

HUCAN

AI-enabled ATM certification and automation guidelines

The project is working on a novel and holistic approach for the certification and approval of AI-enabled ATM airborne and ground systems. The project aims to contribute to shaping the future use of AI in air traffic management.



www.sesarju.eu/projects/HUCAN

SYNTHAIR

Improved ATM automation and simulation through AI-based universal models for synthetic data generation

The project is working on AI-based methods to generate synthetic data. The project is leveraging advances in computer vision and language technology to develop a universal time series generator (UTG).



www.sesarju.eu/projects/SynthAIR

HYPER Solver

Artificial Intelligence controller able to manage Air traffic Control (ATC) and Air Traffic Flow Management (ATFM) within a single framework

In air traffic flow management (ATFM), measures are issued when traffic demand exceeds capacity usually in advance of take-off. The challenges facing ATFM and air traffic control may differ and solutions to them are often developed in isolation of one another. The project aims to develop a "hyper solver" based on an advanced artificial intelligent reinforcement learning method.



www.sesarju.eu/projects/hypersolver



ASTRA

AI-enabled tactical FMP hotspot prediction and resolution

With today's tools, tactical hotspots are only identified up to around 20 minutes in advance. The project aims to predict and resolve hotspots much earlier using an AI-enabled tool. The overall aim is to optimise capacity while enabling aircraft to adhere to more efficient and green trajectories.



www.sesarju.eu/projects/ASTRA

TRUSTY

Trustworthy intelligent system for remote digital tower

The project is applying visual analytics, data-driven storytelling, and immersive analytics in human-machine interactions (HMI). In doing so, the project is at the crossroads of trustworthy AI, multi-model machine learning, active learning, and UX for human and AI model interaction.



www.sesarju.eu/projects/trusty

AI4HyDrop

An AI-based Holistic Dynamic Framework for a safe Drone's Operations in restricted and urban areas

Drones are already used in many sectors, from agriculture to healthcare and emergency services. Given the scale and complexity of drone operations expected in the coming years, a holistic approach needs to be taken to managing the airspace. The project is developing a framework that incorporates various AI-based tools and associated information flows to enable future drone operations at scale.



www.sesarju.eu/projects/AI4HyDrop



JARVIS

Just a rather very intelligent system

The project is developing three AI based solutions: an airborne digital assistant to support crew and single pilot operations; an ATC digital assistant to support more efficient and green tower operations; and an airport digital assistant to increase the level of automation in airports.



www.sesarju.eu/projects/JARVIS

DARWIN

Trustworthy intelligent system for remote digital tower

The project is developing digital assistants to support single pilot operations, assuring the same (or higher) level of safety and same (or lower) workload as operations with a full crew today. The solutions aim to enable operational efficiency and route flexibility, taking into account the complexity of the future airspace.



www.sesarju.eu/projects/DARWIN

FASTNET

Future Data Services and Applications for airports and Network

The project is focusing on the pre-tactical and strategic planning, using artificial intelligence to enable airport-to-airport collaborative planning within the network operations plan. The project relies on state-of-the-art technologies to integrate new datasets available at local level, such as local restrictions, pre-tactical flight information and strategic local information in order to enrich demand and capacity balancing information and ensure efficient planning from the strategic phase.



www.sesarju.eu/projects/FASTNET



KAIROS

Unlocking the potential of AI-based Weather forecasts for Operational Benefits

The project aims to improve the quality of meteorological information through the use of artificial intelligence. Specifically, it will integrate live weather information from AI forecasts with existing decision support tools. The aim is to improve the management of demand and capacity balancing across the network level, but also for local flow management, and urban air mobility.



www.sesarju.eu/projects/KAIROS

MAIA

Multimodal Access for Intelligent Airports

The project will develop a set of data analytics and modelling tools to support the implementation of multimodal airport access solutions based on two passenger mobility innovations. The tools will monitor and anticipate passenger behaviour changes due to these new options, optimise vehicle dispatching under multimodal disruptions and recommend appropriate locations for vertiports.



www.sesarju.eu/projects/MAIA

MULTIMODX

Integrated Passenger-Centric Planning of Multimodal Transport Networks

Air and rail are natural multimodal partners and their collaboration is key to assuring a more efficient, predictable, and environmentally sustainable door-to-door passenger journey. The project will develop a set of innovative solutions and decision-making tools to support the coordinated planning and management of multimodal transport networks. Specifically, the project will develop a modelling and evaluation framework, and a solution to enable the coordinated design of air and rail schedules according to expected demand behaviour.



www.sesarju.eu/projects/MultiModX



HARMONIC

Harmonised network through smart technology and Collaboration

The project completes key aspects of the demand and capacity balancing (DCB) operational concept in those areas where improvements would make the implementation of the operational concept more efficient. Solutions will cover automatic support for spot analysis and resolution, integration of constraints and dynamic airspace configuration (DAC). The overall aim prepare these solutions for early deployment, integrating the new architecture of integrated Network Management (iNM).



www.sesarju.eu/projects/HARMONIC

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