

PROJECT

ARTIMATION

TRANSPARENT ARTIFICIAL INTELLIGENCE AND AUTOMATION TO AIR TRAFFIC MANAGEMENT SYSTEMS

Funding: European (Horizon 2020)

Duration: Jan 2021 - Dec 2022

Status: Ongoing

Total project cost: €999,375

EU contribution: €999,375



Call for proposal: H2020-SESAR-2019-2

[CORDIS RCN : 231815](#)

Objectives:

Recently, Artificial intelligence (AI) algorithms have shown increased interest in various application domains including in Air Transportation Management (ATM). Different AI in particular Machine Learning (ML) algorithms are used to provide decision support in autonomous decision-making tasks in the ATM domain e.g. predicting air transportation traffic and optimizing traffic flows. However, most of the time these automated systems are not accepted or trusted by the intended users as the decisions provided by AI are often opaque, non-intuitive and not understandable by human operators. Safety is the major pillar to air traffic management, and no black box process can be inserted in a decision-making process when human life is involved.

In order to address this challenge related to transparency of the automated system in the ATM domain, ARTIMATION focuses on investigating AI methods in predicting air transportation traffic and optimizing traffic flows based on the domain of Explainable Artificial Intelligence (XAI). Here, AI models' explainability in terms of understanding a decision i.e., post hoc interpretability and understanding how the model works i.e., transparency can be provided in air traffic management. In predicting air transportation traffic and optimizing traffic flows systems, ARTIMATION will provide a proof-of-concept of transparent AI models that includes visualization, explanation, generalization with adaptability over time to ensure safe and reliable decision support.

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)

Other programmes: SESAR-ER4-01-2019 Digitalisation and Automation principles for ATM

Lead Organisation:

Maelardalens Hoegskola

Address:

HOGSKOLEPLAN 1
721 23 VASTERAS
Sweden

Organisation Website:

<http://www.mdh.se>

EU Contribution: €350,000

Partner Organisations:

Deep Blue Srl

Address:

Via Ennio Quirino Visconti 8
193 Roma
Italy

EU Contribution: €211,875

Ecole Nationale De L Aviation Civile

Address:

Avenue Edouard Belin 7
31055 31055
France

Organisation Website:

<http://www.enac.fr>

EU Contribution: €245,000

Universita Degli Studi Di Roma La Sapienza

Address:

Piazzale Aldo Moro 5
00185 ROMA
Italy

Organisation Website:

<http://www.uniroma1.it>

EU Contribution: €192,500

Technologies:

Aircraft operations and safety
Big data analytics for management of ATM
systems

Development phase: Validation

Information systems
Machine learning for air traffic management

Development phase: Validation

STRIA Roadmaps: Network and traffic management systems

Transport mode: Air transport

Transport sectors: Passenger transport, Freight transport

Transport policies: Safety/Security, Digitalisation

Geo-spatial type: Other