ATFCM and ATC

Filling the gap through extended CDM concept

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GATE TO GATE

FLOW CENTRIC OPERATIONS:

DEPLOYING ENABLERS OF NETWORK COLLABORATIVE MANAGEMENT FOR EN-ROUTE AND AIRPORTS

To adapt to new air traffic characteristics and contribute to flight efficiency, DSNA is working at the heart of the SESAR operational concept of "Business Trajectory".
DSNA is taking further steps to develop new customer-oriented operational concepts for fine-tuned management of air traffic flow.

MAC *ATFCM Collaborative Measures*

FOR A SAFER NETWORK MANAGED IN A MORE BALANCED WAY TO REDUCE DELAYS

DSNA has developed an advanced process of ATFCM Collaborative Measures (MAC) with the airlines and the Network Manager (EUROCONTROL) to define the best route options in order to avoid saturated control sectors. Thus, the need for traffic flow regulations is minimized.

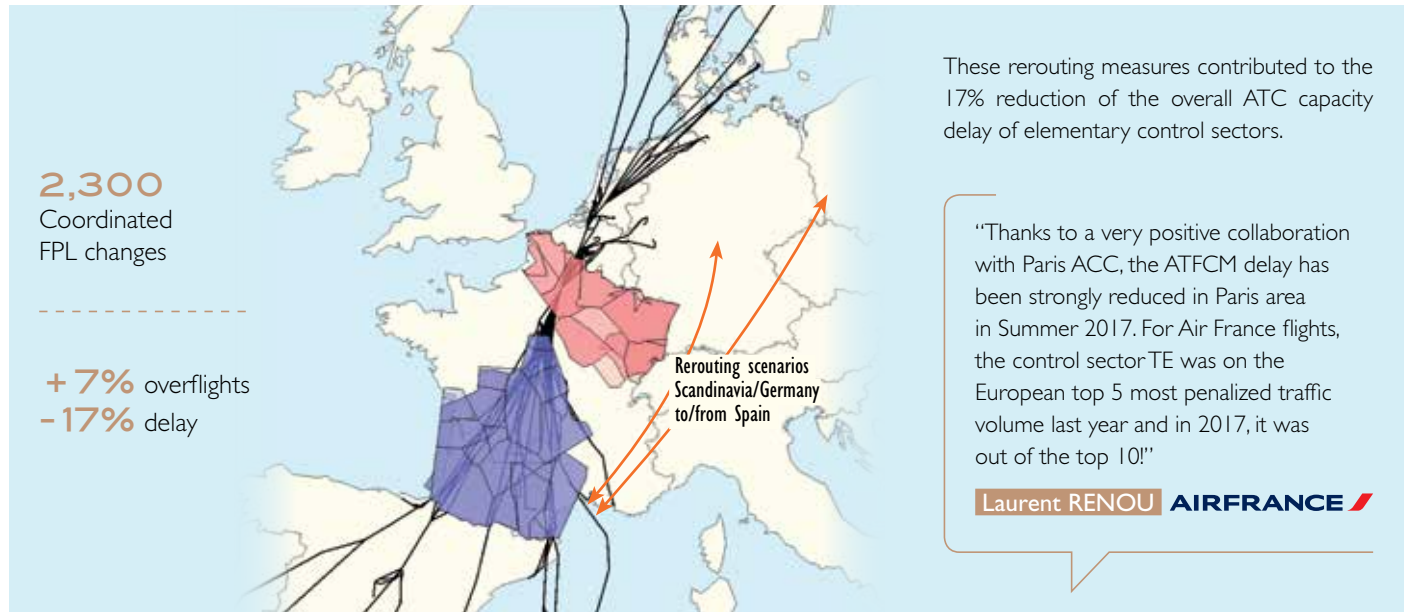The main ATFCM Collaborative Measures are:
- **Route Availibity Document** to define the best organisation for traffic as a function of available capacity (strategical phase).
- **Rerouting and level capping scenarios** (pretactical phase).

- **Collaborative Advanced Planning** (pretactical phase until H-3).
- **Post-operation analysis** to ensure good results and the quality of implemented measures, and to prepare for next season.

A dedicated set of services tailored to airport operators is available on portal: **www.dsna.fr**

ATFCM rerouting scenarios (MAC 2017)

2,300
Coordinated FPL changes

+ 7% overflights
– 17% delay

Rerouting scenarios Scandinavia/Germany to/from Spain

These rerouting measures contributed to the 17% reduction of the overall ATC capacity delay of elementary control sectors.

"Thanks to a very positive collaboration with Paris ACC, the ATFCM delay has been strongly reduced in Paris area in Summer 2017. For Air France flights, the control sector TE was on the European top 5 most penalized traffic volume last year and in 2017, it was out of the top 10!"

Laurent RENOU **AIRFRANCE**

MAC 2017

In Summer 2017, new traffic flows were integrated into this mode of management. In particular, the CAP process was extended with the participation of 15 airlines and 3 ANSPs (DSNA, Skyguide, ENAIRE). Moreover, it was supported by specific live trials in the framework of SESAR 2020 (Project "Network Collaborative Management" led by the Network Manager).

MAC 2018

New measures will be focused on the Top 10 hotspots in France, on the first rotation in order to avoid reactionary delay and on post-operations tool developement to share common views. And of course, new ANSPs and aircraft operators are welcome!
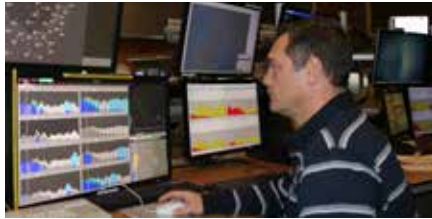
SALTO
Swift ATFCM/ASM Local Tools Organizer

Advanced tools
for Flow Management Units

A NEW ATFCM TOOL IN THE OPERATIONS ROOMS

SALTO is the new DSNA ATFCM tool that will progressively replace the ATFCM CHMI (Collaboration Human Machine Interface) applications of EUROCONTROL. It is developed by DSNA with AGILE method.

SALTO used by Reims UAC Flow Manager.
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SALTO aims at providing flow managers with advanced functionalities, paving the way to tailor-made ATFCM measures, thus minimizing the impact on the network while optimizing resources management.

The 2018 version used in the operations rooms already offers 'what-if' functionalities (Level Cap and Regulation) and will soon be able to upload data to the Network Manager system (regulation request, scenario request) using B2B services.

Tools to optimize the configuration of operations rooms and assess traffic complexity will

be a key factor in improving the performance of the ATM system. SALTO's advanced CDM functionalities will improve the taking into account of the needs of our customers and the cooperation with adjacent Flow Management Positions (FMP). SALTO will contribute to CDM information sharing through a future link with the DSNA portal.

Furthermore, communication features between SALTO and the control working positions will significantly improve situational awareness and help to fill the gap between ATFCM and ATC by disseminating timely and relevant ATFM information to the controllers.

SESAR 2020 Project

SUPPORTED BY
SESAR
JOINT UNDERTAKING

FROM ARRIVAL PLANNING TO EXTENDED ARRIVAL MANAGEMENT

Paris ACC – Optimising arrival flows.

New concept and tools are being developed in Paris ACC to optimise arrival flow management towards Paris-Orly and Paris-CDG airports. Live trials aim at improving flight efficiency, reducing delays and reducing controllers workload in Paris TMA and Extended-TMA. Using an Extended-AMAN tool called "iAMAN", Paris ACC Flow Manager is able to prepare the arrival sequence from the pre-tactical phase in ATFCM horizon, by optimising **Target Time of Arrivals (TTA)** with the Network Manager, to the tactical phase in ATC horizon, by sending speed advisories to upstream ACCs, in collaboration with Airspace Users.

First live trials were performed in Paris-Orly during summer 2017 with promising results in terms of flight efficiency (a strong decrease in vectoring and holding time) and runway capacity (optimal and continuous runway feed).

Next trials are planned in 2018 for arrival flows to Paris-CDG. Enhanced information sharing service will be provided via the DSNA portal.

iAMAN: a single HMI for E-AMAN and improved arrival scheduling.
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Reims UAC – A new, advanced XMAN concept for London and Zurich airports.

Large Scale Demonstrations will be conducted in 2018 to evaluate the benefits to share Coflight trajectory predictions and XMAN flight status with the neighbouring ACCs. It should provide better data quality and situational awareness at the network level. On the technical side, Reims UAC will use the BOLT platform and the implementation of SWIM services that are ready.

AIRPORT AND TERMINAL AIRSPACE MULTISERVICES HMI

Paris-CDG labellised Airport-CDM is one of the busiest airports in Europe with 4 runways, 3 control towers, 1,500 flights per day, 130 km of taxiways.

To optimize airport and TMA capacity with a high level of safety, air traffic management requires very advanced ATFCM and ATC tools.

From its operational needs and its strong experience in innovation, the Paris-CDG air navigation services have developed one ATFM and CDM tool for major airports with a friendly, innovative and efficient HMI. Based on data of the Network Manager system using B2B services and on airport data provided by a dedicated Groupe ADP webservices, this tool provides all useful indicators and a complete set of ATFM and CDM services at a glance to facilitate decision-making for TMA management, arrivals & de-

partures flow management, runway balancing, diversion management and CDM participation. Thus, BigSky provides support to the Tower and Approach supervisors to efficiently contribute to the Airport and Network Operational Plans information sharing (AOP/NOP concept).

Live trials took place at Paris-CDG in March 2018. BigSky implementation with first functionalities is scheduled before summer.

Dashboard: a modern and functional HMI offering better situational awareness.

Benefits with BigSky: flight predictability, capacity optimization, flight efficiency.