

## **SESAR Solution**

### **En route Air Traffic Organiser**

#### **Contextual note**

##### **Purpose:**

This contextual note is a vehicle to summarize the results stemming from Release delivery activities. It provides a summary of the SESAR Solution in terms of results of the Validation exercises and achievements as well as additional activities to be conducted before or as part of deployment.

This contextual note is part of a package prepared for each SESAR Solution for which exercise results are conclusive and sufficient to support a decision for industrialisation. It complements a technical data pack comprising available deliverables required for further industrialization.

In addition, adequate consideration of the recommendations on the regulatory and standardisation frameworks and the regulatory and certification activities is required. These recommendations are detailed in the 'SESAR Solution Regulatory Overview – En route Air Traffic Organiser' included in the technical data pack.

#### **Improvement in ATM Operations**

ERATO (En-route Air Traffic Organiser) permits an improved level of security and an increased capacity on En-Route airspace sectors.

The ERATO operational concept relies on a decision-making aid toolkit for En-Route air traffic control in an electronic environment. ERATO includes a medium term conflict detection (MTCD) monitoring aid and a first step towards CORA (Conflict resolution assistant) technology and aims at making air traffic and time management easier through four main features: filtering; task scheduler; extrapolation; and geographic markers.

The objectives of this concept are to:

- Provide support to air traffic controllers for the detection and resolution of conflicts; and
- Achieve control tasks effectiveness through enhanced cooperation on a controller working position (CWP), between the planning and the executive controllers on a control suite, through
  - Improved sector team organisation improvements; and
  - Better information and task sharing for monitoring the air traffic situation.

#### **Operational Improvement – OI Step**

- CM-0201 - Automated Assistance to Controller for Seamless Coordination, Transfer and Dialogue

- CM-0202 - Automated Assistance to ATC Planning for Preventing Conflicts in En Route Airspace
- CM-0203 - Automated Flight Conformance Monitoring
- **CM-0204** - Medium Term Conflict Detection with Conflict Resolution Advisories and Conformance Monitoring

### Background and validation process

The SESAR Solution has been validated through two exercises, which took place between June and December 2011 on DSNA legacy platform:

- EXE-04.03-VP-032: this exercise focused on ERATO HMI functions and allowed to test usability, situation awareness, and conflicts detection in a quasi-operational environment;
- EXE-04.03-VP-237 was designated to integrate the ERATO system and tools in the Air Traffic Controller's work in a fully realistic operational environment.

The two validation exercises, performed in the Brest ATCC environment with licensed controllers specifically trained to the En Route Air Traffic Organizer ERATO, consist of Shadow Mode Trials (EXE 032) and Live Trials (EXE 237). In addition, Real Time Simulations have been used to fulfil validation needs for both exercises which could not be addressed in shadow mode or live trials. The Real Time Simulation sessions have been common to EXE032 and EXE237.

The **purpose** of the exercises was to assess whether the ERATO operational concept fulfils the service it has been developed for, i.e.:

- Enhancing cooperation between Executive and Planner Controllers;
- Monitoring the air traffic situation;
- Supporting conflict detection and resolution.

### Results and performance achievements

On the basis of Shadow Mode and live trials, the general usability of ERATO was assessed and confirmed as operationally feasible.

The validation results obtained with French and foreign ATCOs demonstrate a real ability to achieve the control tasks with effectiveness (i.e. with accuracy and completeness), while using the ERATO tools with the defined working method.

The exercises demonstrated the ability of air traffic controllers to increase their productivity and perform their controlling tasks effectively, using the ERATO support tools and working methods.

No noticeable safety issue related to the ERATO concept was highlighted during the exercises.

### Additional activities

Further assessment is planned as part of deployment only (Bordeaux validation trials for automatic agenda).

During the exercises, the opportunistic noting down of safety events did not reveal any noticeable safety issues. A complete safety analysis will be part of the implementation work to be done before operation.

#### **Actors involved**

The airspace users (through the Flight Crew) are receivers of the Operational Service delivered through ERATO. However, neither their role nor their responsibility should change as a result of introducing this new operational concept.

The primary actors impacted by the introduction of the ERATO concept are the **Planning Controllers** and **Executive Controllers** on En-Route CWP in Air Traffic Services Operations.

#### **Impact on A/C system**

N/A

#### **Impact on ground systems**

The ATM system and HMI will need to be modified to allow the system to be used by the stakeholders. It is connected to the FDPS, which will need to be updated.

#### **Consideration of Regulatory Framework**

There is no specific topic in the field of the regulatory framework to be considered in deployment, beyond the applicable regulations currently existing.

#### **Consideration of Standardisation Framework**

There is no specific topic in the field of the standardisation framework to be considered in deployment, beyond the applicable standards currently existing.

#### **Consideration of Regulatory Oversight and Certification Activities**

Local safety arguments should address the new functions introduced, in terms of their local specific risks.

#### **Intellectual property rights (foreground)**

The foreground is owned by the SJU.