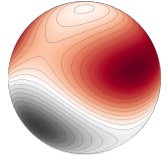




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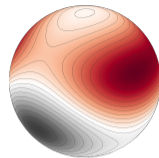


Modeling and Optimization: Theory and Applications (MOPTA) Competition

2025

Who are we?

- Scientific Computing and Optimization (SCOOP)
- website: <https://scoop.iwr.uni-heidelberg.de>
- contact: scoop-teaching@uni-heidelberg.de



What is AIMMS-MOPTA Competition?

- International optimization modeling competition
- Open to graduate and undergraduate students
- Compete in teams of three for prizes up to \$1200 (team leader must be a graduate student)
- Each team must declare a team advisor
- Final round: Ponta Delgada, Azores, Portugal from June 17-20
- Competition Deadline: March 15, 2025

<https://coral.ise.lehigh.edu/mopta2025/competition/>

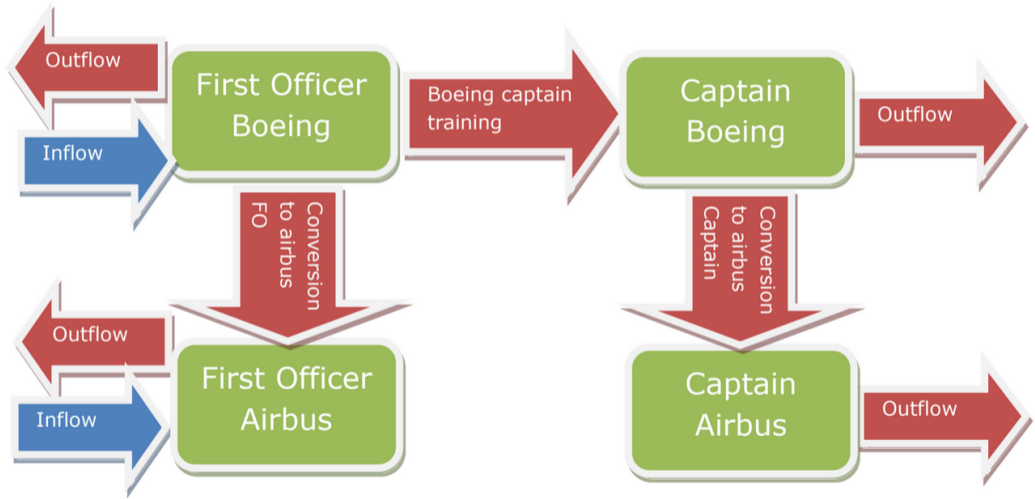


AIMMS-MOPTA Competition 2025

Transavia Aircrew Scheduling

- Transforming aircraft fleet from Boeing to Airbus
- Cockpit crew training puzzle:
 - Cockpit crew are certified to fly Boeing aircraft
 - Gradual change from Boeing to Airbus
 - Ensure seamless training schedule
 - Once trained on Airbus, the crew can not fly Boeing (for safety reasons)
 - Manage fleet without disruption

Transavia Aircrew Scheduling



Outcomes:

- Model, which provides a feasible training plan
- Minimal cost for the company
- Interactive planning dashboard

Extension:

- Planning happens a year in advance
- Disruptions can happen
- Disturbance simulator
- Measure / Visualize robustness of a plan

Evaluation:

- Solution techniques
- Results and insights gained
- Final recommendation
- Ability to consider the needs of a planner

Deliverables:

- Optimization model and corresponding solution approach
- User interface
- Report

Software:

- Any software of choice
- Higher prize money when AIMMS is used
- Free academic licenses
- E-learning material
- Starter project available
(reading in data, creating sets and parameters, start modeling process)
- AIMMS will host two open Q&A sessions



- Find a team of three people
- Find a team advisor
- contact: scoop-teaching@uni-heidelberg.de
- Registration
- Solver Application Download
- Deadline: March 15, 2025
- Submit all files in an email (end of stage 1)

Organizational

- Three teams become finalists and travel to MOPTA 2025 in Portugal (free registration for up to two members)
- Stage 2: advice from panel and chance to improve the solution
- Judges will ask questions
- Decision is made

Place	Used AIMMS Software	Did not use AIMMS Software
1st	\$1200	\$600
2nd	\$600	\$300
3rd	\$300	\$150

Questions?