 for the benefit of the future evolution of the European ATM system and its people.

• Include the organisation and management of interdisciplinary or ‘themed’ network activities and PhD research activities based around key ATM research subjects.
ER-3 Part 2: ATM applications oriented research

Supports new concepts for ATM beyond those identified in the ATM Master Plan, as well as matures new concepts for ATM, emerging technologies and methods to the level required to feed into SESAR 2020 industrial research.

- Advanced air traffic services
- Optimized ATM network management - advanced airspace management, dynamic capacity balancing etc.
- Enabling aviation Infrastructure - the use or adaptation of new technologies being developed outside ATM to support ATM CNS needs, lightweight and/or low-cost devices suitable for airspace users, such general aviation,
- ATM operations, architecture, performance and validation
ER-4: ATM excellent science/applications oriented research

Covers two topic areas:

• ATM excellent science and outreach/applications
• ATM applications oriented research

IMPORTANT!
Topics will be defined based on gaps identified and initial results of ER-1 projects and SESAR industrial research (Wave 1).
All call information:
• New Scientific Committee important part of SESAR governance.
• Not only limited to ER but advises on all scientific matters
• Selection process completed
• Notifications to be issued before year-end
• 1st meeting in January 2017
Thanks for your attention