

Rostering Optimization (WFS, Colgen)

Course Description

Audience

This course addresses experienced developers with a deep understanding of Jeppesen Crew Rostering (for at least 6 months) who wants to fully understand and control the optimizer.

Prerequisites

Rostering I
Rave II

Duration

2.5 days

Course goals

The course gives you a deep understanding of Crew Rostering Optimizer with a focus on the Column Generation optimization framework. After completing the course you will be able to:

- model your planning problem correctly
- understand the solution methods
- monitor and tune the performance of the Crew Rostering Optimizer

Course topics

- Modelling a rostering problem
 - cost function
 - cost of roster
 - rules
 - vertical constraints
 - crew complement
 - assign value
 - crew position
 - advanced modelling features
 - map variables
- Generalized optimization framework
 - generator

- solver
- Rave
- Column Generation optimization framework
 - Column Generation method
 - trip networks
 - resource constraints
 - cost modelling
- Shift Improve optimization framework
 - Roster Initial method
 - Shift Improve method
 - Python scripts
- Common problems and best practices
 - monitoring performance
 - tuning step-by-step
 - trouble shooting

All exercises are done using a generic flight data and rule set (Carmen Airlines).