FCA

Flight Centric Air Traffic Control

1st Newsletter June 2024

The SESAR 3 FCA project is the successor of the two solutions PJ.10-01b and PJ.10-W2-73 FCA as part of SESAR2020. The aim of this project is to achieve technical readiness level TRL6 by the end of the project in May 2026. In order to achieve this, it should be demonstrated that the elimination of sector boundaries in the upper airspace is operationally feasible and provides benefits in the areas of cost-efficiency, fuel efficiency and human performance, while safety standards remain in place.

The FCA consortium consists of nine partners:

***German Aerospace Center** (Coordinator) is the Federal Republic of Germany's research centre for aeronautics and space, conducting research and development activities in the fields of aeronautics, space, energy, transport, security and digitalisation.*

***AgentFly Technologies** is a research and development company focusing on fast-time simulation of air traffic including commercial traffic, general aviation and drones.*

***CRIDA** is a centre for research, development and innovation in the Air Traffic Management field aiming to improve the efficiency and performance of the Spanish air traffic management system.*

***ENAIRE** is state-owned company of the Ministry for Transport and Sustainable Mobility controlling more than two million square kilometres of airspace in Spain.*

***EUROCONTROL** is a pan-European, civil-military organisation dedicated to supporting European aviation by delivering technical excellence expertise across the full spectrum of air traffic management.*

***INDRA** is leading Air Traffic Control (ATC) company and one of the few companies able to cover the full range of ATC products and provide a turnkey solution for control centers.*

***INECO** develops comprehensive, innovative and technological solutions which have allowed to advance towards a new model of mobility that is more sustainable and safer.*

***Integra** Consult is a consultancy company who manages projects, ensures compliance, optimises operations, specifies, and procures systems – all for the benefit of our customers.*

***UkSATSE** is a base of the national Air Navigation System and the Joint Civil-Military Air Traffic Management System of Ukraine.*

We invite you to follow us on our channels to get updates of all the project's activities.

www.sesarju.eu/projects/FCA

News

Project Kick-off Meeting

On 1st June 2023, the SESAR 3 FCA Project took off with an exciting Kick-Off Meeting in Brussels. As this project is the successor of the SESAR 2020 Programme's PJ.10-01b and PJ.10-W2-73 FCA solutions, a lot of work is already done and can be reused.

During the kick-off meeting, the way forward, the structure of the project, planned milestones and key research, and innovation (R&I) needs were presented to our SJU Programme Manager, Nil Agacdiken, and her team.

Scoping and Change Assessment Workshop

Safety and Human Performance have a crucial role in the FCA project. These activities are covered by the safety and human factors experts from the Integra Consult team: Ella Pinska-Chauvin and Jelena Dokic, supported by Simona Blašková.

In September 2023, Integra kicked off the safety and human performance assessment with a Scoping and Change Assessment workshop held in Brussels. The workshop fostered insightful conversations around key challenges and opportunities for the FCA concept and emphasized the importance of further development of the solution.

1st Technical Review Meeting

The 1st Technical Review Meeting (TRM) of the FCA project took place in Brussels on 26th March 2024. The aim was to present the current project status to the SESAR 3 Joint Undertaking. In short, the project is on track.

All milestones scheduled for the first year of the project were achieved on time. In addition, the initial versions of the 'STAND', 'REG', 'Communication, Dissemination and Exploitation Plan' and 'Data Management Plan' documents were submitted. The same applies to the initial and final 'Project Management Plan'.

Both planned exercises

- EXE001: DLR & UkSATSE - Simulation of Ukrainian airspace above FL275 as unified Flight Centric ATC airspace
- EXE002: ENAIRE/CRIDA & INDRA - Simulation of parts of the Spanish airspace as Flight Centric ATC airspace

are on track and will be conducted in late 2024 and early 2025.

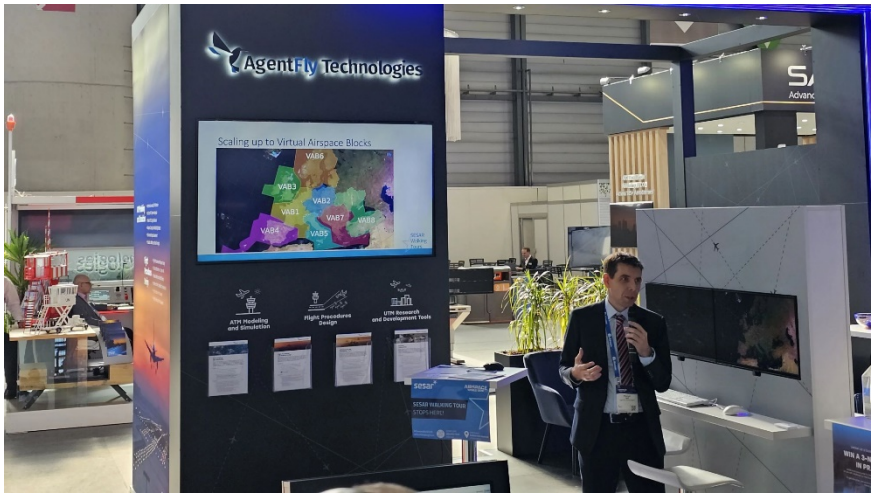
#ResearcherFriday Campaign

We are happy to announce a LinkedIn campaign to introduce our project team members. We proudly present our colleagues - researchers and experts in various fields of air traffic control fields. Together, we create a strong, experienced, and knowledgeable team to reach all objectives of the project and move towards deployment of the flight centric ATC.

Meet one of our colleagues every Friday and get to know their faces, backgrounds, roles, and skills. Follow us for several weeks on LinkedIn and look out for the hashtag #ResearcherFriday.

Events

Airspace World



The Airspace World, which took place in Geneva from 19th to 21st of March 2024, is the largest and most influential airspace management event in the world. Over the course of three days, it gathered close to 7,000 delegates of ANSPs, suppliers, ATM professionals, innovators, and new technology owners for a packed agenda of learning, connecting, collaborating, sharing, and business across exhibition and conference. The FCA project was widely presented at theatre talks, walking tours, and partners' booths.

Tobias Finck had a talk at **Boeing Theatre** on "**Flight Centric ATC - An advanced concept for the En-Route environment.**" The theatre was packed, no seats remained free, and everybody listened to the advantages of the flight centric concept. After the end of the session, a bunch of questions showed interest in the audience.

SESAR JU organized 10 **walking tours** attracting close to 500 participants, who had a chance to meet with experts from the SESAR community and see first-hand the wide variety of solutions that are being delivered and deployed across Europe. Premysl Volf participated in the session "**Connected and Automated ATM**," presenting the flight centric ATC concept and results of European-scale simulations.

Five project partners, namely **German Aerospace Center** (DLR), **AgentFly Technologies**, **Enaire**, **Eurocontrol**, and **Indra**, shined with booths at the exhibition. A crowd of delegates, interested discussions, new ideas, future visions, and social events created an exceptional atmosphere for the exhibition. We are proud to present the FCA project and be an integral part of the community and look forward to seeing you next year in Lisbon.

Transport Research Arena

The Transport Research Arena (TRA), which took place in Dublin from 15th to 18th April 2024, is the most important European transport event covering all modes of transport and all aspects of mobility: air, rail, road, water and intermobility. This makes it the largest European research and technology conference on transport and mobility**.**

The SESAR 3 FCA project took part in several sessions and at the SESAR 3 Joint Undertaking stand. On this occasion, insights were provided into the possible future of European air traffic control.

Panel Discussion on the Single European Sky

Review of the past two decades of European air traffic management and discussion on the way forward to achieve one Single European Sky. Moderated by Dr Marina Efthymiou, Professor of Air Traffic Management at Dublin City University, with contributions from renowned speakers including:

- Andreas Boschen, Executive Director of SESAR 3 Joint Undertaking
- Philip Hughes, Head of European Aviation Plans, Cooperation & Stakeholder Support, EUROCONTROL
- Adrian Corcoran, Director of Economic Regulation, Consumer Affairs and Licensing, Irish Aviation Authority
- Dr. Peter Kearney, CEO of AirNav Ireland
- Marek Bekier (PhD), Senior VP Europe / CEO ACR Switzerland, ACR Aviation Capacity Resources
- Thomas Fowler, Director of Sustainability and Finance, Ryanair - Europe's Favourite Airline
- Tobias Finck, Scientific Researcher & SESAR 3 FCA Project Lead, German Aerospace Center (DLR)

Technical Session on "Future Operations Resilience"

In this session we presented the conference paper: ‘Flight Centric ATC: Reflecting Three Years of Research on an Efficient and Eco-friendly Air Traffic’ by Tobias Finck, Carmo S. Klünker and Mara Weber, which summarizes the work carried out as part of the PJ.10-W2-73 FCA solution within SESAR 2020 Wave 2 from 2019 - 2023.

SESAR booth

The conference participants had also the opportunity to attend a presentation on Flight Centric ATC at the SESAR 3 Joint Undertaking stand, which provided exciting insights into the research on a flight centric ATC airspace.

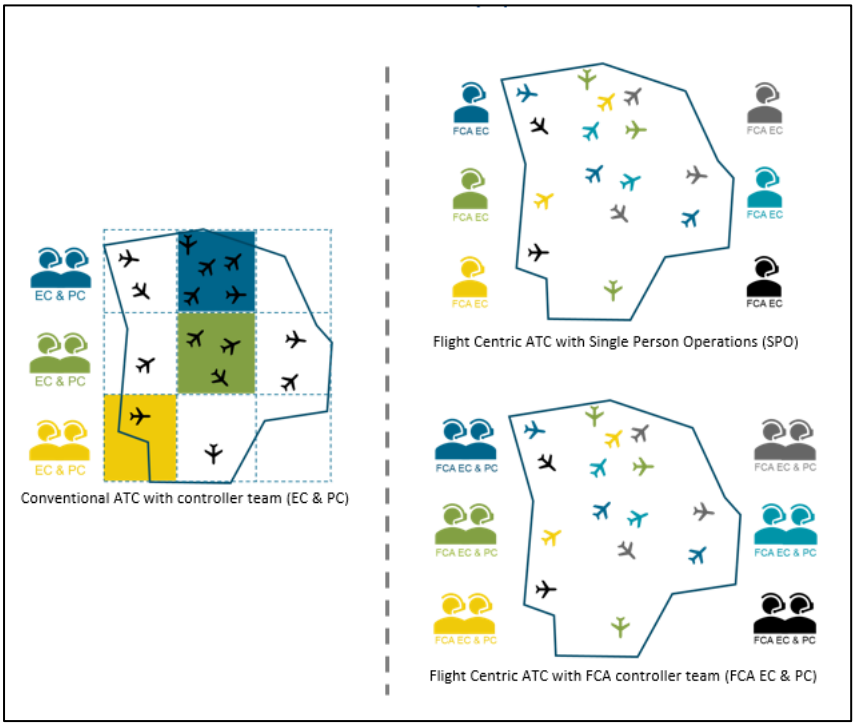
New Trends in Civil Aviation

The New Trends in Civil Aviation (NTCA) conference provides a platform for interactions among communities of interest on aviation problems and applications. It serves both practitioners and academics, providing a forum to exchange ideas and experiences on technology, methodology, applications, case studies, and practical experiences with both civil and military aviation. The NTCA conference brings together members of aviation communities to broaden their knowledge in emerging areas of research in the field of civil and military aviation.

Premysl Volf was invited to be a keynote speaker and provide insights into flight centric ATC. The talk explained the principles of the concept and provided insights into the benefits and problems related to this new approach to air traffic control. Large-scale simulation results demonstrated the potential and advantages of the concept application at the European scale.

Blog

What Is Flight Centric ATC?



In Flight Centric Air Traffic Control (FCA) the airspace is no longer divided into sectors but considered as a whole. Within the 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. Within Flight Centric ATC, 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.

Partners

EUROCONTROL

indra

AgentFly Technologies

УКРАЕРОРУХ
UkSATSE

DLR Deutsches Zentrum für Luft- und Raumfahrt
German Aerospace Center

ineco

CRIDA
I+D+i - ATM

ENAIRe

integra

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