

PROJECT

AURORA

Advanced User-centric efficiency metRics for air traffic perFORMance Analytics

Funding: European (Horizon 2020)

Duration: Apr 2016 - Mar 2018

Status: Complete

Total project cost: €829,313

EU contribution: €829,313



Call for proposal: H2020-SESAR-2015-1

[CORDIS RCN : 200861](#)

Objectives:

This project will propose advanced metrics to assess the operational efficiency of the ATM system (challenge of the topic ER-11-2015). These new metrics will be developed with the aim of encapsulating the airspace users' operational objectives, considering fuel consumption, schedule adherence and cost efficiency of the flights. User-preferred trajectories will be defined as references for performance analysis purposes. AURORA will also propose metrics to measure how fairly the inefficiencies in the system are distributed among the different airspace users.

The other main research area will consist of exploring and testing techniques borrowed from the data science and information management fields for the collection and aggregation of data. These techniques will allow AURORA to propose a new framework for ATM decision-making based on real-time performance monitoring of user-centric efficiency indicators, where the airspace users could take an active role.

AURORA will validate all these advanced user-centric efficiency metrics (and the proposed methods to obtain them) at European and local level by comparing them with today's Flight Efficiency Indicator used by the Performance Review Commission. AURORA will also assess the benefits for the performance-oriented operational concepts (e.g. SESAR) of using the real-time ATM performance monitoring framework to identify opportunities to improve system efficiency and better cater for the users' operational needs.

The innovative method to assess the metrics will be based on defining a generic advanced trajectory-based airline cost model that captures, to the extent required for air traffic efficiency assessment, the impact of different aspects of the trajectory (e.g. fuel burn or departure and arrival times) on the airlines' operational costs. The model will be characterized by not requiring sensitive information from the airspace users and by the fact that it will be applicable to both recorded and streaming data.

Parent Programmes:

[H2020-EU.3.4. - Horizon 2020: Smart, Green and Integrated Transport](#)

Institute type: Public institution

Institute name: European Commission

Funding type: Public (EU)

Lead Organisation:

Centro De Referencia Investigacion Desarrollo E Innovacion Atm, A.i.e.

Address:

Avda De Aragon 402 4 Edificio Allende
N/A Madrid
Spain

EU Contribution: €299,375

Partner Organisations:

University College Dublin, National University Of Ireland, Dublin

Address:

Belfield Campus
4
Dublin
Ireland

Organisation Website:

<http://www.ucd.ie>

EU Contribution: €211,459

Flightradar24 Ab

Address:

BRUNNSGATAN 13
11138 STOCKHOLM
Sweden

EU Contribution: €95,625

Boeing Research & Technology Center

Address:

Cañada Real de las Merinas 1-3, Edificio 4
28042 MADRID
Spain

Organisation Website:

<http://www.boeing.com>

EU Contribution: €222,854

Technologies:

Aircraft design and manufacturing
Energy management model

Development phase: Research/Invention

STRIA Roadmaps: Network and traffic management systems

Transport mode: Air transport

Transport sectors: Passenger transport, Freight transport

Geo-spatial type: Other