

Pairing Optimization

Course description

Audience

This course addresses expert users and developers with Jeppesen Crew Pairing experience

Prerequisites

Pairing I and six months of experience using Jeppesen Crew Pairing.

Duration

2 days

Course goals

This course gives you an understanding of:

- Pairing optimizer, structure and process
- Column Generation
- Deadhead handling
- How to analyze and change the behavior of the optimizer
- Optimizer support for Crew Pairing concepts

Course topics

- The crew pairing problem
- The process in the pairing optimizer
 - Connection table
 - Pre-processors
 - Matcher
 - Generation
 - IP-solver
 - Post-process
 - Solution analyzer
 - Feedback – optimizer report and Scenario Analyser.
- Column Generation
 - Model definition
 - Duty network
 - Generating good trips
 - Stop criteria
 - Parameters
 - Global constraints

- Illegal sub-chains.
- Misestimates.
- Exhaustive mode
- Deadhead handling in the optimizer
 - Sources
 - OAG plan legs
 - Ground transports
 - Local plan legs
 - Flow
 - Parameters
- Crew Pairing concepts in the optimizer
 - Retiming
 - Variable crewing
 - General
 - One-shot variable crewing
 - Crew augmentation
 - Fly below/above rank
 - Crew imitation
 - Dynamic aircraft rotations
- Analyzing and tuning results
- Benchmark
 - In the end of the course the attendants compete with each other in an artificial pairing benchmark – topics covered in the course are practiced.

As in other Crew Academy courses there is a mix of presentations and exercises. In all demonstrations and exercises a Crew Pairing system with a generic customization layer (OTS) and flight data from OAG is used.