Content: 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 proposals 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.

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

A data visualization tool to support strategic flight planning

**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 off-target 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 further crossing flights.

GEOGRAPHIC VISUALIZATION AND PERFORMANCE INDICATORS SECTIONS

Seectors criticality information
Critical sectors are identified through the map (colored sectors). Detailed information about criticality index, time window, and current capacity can be drilled down to access specific details.

ACC criticality information
Information can be aggregated on the basis of ACCs and MRs offering a higher level view of the situation in the airspace.

Focus on the Day
Analyse the overall situation in a distribution and the trend of critical sectors along the day.

Hourly Geographic Trends
An hourly map showing the location of the critical sectors (see flexibility). Each hour map has a legend and statistics for the critical sectors down to access specific details.

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