

IAO key figures

Project acronym:	PJ28 IAO
Project full title:	Integrated Airport Operations
Topic:	Integrated Airport Operations (incl. Time Based Separation)
Type of project:	Innovation action / very large demonstration
Granting authority:	Single European Sky ATM Research
Duration:	36 months
Start:	1.12.2016
Partners:	14 partners (8 active)
Coordinator:	Steffen Loth (DLR)
Volume:	5,7 million Euro



Demonstration site Nice Airport

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Participants



Funding

This project has received funding from the SESAR Joint Undertaking under the European Union's Horizon 2020 research and innovation programme under grant agreement No 731787.



SESAR 2020 IAO In a nutshell

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SESAR 2020 IAO

In a nutshell



The SESAR Integrated Airport Operations (IAO) project is a Very Large Scale Demonstration (VLD). Its aim is to show the benefits of Air Traffic Management (ATM) solutions developed in SESAR 1 in an operational environment and to ease their industrial deployment. The project takes place in the framework of the SESAR 2020 Multi-annual Work Program, set up to prepare airports for the challenges of the future.



Exemplary IAO demonstration sites

IAO consists of five demonstrations: two on-board exercises and three at the airports of Nice, Budapest, and Hamburg. In those demonstrations IAO will cover ATM solutions in the area of:

- Pre-Departure Sequencing,
- Routing and planning functions for controllers,
- Airport safety nets for controllers,
- On-board traffic alerts, and
- Manual Taxi Routing.

The new solutions will assist air traffic controllers in their duty to safely guide aircraft at the airport. In addition, they will assist flight crews in navigating on the ground.

Demonstrations

The individual demonstrations are set up independently, but cover partly similar functionalities to prove their general applicability, devoid of certain local characteristics. They will take place between September 2018 and March 2019 and will be supported by the respective airport authorities and local controllers.



Demonstration facilities in Hamburg and Budapest

The functionalities of IAO are almost all tested in passive shadow mode. Operational data is used in real time to feed into the system under test, but information provided by the demonstrated solutions has no influence on the operational system. This modus operandi allows the evaluation of the project's objectives with realistic/real operational data without affecting the safety and processes of the real airport operations.



Exemplary Electronic Flight Bag for an onboard demonstration

Goals

To succeed in its superior objectives IAO wants to prove and demonstrate the:

1. Operational readiness of all developed functionalities
2. Increase in situational awareness by using the demonstrated tools
3. Utility of routing and planning functions (partly with user interaction)
4. Improvement of DMAN functions with route planning
5. Benefits of Conformance Monitoring and Conflicting ATC Clearance Alerts
6. Accuracy of A-SMGCS taxi-time
7. Adherence to an acceptable controller workload with any of the new functionalities
8. Applicability of the demonstrated tools independent of specific local characteristics
9. Compliance to current standards and regulations including the involvement of respective bodies
10. Deployment and promotion of the tools developed in SESAR 1 and demonstrated in IAO