

SESAR Solution

Low cost and simple departure data entry panel

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 – Low cost and simple departure data entry panel' included in the technical data pack.

Improvement in ATM Operations

The concept aims to improve integration of small airports through improved availability of aircraft pre-departure information to the ATM Network, through the provision of a low cost Departure Data Entry Panel that is both easy to use and has a minimal impact upon the operator's workload in the tower, while providing accurate electronic pre-departure information to the CFMU.

The use of a simple Airport Departure Data Entry Panel (ADDEP) can lead to benefits in terms of:

- performance and **efficiency** of the network: improved availability of more accurate departure data significantly improves the performance of network management, thereby improving capacity through the better use of existing controller staff;
- **safety** of operations: timely and accurate information, widely shared amongst all partners in the ATM business, allows for better collaborative decision making, network and operational management;
- **predictability** within CFMU systems for demand on a sector, leading to:
 - Better decision making concerning when to open or close a sector;
 - Less use of unnecessary regulations;
 - Better use of staff within the control room reducing the need for further controllers due to an increase in traffic; and
 - Helps prevent overloads as sudden increases in demand will be rare.

Operational Improvement – OI Steps

- AO-0207 - Surface Management Integrated With Departure and Arrival Management
- AO-0501 - Improved Operations in Adverse Conditions through Airport Collaborative Decision Making
- DCB-0304 - Airport CDM extended to Regional Airports

Background and validation process

The SESAR Solution has been validated through:

- EXE-12.04.01-VP-391 on Low cost and simple departure data entry panel, assessing the operator's use of the system without connectivity to CFMU; and
- EXE-12.04.01-VP-404 on Low cost and simple departure data entry panel, with connectivity to the CFMU, and the impacts and benefits of integration with CFMU.

The **purpose** of these exercises was to assess the benefits from using a simple Airport Departure Data Entry Panel (ADDEP) at smaller airports not equipped with advanced electronic flight strip capabilities as well as to determine whether it would improve the availability and accuracy of departure information shared between the Tower and the Approach (EXE 391) and with the Network Manager (EXE 404) was conducted through Shadow mode operations and result in benefits for network management and traffic load predictions.

The exercises took place in Southampton Airport in the south of the United Kingdom and ran in shadow-mode. The ADDEP gives regional airports a low-cost solution to compute and departure data with approach controllers and the CFMU.

Results and performance achievements

The validation exercises demonstrated both operational and system feasibility, with:

- A significant improvement in traffic **predictability** and, more specifically, an improvement of Estimated Take-Off Time (ETOT) accuracy at small airports. Only 6% of flights were outside a 10-minute margin of error, compared with 43% without the new SESAR tool;
- Positive users feedback on HMI upgrade, e.g. display of TTOT on the strips;
- Users now able to set active RWY configuration as a way to indirectly control the taxi-time parameter; and consequently,
- Increased network **capacity**;
- No negative impact on safety.

Additional activities

Further activities are recommended prior to or as part of the deployment. These include:

- The clarification of tower roles & responsibilities for ADDEP use, fallback, etc.;
- The integration of ADDEP tool into Tower HMI as well as the improvement of ADDEP functions;
- An assessment of the impact of the use of ADDEP by multiple (small) airports;
- The conduct of a security assessment; and
- A revision and finalisation of requirements.

Actors involved

ATC (TWR) (Users of system, providing data)
Airport (showing low-cost integration to flow-management environment)
NMF, ATC (APP, LSUP) (Users of data provided)
ANSP (receiving more accurate time information)
Airspace Users (network performance assessment)

Impact on A/C system

N/A

Impact on ground systems

The ground system would need to be modified:

- The ADDEP panel should be properly integrated into a Controller Working Position (CWP); and
- The data generated by ADDEP should be distributed to the Network.

Consideration of Regulatory Framework

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

Consideration of Standardisation Framework

In order to ensure the maximum possible harmonisation in the implementation of the solution, it could be opportune to promote standardisation of the operational procedures for using this function.

Consideration of Regulatory Oversight and Certification Activities

Adequate local procedures should be in place to avoid that ATCOs lack situational awareness due to not looking out of the window.



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