COCTA
Coordinated Capacity Ordering and Trajectory Pricing for Better-performing ATM

Compair Workshop
Madrid, March 7, 2017
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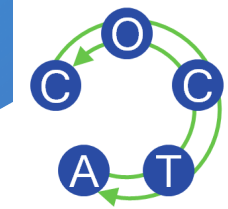
Topic: Economics and Legal Change in ATM

Duration: April 2016 – April 2018



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Founding Members

EUROPEAN UNION EUROCONTROL

Consortium

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COCTA overview

Current problems

1. **ANSPs** have to plan their capacity provision several weeks in advance, **Aircraft Operators (AO)** prefer flexibility and therefore short-term decisions.
   This **'divorced' planning horizon** either leads to overcapacity or capacity shortages, i.e. in both cases extra cost to users.
2. ANSPs' decentralized and average cost based pricing might lead to **inefficient route choice** by AOs (from overall perspective).

Solutions

Strengthen the role of the **Network Manager** in order to

- provide **incentives** to AOs to reveal their demand earlier, accept route changes, or purchase ATM services in advance
- order **capacity** from ANSPs based on AOs' demand
- impose overall **trajectory pricing** instead of ANSPs' decentralized distance pricing

COCTA framework

We take into account the perspectives of all **stakeholders** in the ATM value chain (multi-user, multi-criteria decision making):

- AO (and their customers)
- ANSPs (and their staff)
- Network Manager - NM (and its staff)
- Regulator(s)

We acknowledge **different business models** for AOs and willingness to pay for the differentiated service levels, explore relevant data in search for route-choice general rules, e.g. per market segment, and implement them in the modelling process.

We are aware that **information** is decentralized. Therefore, suitable mechanisms have to be installed, providing incentives to reveal information to the NM.

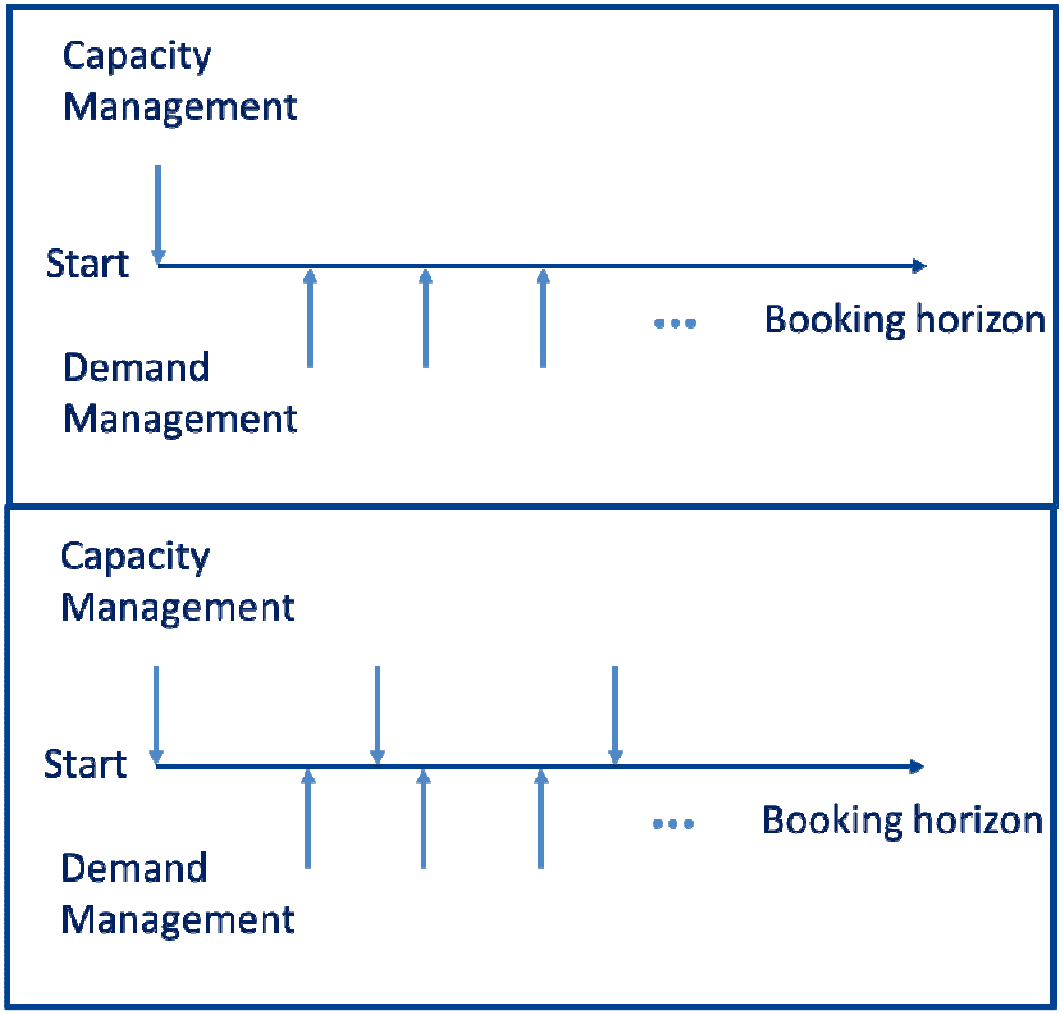
Example I:
Choice-based trajectory price optimization with capacity ordering

Idea:

- Subsequent decisions on capacity and pricing

  replaced by

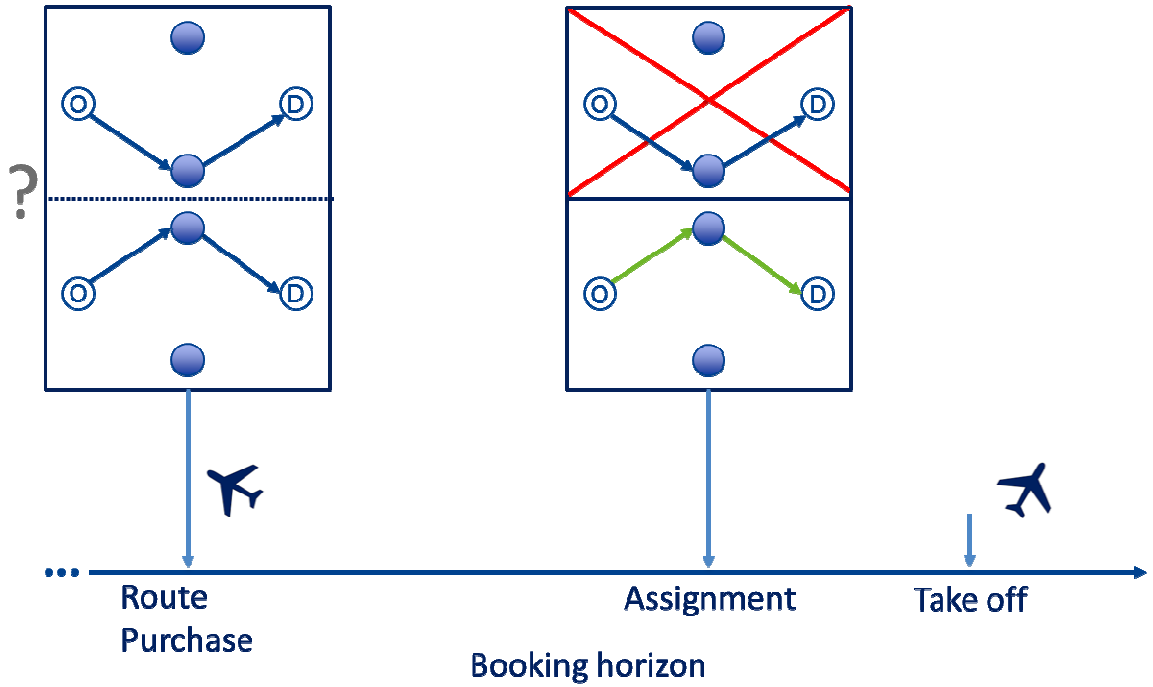
- Joint decision on capacity and pricing



Example II:
Optimization with flexible product - trajectories

Idea:

- Innovative approach to deal with capacity shortages: the NM offers trajectory bundles (based on AO preferences) at **discounted rates** whilst retaining the right to assign the flight to one of them shortly prior to departure.



COCTA results so far and next steps

Results:

- Simplified model to show that flexible opening of sectors reduces overall costs
  (Paper presented at SIDs 2016)
- Design of a process for coordinated capacity ordering and trajectory pricing
  (currently discussed with Advisory Board and other stakeholders)

Next steps:

- Analysis of ATC data in order to model COCTA process with (sample) real world data

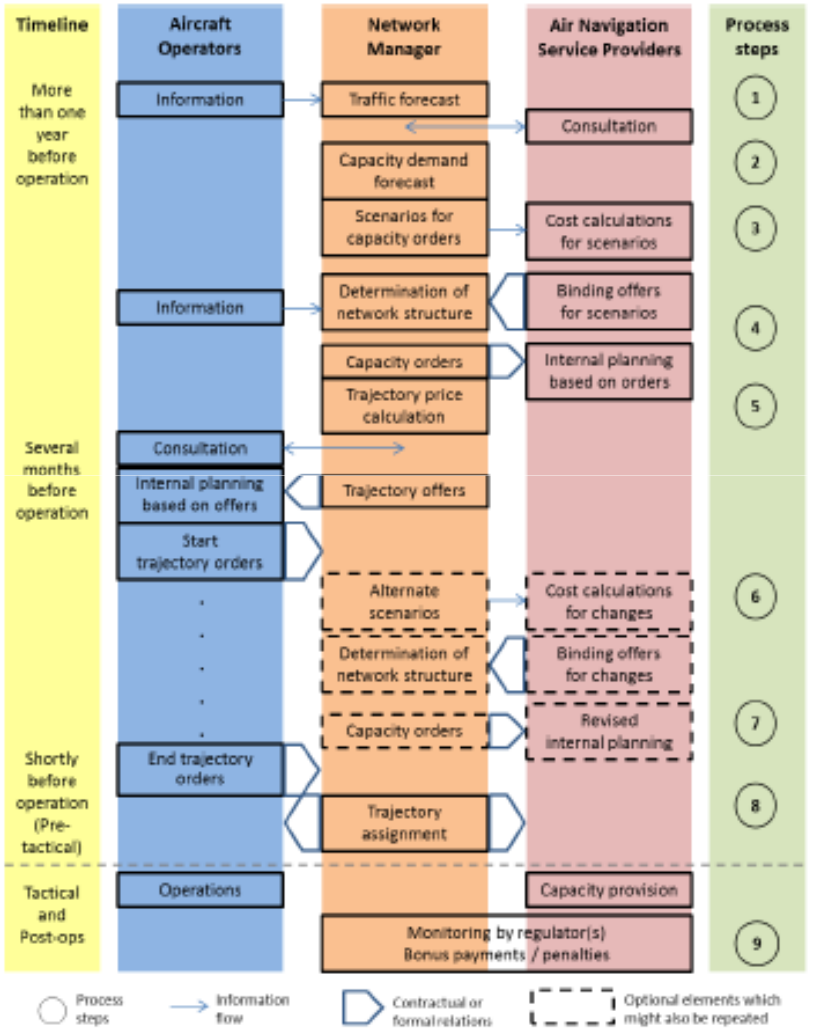


Figure 1. COCTA Process overview

Invitation to COCTA Stakeholder Workshop

- **September, 27, 2017 (Wednesday)**

  House of Logistics and Mobility (HOLM)

  Frankfurt airport, Germany

- More information on project and news: www.cocta-project.eu

COCTA | Presentation prepared for Compair Workshop, 7 March 2017

Thank you very much for your attention!

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