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.

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DE LA TRANSITION
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DSNA

MEMBER OF
SESAR
JOINT UNDERTAKING

SESAR
DEPLOYMENT MANAGER

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.

IN 2018, DSNA delivered a new SESAR Solution **BEAP (Basic Extended ATC Planning)** ready for implementation based on the tool 4Me. BEAP is an automation tool and a set of procedures that support controllers in managing highly complex traffic. The solution aims to bridge the gap between air traffic flow and capacity management (ATFCM) and air traffic control.
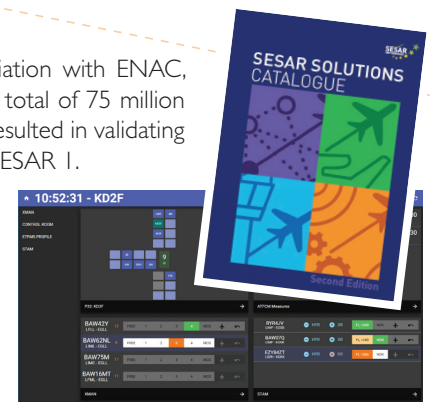
SESAR 2020

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. In addition, DSNA is involved in 3 U-space projects (CORUS, PODIUM, USIS) and 1 demonstration project called AAL2.

25	14 M€	32	3	
R&D projects	eligible for 3 years	new SESAR Solutions	projects DSNA leader	XSTREAM · SAFE · TO BE FREE
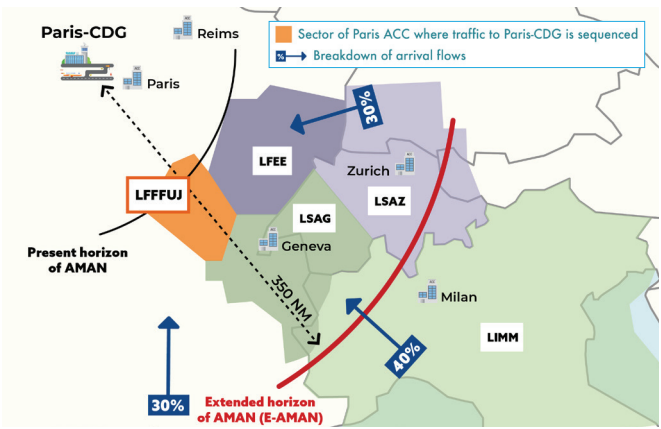
xStream : live trials in 2018 on cross-border arrival management for South-East Paris-CDG inbound flows.
Extended-AMAN up to 350 NM involving a collaborative process between Paris, Reims, Geneva, Zurich and Milan ACCs.
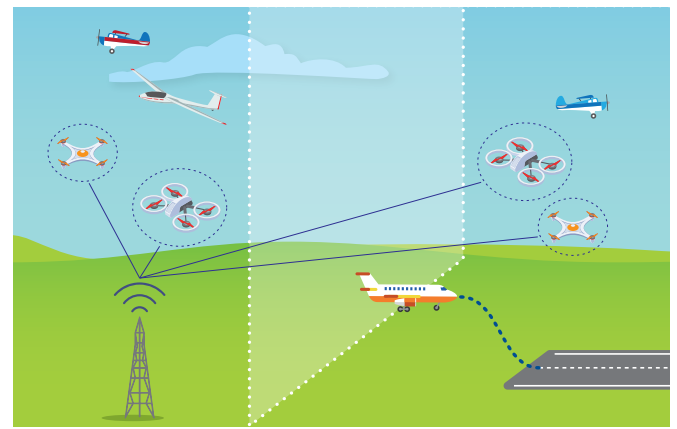
CORUS (Concept of Operations for euRopean Unmanned Systems)
Within this exploratory research project on U-space foundation, DSNA is contributing to designing an Unmanned Traffic Management (UTM) system.

DEPLOYMENT

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).

| SESAR Solutions	Deployment in France
HIGH-PERFORMING AIRPORT OPERATIONS	
RunWay Status Lights (RWSL) *Visual signals to safeguard runway users.*	**Apron safety:** Paris-CDG.
Departure manager DMAN baseline for integrated AMAN/DMAN `PCP` *A baseline for on-time departure.*	**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) *Remote tower services for small airports.*	**ATM system:** live trials ongoing in Saint-Pierre and Miquelon (project Digital Advanced Tower).
ADVANCED AIR TRAFFIC SERVICES	
Extended arrival management (E-AMAN) horizon `PCP` *Assigning holding stacks to the past.*	**Safety-Capacity:** Reims ACC for London and Zurich TMAs.
Arrival management (AMAN) and point merge *Eliminating holding patterns in the extended terminal area.*	**Safety-Capacity:** North-West sector in Paris ACC.
Precision area navigation (P-RNAV) in complex terminal airspace `PCP` *Flying more efficient routes.*	**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 `PCP` *Preparing to land.*	**PBN:** 170 published Localizer Precision with Vertical guidance (LPV) procedures.
Sector team operations - En-route air traffic organiser `PCP` *Supporting team work.*	**ATM system:** the ERATO Electronic Environment in Brest and Bordeaux ACCs.
Enhanced short-term conflict alert (STCA) for TMAs *Improving conflict alert for controllers.*	**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) `PCP` *Less waiting and fewer delays.*	**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 *Airline input improves departure output.*	**CDM:** Paris-CDG in collaboration with Air France (the continuation of the Departure Flexibility project).
Automated Support for dynamic sectorisation *More efficient airspace management.*	**AOR:** dynamic area of responsibility between Marseille and Geneva ACCs.
Basic Extended ATC Planning (bEAP) *Managing traffic complexity and improving flight efficiency.*	**ATFCM:** a service deployed in Reims, Bordeaux and Brest ACCs, under deployment for Paris and Marseille ACCs.

30 co-financed projects for DSNA

DEPLOYING HIGH-PERFORMING AIRPORT OPERATIONS

Paris-CDG and Paris-Le Bourget implemented triple, parallel, independent PBN/ILS approach procedures on 9th October 2018; a first in Europe!

A quick win for safely maintaining a high level of capacity in case of ILS unavailability, and reducing emissions of CO_2 and aircraft noise. The PBN concept developed in Europe is based on SESAR solutions.
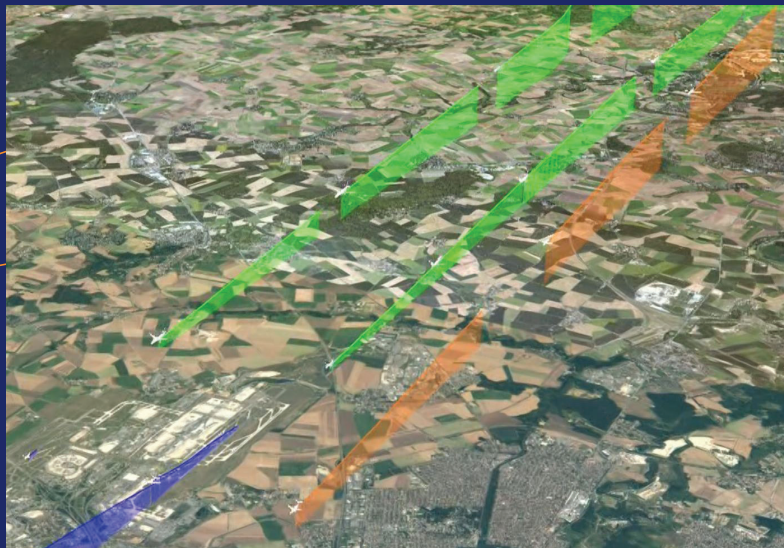
Annual evolution of IFR traffic controlled in France
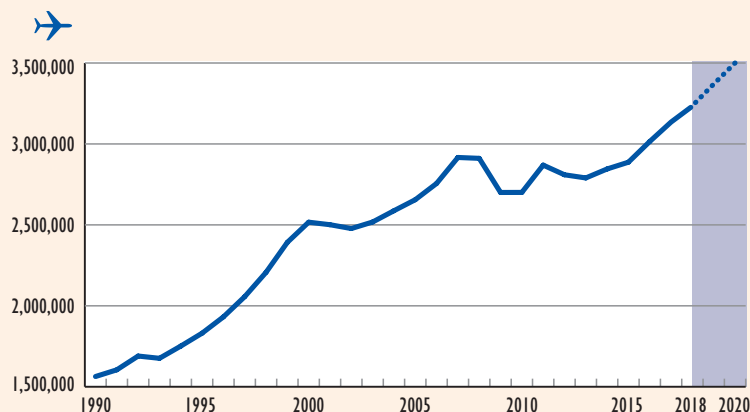
DSNA, A MAJOR STAKEHOLDER IN THE MODERNISATION OF ATM IN EUROPE

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: 51%
International flights: 36%
Domestic flights: 13%

8,830 controlled flights on average per day in 2018 (vs 6,900 in 2000)

6th July 2018: new peak of daily traffic with 11,135 flights, a European record!