



# OPTIFRAME : Project Overview

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Founding Members



# Consortium



# Main objective

Application of principles of mathematical modelling and optimization to configure and assess the performance of the Trajectory Based Operations (TBO) concept.

- Viability of the concept
- Major issues (e.g., barriers, constraints, stakeholders' expectations, etc.)
- Whether and to what extent the objectives of flexibility of airspace users and predictability of the ATM system can be achieved

# Project outcome



Development of a framework to address the identified objectives and provide guidance to decision makers on the potential and conditions of deployment of the TBO concept.

This framework, consisting of mathematical models, solution algorithms and conditions of applicability, can be used:

1. as a “simulator” to fully understand the benefits and limitations of the TBO approach;
2. to investigate trade-offs between different competing objectives relevant to the TBO concept ;
3. as an engine for the preliminary identification, on a daily basis, of promising ATM interventions regarding the ECAC-wide area.

# Innovative aspects of the proposed approach

1. It explicitly takes into account the route **preferences** and flight criteria and **priorities** of the airspace users.
2. Holistic view of the ATM system (by considering all ATM system components for the entire ECAC area).

... but barriers, enablers and potential benefits from the TBO concept implementation should be analysed.

# Research questions



How stakeholders' priorities and preferences can be incorporated into mathematical models?

What are the scalability issues associated with the development and implementation of these models and algorithms?

## Project activities (WPs)

WP1 Project Management [ULANC]

WP2 State-of-the-art and Stakeholder Expectations [CFR]

WP3 Data Management [CFR]

WP4 Modelling of TBO [ULANC]

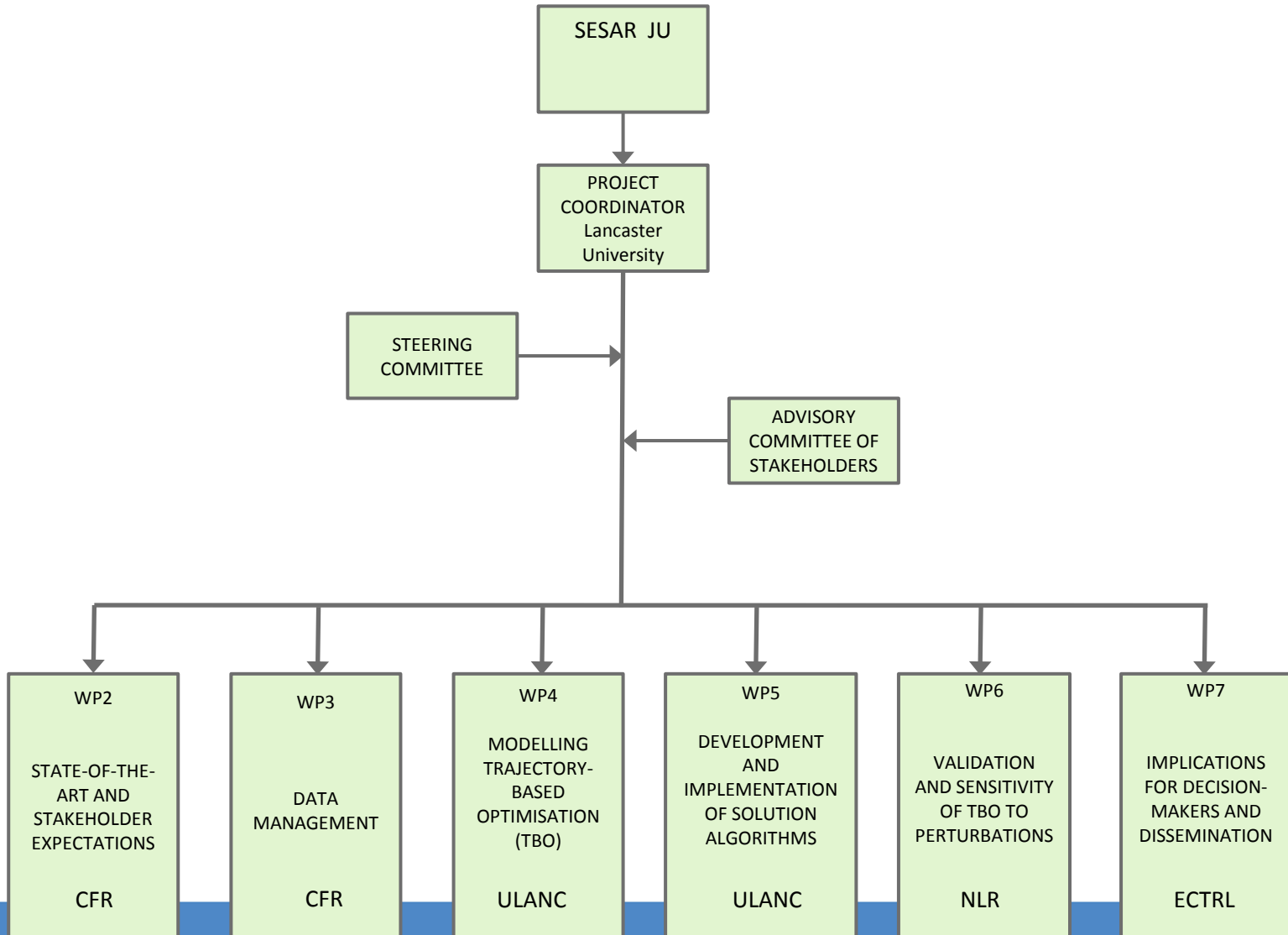
WP5 Development and Implementation of Solution Algorithms  
(exact and heuristic) [ULANC]

WP6 Validation of the OptiFrame approach in normal and  
disturbance cases [NLR]

WP7 Implications for Decision Makers and Dissemination of results  
[EUROCONTROL]

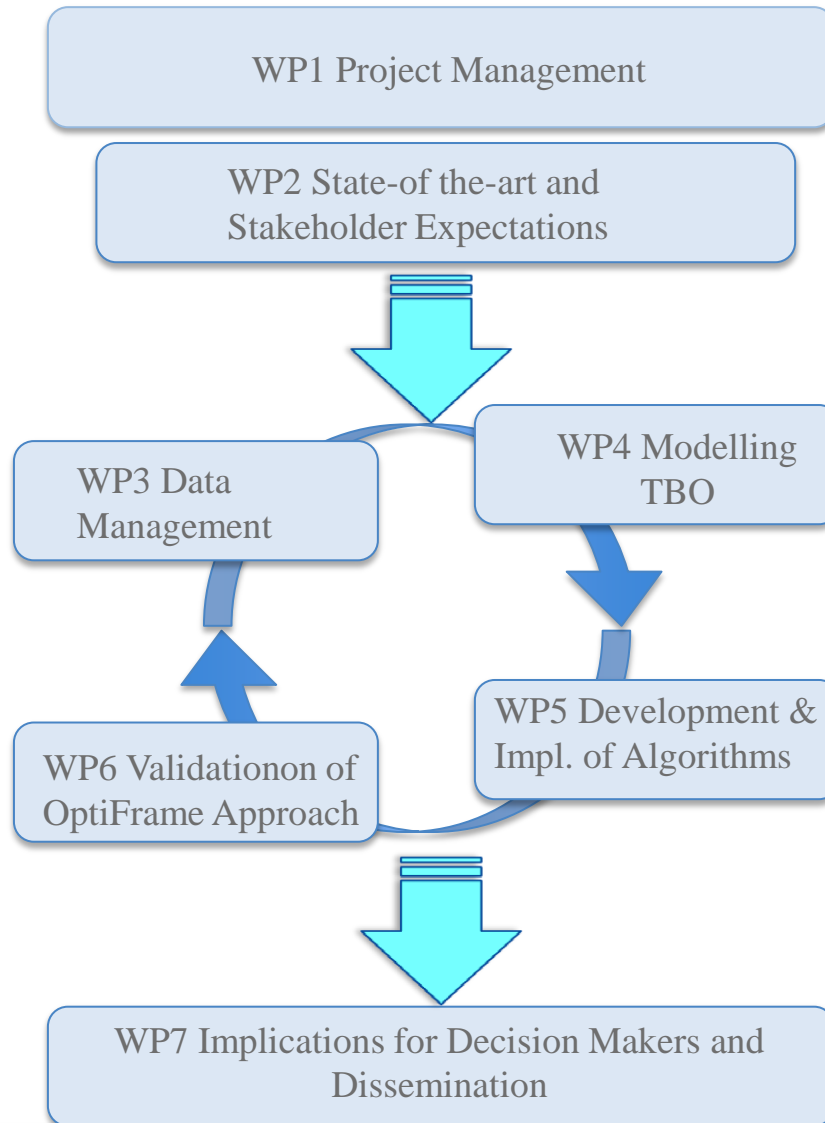
WP8 Ethics requirements [ULANC]

# Management structure

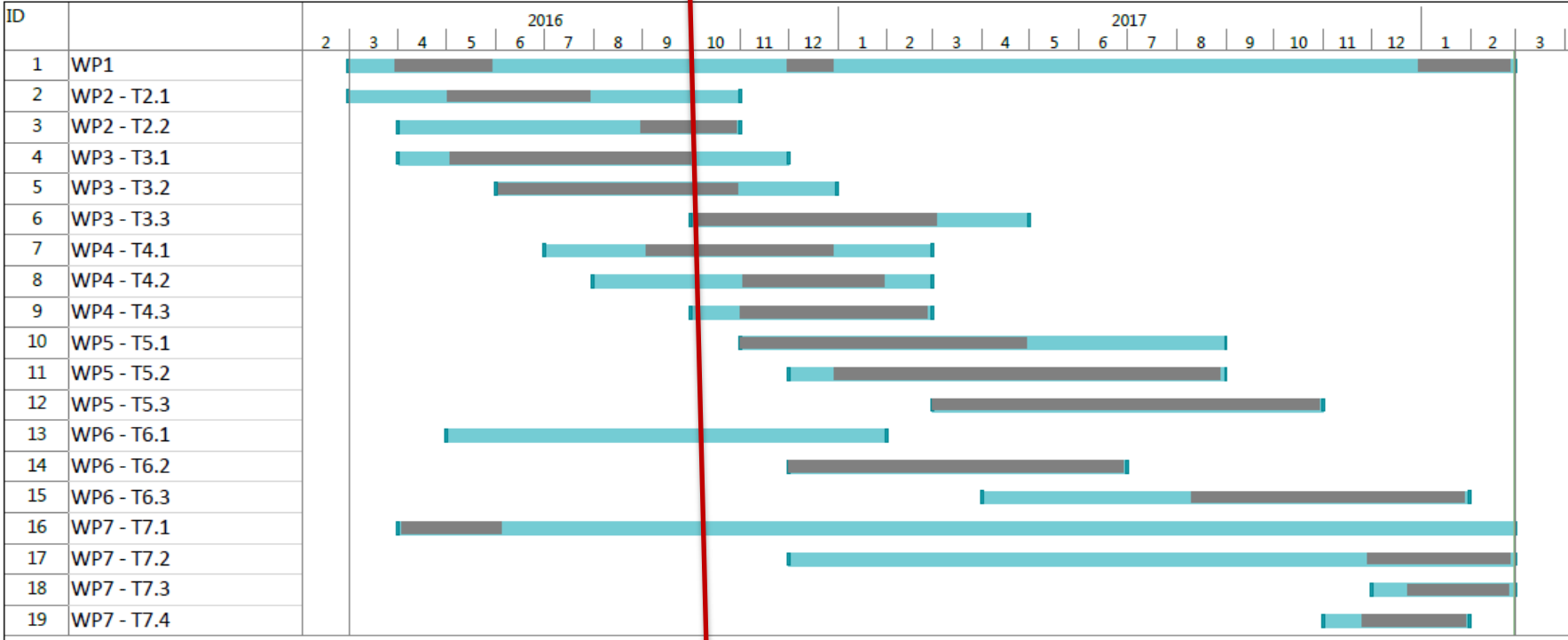




# Interrelation of project activities



# Project schedule



## Workshop related tasks

WP 4: Modelling of TBO

Task 4.1: Optimization modelling of ATM system.

**Task 4.2: Modelling of stakeholder preferences and priorities.**

Task 4.3: Preliminary model assessment and modelling refinements.

WP6: Validation of the OptiFrame approach in normal and disturbance cases

**Task 6.1: Identification of disturbances and operational scenarios of TBO.**

Task 6.2: Qualitative assessment of OptiFrame models in normal and disturbance cases.

Task 6.3: Assessment of the OptiFrame computational framework in normal and disturbance cases

# Expected project impact

Project impact will be assessed in relation to ICAO's KPIs

- Capacity
- Access & equity
- Cost effectiveness
- Efficiency (environment)
- Flexibility
- Predictability

# Expected impact on SESAR target concepts

Moving from airspace sectors to 4D Trajectory Management  
Traffic Synchronisation  
Network Collaborative Management and Dynamic Capacity Balancing  
Airport Integration and Throughput



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# Thank you very much for your attention!



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