

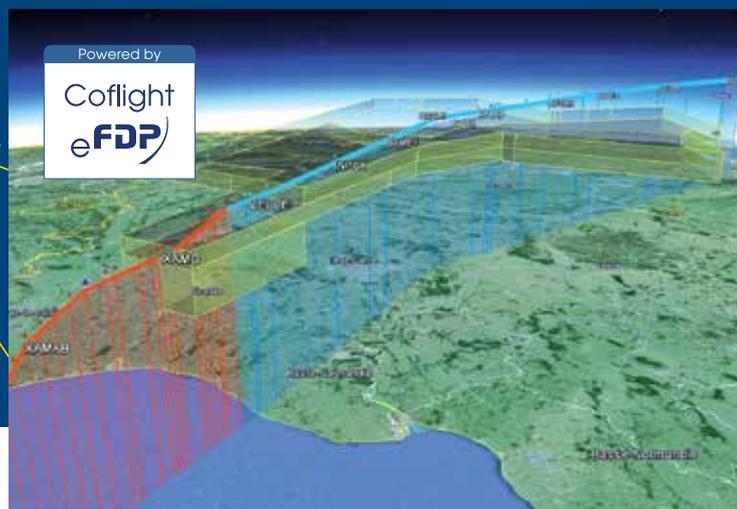
AT THE HEART OF 4-FLIGHT: COFLIGHT, AN ADVANCED FDPS

Coflight, a new Flight Data Processing System (FDPS), was jointly developed by DSNA and ENAV. Thanks to Coflight, air traffic controllers are able to optimize trajectories, which results in flight time and fuel consumption savings.

Coflight provides the following services:

- 4D-trajectory prediction, a trajectory always close to the actual behaviour of the aircraft
- Vertical profile management using all the Requested Flight Level (RFL) as filed in the initial flight plan
- Modification of routes
- Monitoring alerts for flight data discrepancies
- Interoperability functions
- Datalink capabilities
- Gate-to-gate eFDP
- Flexible use of airspace

By using Coflight, ANSPs will be able to deliver optimum performance to airspace users.



Maurice Georges CEO DSNA

“DSNA and ENAV, the Italian ANSP, have set up a strong partnership to jointly develop Coflight and have elaborated a common vision of 4-Flight to satisfy SES requirements for a major ANSP. From the start, DSNA and Thales have designed 4-Flight as a generic product line taking into account current and future operational concepts of the Pilot Common Project, the first SESAR deployment. I am convinced that 4-Flight will provide a very high level of performance for our airspace users and customers.”

Serge Adrian Thales Senior Vice President, French Air Systems

“The deployment of 4-Flight in the two pilot-centres is an extraordinary milestone. It reflects our strong partnership with the DSNA, and paves the way for SESAR and ICAO Aviation System Block Upgrades. We and DSNA firmly believe that the implementation of 4-Flight, together with Coflight, will foster the introduction of future European standards and be a key contributing factor in achieving the objectives of the Single European Sky.”

About DSNA

DSNA, the French Air Navigation Service Provider, handled 2.9 million flights in 2015 with the record one-day peak in Europe: 10,173 on July 17th, 2015.

About Thales

World leader in ATM, Thales offers integrated gate-to-gate solutions, ensuring airport safety, efficient traffic handling operations, data sharing on aircraft and seamless handover operations between territories.

4-Flight

The most innovative ATM
system in Europe

NUI133
049 H23

127234
049 F27

INITIAL DEPLOYMENT

TOWARDS OPERATIONS

DSNA is deploying 4-Flight in its two pilot-centres, Reims
and Aix-en-Provence ACCs.

On the road to compliance with Pilot Common Project's
requirements and SES implementing rules.



THALES



Co-financed by the European Union
Connecting Europe Facility

DSNA, the French Air Navigation Service Provider, and Thales, world leader in ATM solutions, delivered a version of 4-Flight to two pilot centres, Reims and Aix-en-Provence ACCs in 2015, allowing technical and operational extended validations on site. Feedback will be integrated in the operational version, to be deployed in these 2 ACCs in 2018. Finally, 4-Flight will be deployed in the 3 other French ACCs by 2020.



4-Flight is compliant with all new European standards and offers the most advanced system in terms of interoperability.

NEW INDUSTRY-OPERATOR RELATIONSHIPS TO IMPROVE DELIVERY

Earlier validation of innovative functions through incremental approach

Each version will be validated in an operational environment, including shadow mode testing. These validations are conducted by an integrated DSNA/Thales team. The results will be instrumental in improving the specifications of the system in future deliveries.

Integrated team to save time and cost on validation phase

The integrated tests and validation team have been set up to conduct an extensive

testing plan. By detecting defects during early factory testing phases, the correction effort can be made more responsive and efficient to achieve a higher quality product. This will result in time and costs savings.

Quick loop on controller HMI features with AGILE development method

This method, based on quick iterations, has been set up to better accommodate user needs and to enhance user interface features. A DSNA/Thales team is in charge of the design and evaluation of the solutions.

Safety and Human factors

Safety assessments are facilitated thanks to the use of Thales innovative HMI. Our process contributes to enriching the SESAR methodology on the management of major ATM changes.



AN INNOVATIVE STRIPLESS ENVIRONMENT

DESIGNED BY CONTROLLERS FOR CONTROLLERS

A new ATCO user experience thanks to TopSky-Controller HMI and Coflight

In addition to ergonomic studies and thanks to Java technologies, sophisticated and complex support tools are integrated and accessible in a simple and intuitive way on radar displays. This guarantees readability of and consistency in the displayed information. The controllers can then focus on their main control tasks. This HMI enables users to benefit from Coflight's advanced functions.

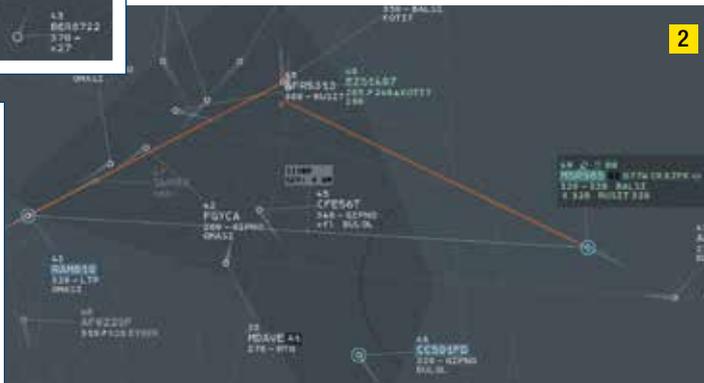
1 Electronic negotiation of coordination data (“What if”)

coordinates flight levels or direct routes with adjacent sectors, directly from track radar without phone calls. Easy to reach, it covers a large part of operational cases.



2 A full set of ATC tools activated on groups of flights facilitates traffic analysis with:

- Minimum radar Separation Tool (**SEP**)
- Vector measurement (**QDM**)
- Minimum Flight Plan Separation (**CPA**)
- **Flight Leg** to display graphical flight plan trajectory
- **Extrapolation** to estimate the future position of a group of flights at any time along their flight leg
- **Contextual filters** to filter the in flight situation according to specific criteria such as levels (XFL, AFL...)



3 Tactical Control Tool (TCT)

for conflict detection within a 5-minute look-ahead timeframe checks the clearances given by the controller:

4 Cooperative tools providing shared situational awareness allow a gain in safety and efficiency by a better sharing of the workload between Executive and Planner Controllers.

- **Shared Highlight:** Marking specific data labels or conflicting flights
- **Datablock:** Identifying groups of flights that require specific analysis
- **Agenda:** Displaying shared potential conflicts allowing rapid access to the flights involved.