

# 4-FLIGHT

The most innovative ATM  
system in Europe

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## INITIAL DEPLOYMENT TOWARDS OPERATIONS

Deployment of 4-FLIGHT is underway in two DSNA pilot-centres, Marseille and Reims ACCs. The 4-FLIGHT simulator for Paris ACC will be deployed in 2018.  
On the road to compliance with Pilot Common Project requirements and SES implementing rules.



THALES



Co-financed by the European Union  
Connecting Europe Facility

In 2017, the French air navigation services handled 3.1 million flights, with one-day peak 11,016 flights, setting new records for air traffic in Europe.

The 4-FLIGHT system, defined by DSNA and developed by Thales, the world leader in air traffic management, is a response to the high increase in air traffic demand in France and Europe. It will equip all 5 French Area Control Centres (ACCs) operating in 1 million km<sup>2</sup> of airspace. This new generation, stripless control system integrates Coflight, the advanced flight data processing system, an interface (HMI) proposing innovative control tools, and the simulation environment for controller transitionning. One of the first expected benefits is an increase of around 20 per cent in overall capacity, enabling DSNA to offer higher quality and more competitive services to all aircraft operators. Notably, Free Route, and more widely the 'User Preferred Route', will be implemented in a complex, high density airspace.

Currently, the first operational version of 4-FLIGHT is under preparation in the two pilot-control centres, Marseille and Reims ACCs, and Paris ACC is getting acquainted with 4-FLIGHT on site.

## 4-FLIGHT AND THE MILITARY OPERATIONAL AIR TRAFFIC

The main technical issues under consideration are:

- **Guaranteeing interoperability (IOP) between civil and military ATM systems** during the transition phase, until 4-FLIGHT implementation in the 5 ACCs. Military ATM systems must be adjusted to take into account 4-FLIGHT interfaces. First operational evaluations will take place in 2018.

- **Matching 4-FLIGHT for specialized military air traffic control cells**, called CMCC, colocated in each ACC. Unlike the current ATM system, 4-FLIGHT will handle military flight plans. Moreover, military ATCOs will benefit from most of civil ATCOs tools. Military specifics will be totally integrated in the civil needs processing. These matchings will be tested in 2019.

## 4-FLIGHT 2.0 FOR PARIS AREA

A test platform has been deployed in Paris ACC to start the parameterization of the system and the preparation of ATCOs and ATSEPs training program. In 2018, the 4-FLIGHT simulator (4-SIM) will be deployed and a rearrangement of existing systems and civil engineering activities will take place to prepare the technical areas dedicated to 4-FLIGHT installation.



Thanks to Coflight, air traffic controllers are able to optimise flight trajectories, which results in flight time and fuel consumption savings. The performance delivered to airspace users is optimal!

- Flight plan data services for civil and military air traffic control
- An advanced 4D trajectory prediction
- Interfaces to feed all ATC tools (MTCDD, AMAN/DMAN, Data Link...)
- ATFCM/ATC efficiency improved through advanced 'What-If' tool
- Interoperability based on Flight Object Sharing for seamless operations

## 4-FLIGHT AT MARSEILLE ACC, PILOT-CENTRE

- **In 2017**, operational trials involving ATCOs controlling on 4-FLIGHT positions installed in the Operations room were conducted in stand alone mode to respect the safety conditions validated by the National Supervisory Authority (NSA). The outcome of these live trials was used to evaluate the intermediate Vops base version, fine tune parameters and consolidate ATCO training material.
- **In 2018**, 4-FLIGHT activities will include further operational live trials on the complete Vops base version simultaneously on several sectors and finalization of ATCO and ATSEP training material.

Parametrization work and testing of new releases of 4-FLIGHT software will keep going. The Operations room will be the subject of further transformation, in order to accommodate sufficient 4-FLIGHT positions for the transition to 4-FLIGHT without downgrading ATC capacity.

- **In 2019**, new operational live trials, much wider in scope and involving some of the large approach centres (APP) connected to Marseille ACC as well as adjacent national and European ACCs will be conducted to evaluate system in-depth integration.

*In March 2017, Marseille ACC conducted a night live operation to evaluate a first level of system integration, including technical monitoring and its new components.*



## 4-FLIGHT AT REIMS ACC, PILOT-CENTRE

- **In 2017**, Reims ACC set up and parameterized the Vops base, an operational version sufficiently advanced to also conduct evaluations on real traffic in stand-alone mode approved by the NSA.
- **In 2018**, 4-FLIGHT activities will be focused on the preparation and the launch of conversion training for ATCOs and ATSEPs and the validation of the latest software versions. In autumn, all 250 controllers will benefit from an initial 3 days training module,

the full training will last 13 days. It will cover theoretical aspects and practical simulation training (about 50 exercises). Specific educational tools designed in collaboration with ENAC, the French Civil Aviation Academy, will be used.

- **In 2019**, new live trials will be held to evaluate system in-depth integration, including technical monitoring and civil-military coordinations. A second phase of conversion training with adverse conditions will also be organized.

*From September 2017 to April 2018, 36 control working positions 4-FLIGHT (30 civil and 6 military) are under going installation in the operations room that was expanded for this purpose.*

*A special simulation room (6 to 8 positions and up to 16 echo-radar pilots) was rearranged in 2017.*



