



www.adapt-h2020.eu

Context: we present a data visualization tool for strategic planning as a result of the ADAPT project (Advanced prediction models for flexible trajectory-based operations). ADAPT aims at supporting strategic and pre-tactical levels of network management enabling better strategic planning. The tool is fed by the results of the prediction models for trajectory-based operations developed during the project. The models' goal is to find a strategic solution

with the property of minimizing demand vs capacity problems in the whole European sky. Results were computed for a specific target day in the European network (1st of September 2017). The tool provides several visualization proposal potentially useful for ANSPs, Network Operation Centers, Airlines and Airports. It's the starting point for a collaborative decision making system involving all the actors in the strategic planning process.

#DATA-DRIVEN #FLEXIBILITY #STRATEGIC PLANNING #PREDICTION MODELS

A data visualization tool to support strategic flight planning



visualization.adapt-h2020.eu

CLUSTERING

Reference trajectories are identified through a clustering algorithm for each origin-destination in the network.

TRAJECTORY ASSIGNMENT

A first model assigns trajectories to each flight respecting all the declared sectors' capacities.

TIME WINDOW ASSIGNMENT

A measure of flexibility called Time Window is associated to each sector and related crossing flights.

CRITICAL SECTORS IDENTIFICATION

Sectors associated with narrow time windows are considered critical and source of constraints for their crossing flights.

GEOGRAPHIC VISUALIZATION AND PERFORMANCE INDICATORS SECTIONS



ADAPT Data visualization tool / main sectors view



ADAPT Data visualization tool / performance indicators view



Sectors criticality information

Critical sectors are identified in the map (red sectors). Detailed information about criticality index, capacity and constrained flights is provided.



ACC criticality information

Information can be aggregated to the level of ACC and FIR offering a higher level view of the situation in the airspace.



Focus on the Day

Analyze the overall situation in a specific day. Look at the criticality index distribution and the level of critical sectors along the day.

Hourly Geographic Trends

Analyze peak hours and location of the critical sectors (low flexibility) with the hourly maps. Identify most critical times of the day and drill down to access specific details.



00 - 05h 06 - 11h 11h - 17h 17h - 23h

CONTACTS

Coordinator
Prof. Lorenzo Castelli
lorenzo.castelli@dia.unipi.it

Dissemination
Giuseppe Frau
giuseppe.frau@blue.it



This project has received funding from the European Union's Horizon 2020 research and innovation programme.



2 – 6 December 2019
Athens, Greece



founding members

