

PROJECT

Domino

Novel tools to evaluate ATM systems coupling under future deployment scenarios

Funding: European (Horizon 2020)

Duration: Jan 2018 - Dec 2019

Status: Complete

Total project cost: €902,205

EU contribution: €805,125



Call for proposal: H2020-SESAR-2016-2

[CORDIS RCN : 213195](#)

Objectives:

The primary objective of Domino is to develop a set of tools, a methodology and a platform to assess the coupling of ATM systems from a flight and a passenger perspective. The platform will allow ATM system designers to gain insight on the impact of applying new mechanisms. It will provide a view of the impact of deploying solutions in different manners, e.g., harmonized vs. local/independent deployment, and information on the criticality of elements in the system and how this might be different for different stakeholders.

Domino will identify, test and validate metrics based on complexity science to understand the coupling of elements in the ATM systems, creating a toolbox to analyse the system. A generalizable and extendable agent-based model, capable of capturing the interactions between stakeholders and ATM elements, will be developed. Behavioural models will be created to capture the impact of modifying the operational context by introducing new mechanisms.

Domino will define a set of case studies to test the methodology based on a few mechanisms: Dynamic Cost Indexing (DCI), User-Driven Prioritisation Process (UDPP) and Extended Arrival Manager (E-AMAN). These mechanisms will be modelled with different operational concepts and uptakes and in isolation or in conjunction.

Two sets of case studies will be used: investigative and adaptive. Investigative case studies will be defined early in the project and prioritised with stakeholder consultation. The results of those investigative case studies along with potential modifications to mitigate or enhance some of the effects observed will be presented at a dedicated workshop. The output of that workshop with stakeholders will be the adaptive case studies, which will be tested in their turn.

A key element of Domino is the continuous consultation process through the establishment of an Advisory Board composed by stakeholders, and through interaction with stakeholders with dedicated consultations and a targeted workshop.

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:

The University Of Westminster Lbg

Address:

Regent Street 309

London
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United Kingdom

EU Contribution: €303,750

Partner Organisations:

Universita Degli Studi Di Trieste

Address:

Piazzale Europa 1
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Italy

EU Contribution: €132,250

Eurocontrol - European Organisation For The Safety Of Air Navigation

Address:

Rue De La Fusée 96
1130 Bruxelles
Belgium

EU Contribution: €0

Fundacion Instituto De Investigacion Innaxis

Address:

Calle Marques De Lozoya 23 5A
28007 Madrid
Spain

EU Contribution: €198,500

Alma Mater Studiorum - Universita Di Bologna

Address:

Via Zamboni 33
40126 Bologna
Italy

Organisation Website:

<http://www.unibo.it>

EU Contribution: €170,625

Technologies:

Aircraft operations and safety
Air Traffic Flow and Capacity Management (ATFCM) decision support tool

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