FCA

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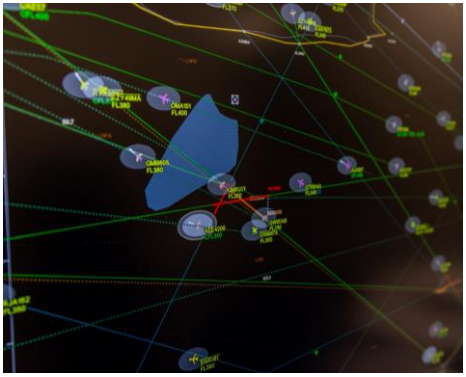
SESAR 3 – Flight Centric ATC project

The FCA concept distance itself from the classical airspace structure consisting of sectors in which typically one controller team is responsible for all aircraft. Instead, the FCA airspace is seen as a uniform area in which several controllers are each responsible for a certain amount of aircraft. With d the use of controller support tools such as the Conflict Detection & Resolution, flight trajectories in FCA can be optimized and conflict situations between two or more aircraft can be solved with the least possible trajectory deviations. The concept also enables a better distribution of the overall workload among all controllers, avoiding the overloading of individual controllers and making more effective use of their capacities. With those effects, FCA enables a reduction in the total fuel required and at the same time decreases the emission of environmentally harmful CO_2.



Facts

Flagship: Connected and automated ATM

Duration: 01 June 2023 – 31 May 2026

Total cost: €4 007 036,25

EU contribution: €2 555 672,89

Validation activities

Exercise001 – DLR & UkSATSE – November 2024
Ukrainian airspace above FL275

Exercise002 – ENAIRE/CRIDA, INDRA & INECO – March/April 2025
Madrid en-route airspace

Project Partner

Deutsches Zentrum für Luft- und Raumfahrt
German Aerospace Center (DLR)

AgentFly Technologies

integra

EUROCONTROL

ENAIRE

ineco

CRIDA

INDRA

УКРАЕРОРУХ
UkSATSE

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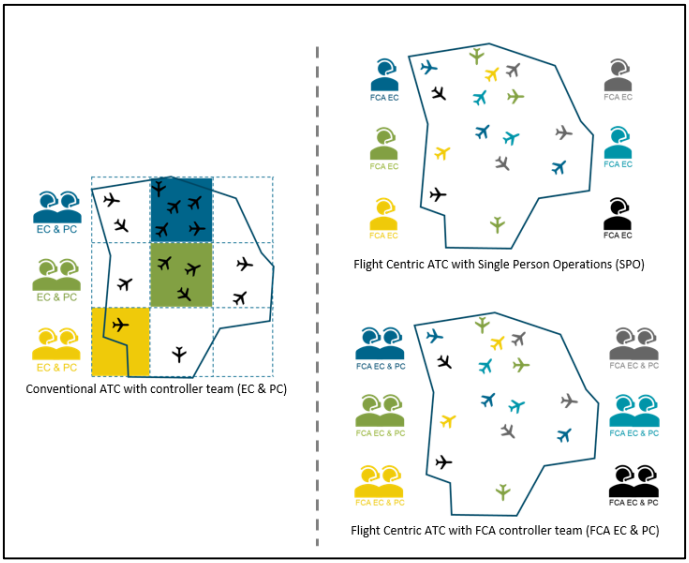
In Flight Centric Air Traffic Control (FCA) the airspace is no longer divided into sectors but considered as a whole. Within this FCA airspace an air traffic controller is responsible for a certain number of aircraft throughout the entire flight segment within a given airspace, whereas other controllers are responsible for different aircraft within the same airspace. The air traffic controllers can work in different team compositions: Either in Single Person Operations (SPO) or as a team consisting of FCA executive and planner controller. The optimal team composition for an FCA airspace is defined by the geographic characteristics and prevailing traffic flows of the area. The concept aims to distribute workload across controllers evenly, by applying appropriate allocation strategies, to increase airspace capacity by eliminating sectors and to reduce fuel consumption and carbon emissions through more direct routing. To maintain safety at all times, FCA introduces new separation management tools (conflict detection and resolution) with an increased degree of automation to support controllers in fulfilling their tasks.

As part of the solution, two real-time exercises and a fast-time simulation will be carried out to validate the different use cases of the concept and support the cost-benefit analysis that will extrapolate the results of the two real-time exercises at European level. In addition, two workshops are planned to discuss the current status of the project and the results of the validations with the various stakeholders.



The planned exercises will serve to measure expected benefits of the FCA concept on capacity (CAP), civil military coordination (CMC), cost efficiency (CEF), environment (ENV), human performance (HP), operational efficiency (OPS) and safety and consequently support the safety and human performance assessments.

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