

PROJECT

## EVOAtm

# Evolutionary ATM. A modelling framework to assess the impact of ATM evolutions

**Funding:** European (Horizon 2020)

**Duration:** Jan 2018 - Dec 2019

**Status:** Complete

**Total project cost:** €968,880

**EU contribution:** €968,880



**Call for proposal:** H2020-SESAR-2016-2

[CORDIS RCN : 213193](#)

### Objectives:

The overall goal of EvoATM (Air Traffic Management) is to build a framework to better understand and model how architectural and design choices influence the ATM system and its behaviours, and how the expected ATM performances drive the design choices.

The EvoATM project will model a specific part of ATM system combining the agent-based paradigms with evolutionary computing. Specifically, it will define a solver which finds an optimal tuning of the design of new/modified ATM components to accomplish the expected performances. It will adopt sensitivity analysis strategies in order to understand the influence of ATM component parameters on behaviours at the component performance level (behaviours of other components) and at whole system performance level. It will test the framework by using known scenarios and quantitative indicators to validate its effectiveness in terms of change impact assessment, support to design and support to strategic thinking.

The project will provide methodological guidelines to extend the proposed framework to any part of ATM to be modelled.

The EvoATM consortium involves a multidisciplinary group of experts representing the different expertise classes: complex systems modelling, evolutionary computing, ATM modelling, human aspects, aerospace engineering, and verification and validation. The chosen Advisory Board will guarantee the coordination and dialogue with the impacted stakeholders: ASDA (Association for the Scientific Development of ATM in Europe), ENAV (Italian air navigation service provider), EUROCONTROL, and LEONARDO (Italian industry).

### 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 Italiano Ricerche Aerospaziali Scpa**

**Address:**

Via Maiorise s/n  
81043 CAPUA (CE)  
Italy

**Organisation Website:**

<http://www.cira.it>

**EU Contribution:** €234,813

## Partner Organisations:

### 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:** €149,318

### Aslogic 2011 SI

**Address:**

AVDA ELECTRICIDAD 1 PLANTA 2 PUERTA 1  
08191 RUBI  
Spain

**EU Contribution:** €138,750

### Universitat Autonoma De Barcelona

**Address:**

Campus De La Uab Bellaterra  
8193 Cerdanyola Barcelona  
Spain

**EU Contribution:** €151,250

### Projecto, Empreendimentos, Desenvolvimento E Equipamentos Cientificos E De Engenharia

**Address:**

Rua Rodrigo Da Fonseca 91/2D  
1250 190 Lisboa  
Portugal

**EU Contribution:** €128,125

### Institute For Sustainable Society And Innovation

**Address:**

VICO TRONE 19  
80136 NAPOLI  
Italy

**EU Contribution:** €166,625

## 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

