

SESAR@DSNA



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FROM INNOVATION TO DEPLOYMENT

DSNA staff is particularly motivated by innovation with a high safety management culture. When innovation has shown high performance and safety potential benefits, DSNA moves to implementation within the context of SESAR deployment framework and thus can provide even better quality service to its customers.



DSNA



RESEARCH & DEVELOPMENT



The **European ATM Master Plan** is the roadmap for delivering high performance aviation to Europe. It is the main planning tool for ATM priorities enabling SESAR target-concepts to become an operational reality.

SESAR 1 (2009-2016)

This initial development phase of around 350 projects ended in 2016. DSNA, in association with ENAC, ONERA, Météo France and its partners, participated in one hundred or so projects for a total of 75 million euros. In all, more than 500 DSNA personnel contributed to this work programme which resulted in validating 63 SESAR solutions. For its part, DSNA contributed to 31 SESAR solutions by the end of SESAR 1.

Solutions categorised according to four key areas of ATM:



SESAR 2020

This second development phase began at the end of 2016. It fits into the framework of the "Horizon 2020" European programme which brings together the financing of the European Union in matters of research and innovation. It extends ATM R&D activities until 2024. Following a call for tenders, DSNA, in association with ENAC, ONERA, Météo France and SAFRAN, was retained to participate in 21 projects for an amount of 14 million euros between the period 2016-2019.

23
R&D projects

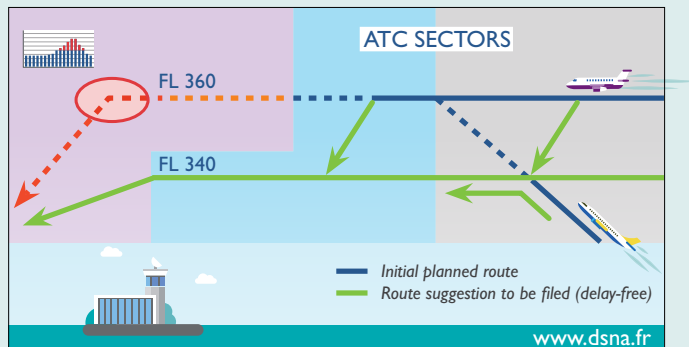
14 M€
eligible
for 3 years

32
New SESAR
Solutions

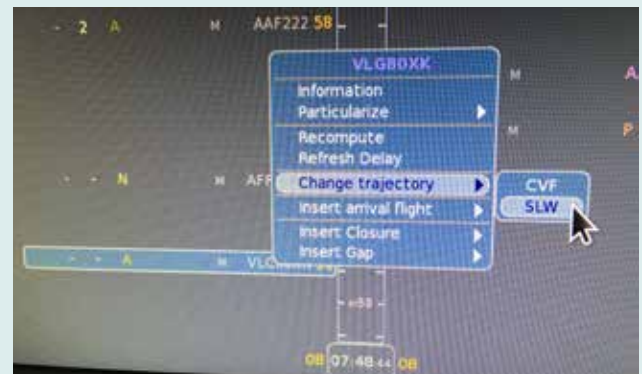
3
projects
DSNA leader



2 Live Trials in 2017 (Very Large Scale Demonstrations)



PJ 24 – Network Collaborative Management: extension of the CAP, a dynamic CDM approach to better balance traffic demand, between Bordeaux and Madrid ACCs (Summer 2017).



PJ 25 - xStream: Extended AMAN up to 250 NM (Paris ACC): live trial on inbound flights to Paris-Orly airport (August 2017).

DEPLOYMENT



The operational service start-up of SESAR projects is the object of European financial support from the Connecting Europe Facility (CEF) endowed with 2.5 billion euros. A first package of functionalities derived from the SESAR 1 work was identified in a European regulation in 2014 called **Pilot Common Project (PCP)** with deadlines spread out from 2018 to 2026. The projects directly linked to PCP are managed via the SESAR Deployment Manager (SDM). The other projects linked to the Single European Sky are managed directly by the INEA European agency.

SESAR Solutions

Deployment in France

HIGH-PERFORMING AIRPORT OPERATIONS

	RunWay Status Lights (RWSL) <i>Visual signals to safeguard runway users.</i>	Apron safety: Paris-CDG.
	Departure manager DMAN baseline for integrated AMAN/DMAN <i>A baseline for on-time departure.</i>	CDM: Paris-CDG, Paris-Orly, Lyon-Saint-Exupéry.
	ATC and AFIS services in a single low-density aerodrome from a remote controller working position (CWP) <i>Remote tower services for small airports.</i>	ATM system: Saint-Pierre and Miquelon (project Digital Advanced Tower): implementation scheduled in the Autumn 2018.

ADVANCED AIR TRAFFIC SERVICES

	Extended arrival management (E-AMAN) horizon <i>Assigning holding stacks to the past.</i>	Safety-Capacity: Reims ACC.
	Arrival management (AMAN) and point merge <i>Eliminating holding patterns in the extended terminal area.</i>	Safety-Capacity: North-West sector in Paris ACC.
	Precision area navigation (P-RNAV) in complex terminal airspace <i>Flying more efficient routes.</i>	PBN: RNAV 1 in Paris terminal area (Paris-CDG, Paris-Orly) and in most of big regional airports (e.g. Nice airport).
	Approach procedures with vertical guidance <i>Preparing to land.</i>	PBN: 170 published Localizer Precision with Vertical guidance (LPV) procedures.
	Sector team operations - En-route air traffic organiser <i>Supporting team work.</i>	ATM system: the ERATO Electronic Environment in Brest and Bordeaux ACCs.
	Enhanced short-term conflict alert (STCA) for TMA <i>Improving conflict alert for controllers.</i>	Safety: advanced net for approach control implemented at 13 airports, including Paris-CDG, Paris-Orly and Nice.

OPTIMISED ATM NETWORK SERVICES

	Advanced short-term ATFCM measures (STAMs) <i>Less waiting and fewer delays.</i>	ATFCM: STAM Phase 1 in the 5 ACCs and Paris-CDG; step-by-step implementation of functionalities STAM phase 2.
	User-Driven Prioritisation Process (UDPP) departure <i>Airline input improves departure output.</i>	CDM: Paris-CDG in collaboration with Air France (the continuation of the Departure Flexibility project).

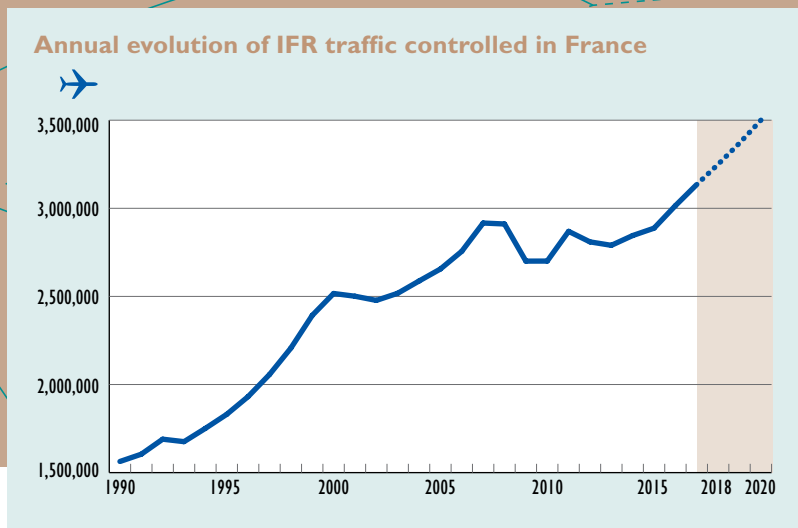
22

co-financed projects
for DSNA



Co-financed by the European Union
Connecting Europe Facility

Some concrete examples from innovation to deployment at DSNA: ERATO stripless, Data Link, XMAN used with BOLT (Coflight trajectory predictions), Point Merge procedure, RWSL...



DSNA, A MAJOR STAKEHOLDER IN THE MODERNISATION OF ATM IN EUROPE

Within the SESAR programme, DSNA secures its strategic, industrial choices in innovative, technical projects for which most of the operational gains will be achieved thanks to the interoperability of systems. European involvement ensures the credibility and importance of the major DSNA technological projects in the deployment of the SESAR Solutions. Regarding the financial aspect, the requirements of the European Commission in matters of accounting and financing traceability for co-financed projects led DSNA to better organize its processes and its tools.

“ Every day, all of DSNA personnel strive to take up the challenges of air navigation, which is in constant evolution, in order to cope with the increase in air traffic. ”

KEY FIGURES

- Overflights: 49%
- International flights: 37%
- Domestic flights: 14%

8,590 controlled flights on average per day in 2017 (vs 6,900 in 2000)

7th July 2017: new peak of daily traffic with 11,016 flights, a European record!