HERON

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HERON-PROJECT

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Highly Efficient Green Operations

Coordinator: Airbus
Project partners: Air France, Airtel, ALTYS Technologies, Brussels Airport, Deep Blue, DFS, DSNA, EasyJet, ENAIRE, ENAV, ESSP, EUROCONTROL, Groupe ADP, Istanbul Grand Airport, KLM Royal Dutch Airlines, Leonardo, Lufthansa Group, NATS, PANSA, Schiphol Nederland BV, skeyes, The Chamber of Commerce and Industry of Corsica, Transavia.

SUPPORTED BY sesar JOINT UNDERTAKING

Co-funded by the European Union

The project has received funding from the CINEA - European Climate, Infrastructure and Environment Executive Agency under the Connecting Europe Facility in cooperation with the SESAR 3 Joint Undertaking as one of its flagship Digital Sky Demonstrators.

ABOUT THE PROJECT

HERON stands for "Highly Efficient gReen OperatioNs": its goal is to demonstrate how aviation's environmental footprint can be reduced with innovative procedures that range from more efficient aircraft operations to optimised management of air traffic during the flight planning phase and then in real-time.

EXPECTED OUTCOMES

LINKED TO 5 DEMONSTRATIONS

INTEGRATED 4D FOR GREEN TRAJECTORIES This outcome is linked to the demonstration of the operational and environmental benefits of integrating Automatic Dependent Surveillance – Contract (ADS-C) data into ATM and ATC systems and procedures. It aims to improve the environmental efficiency (reducing noise and CO2 emissions) of the arrivals through several measures supported by ADS-C information exchanges, and to facilitate optimised climb profiles thanks to the sharing of planned optimised climb speeds with ATC.

GREEN SURFACE OPERATIONS MANAGEMENT The efforts across this focus area aim to implement various greener and/or smart technologies to increase the sustainability of aircraft ground operations. The demonstrations will put to the test, in a real-world setting at medium and large European airports, different concepts, services and technologies, such as the automation of various aspects of the aircraft turnaround and the development and implementation of different forms of sustainable taxiing operations.

OPTIMISED APPROACHES PROFILES AND SPACING Demonstration of various solutions for approach, landing and runway use, addressing optimisation of descent profiles (onboard DPO function or AI-based Terminal Manoeuvring Area route design), runway delivery (ORD) tool for Controllers integrating wind effect, runway occupancy time category (ROCAT) spacing, increased second glide slope (ISGS) and Required Navigation Performance – Authorization Required (RNP-AR) procedures. Demonstrations will measure in real-world operations the benefits in terms of greater operational efficiency, resulting in lower emissions, local noise impact reduction and increased accessibility, and support the evolution of standards and regulatory requirements.

IMPROVED TRAJECTORY PLANNING Improves the management of trajectory through the implementation of combined ASM/ATFCM solutions (strategic and pre-tactical operational phases) at EUROCONTROL/Network Manager (NM) and by several Air Navigation Service Providers, allowing airspace users to file more efficient trajectories according to the available ATM improvements.

ADS-C COMMON SERVICES Supports and enables solutions which, using exchanged ADS-C information, implement the adoption of ATM tools and procedures that improve the environmental efficiency (noise and CO2 emissions reduction). The services will actively support the HERON project demonstrations (i.e., Integrated 4D for Green Trajectories, Improved Trajectory Planning, and Optimised Approaches), wherein the data will be used for the purpose of the test scenarios and exercises to be performed.