

NetLine/Market

NetLine/Plan

NetLine/Sched

NetLine/Ops

NetLine/Crew

NetLine/Crew *Pairing xOPT*

Flexible pairing solutions that save time and money

Are you looking for fast and robust pairing solutions that are cost-efficient as well? Our advanced pairing optimizer will help to boost your pairing generation performance significantly.

As personnel costs are one of the biggest cost drivers within an airline, the efficient construction of pairings and duty periods is an important factor to consider. By using state-of-the-art optimization technology (column generation technique) NetLine/Crew *Pairing xOPT* supports you in producing fast and legal solutions.

NetLine/Crew *Pairing xOPT* will increase the performance of your pairing department significantly: It will help you to save crew-related costs (e.g. less deadhead flights, hotel accommodations, per diem or duty days) by defining the solution targets according to your individual requirements.

You will be able to generate results in no time and to react with fast and flexible pairing solutions to changed operational or market demands (e.g. booking situation, capacity extension or reduction). The NetLine/Crew *Pairing xOPT* will also support you in evaluating and analyzing several possible pairing scenarios for simulation purposes, hereby choosing the best solution for your airline.

These solutions cover your flight schedule automatically and provide increased robustness for crew operations (e.g. through reducing aircraft changes, using intelligent buffers). The optimization targets (e.g. balancing of crew homebases, minimizing costs for overall duty time, layover and crew transportation) can be altered flexibly. Furthermore, NetLine/Crew *Pairing xOPT* makes sure that all pairings comply with country, union and the airline's quality rules.

Benefits

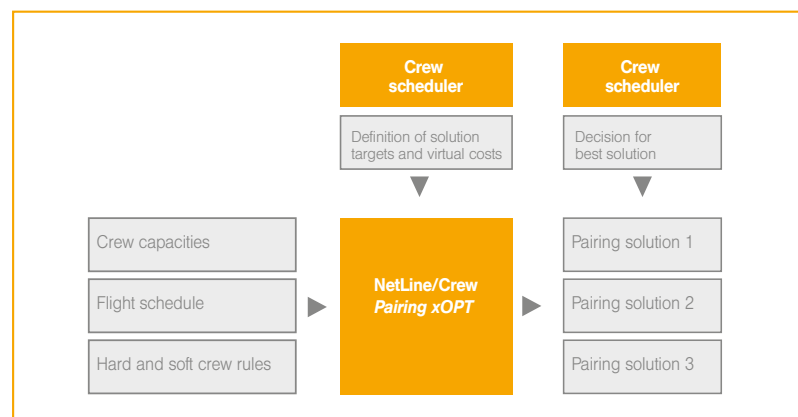
- > Saves crew costs through high efficient pairing solutions
- > Increases the robustness of pairings through intelligent buffers
- > Increases scheduler performance through automation support
- > Allows fast adjustment to market demands by flexible rule definitions

> NetLine

NetLine is one of the world's leading software solutions for the airline industry. The integrated, modular product line provides optimal support for the entire process of planning and controlling airline resources.

NetLine products:

- NetLine/Market
The market analysis solution
- NetLine/Plan
The network planning solution
- NetLine/Sched
The schedule management solution
- NetLine/Ops
The operations control solution
- **NetLine/Crew**
The crew management solution



Pairing construction process with Netline/Crew Pairing xOPT



NetLine/Market	NetLine/Plan	NetLine/Sched	NetLine/Ops	NetLine/Crew
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Features and functions

Flexible configuration

By choosing a certain property set you determine the optimization routine and therefore the result. NetLine/Crew *Pairing xOPT* also allows you to quickly adapt to changes in business requirements by the flexible definition of rules (e.g. country/union rules, definition of pairing numbers per base with regard to crew capacities), costs (e.g. duty time, hotel, per diem, deadhead, ground transport) and settings. Hereby these rules can be defined either as hard rules with no violation accepted or as soft rules which may be violated.

Costs and rules are programmed in a special rule language (ILOG), which means that your business requirements can be reflected flexibly in the optimization model. The rules apply to properties in the property set, making them easy to adjust.

Pre-constructed pairings

NetLine/Crew *Pairing xOPT* processes pairings that are constructed in advance for its optimization runs (e.g. special PR flights).

Pairing imitation

NetLine/Crew *Pairing xOPT* allows you to imitate the pairing solution of a planning group even if the rules differ. Hereby it is also possible to merge the matching pairings of the different planning groups (e.g. cockpit and cabin).

Summary report

Every optimization solution creates a scenario including a comprehensive summary report, which allows you to compare different pairing solutions before publication. In addition these reports can serve the internal reporting and help you to analyse possible scenarios for rostering and/or network management.

NetLine/Crew integration

No interfaces between optimizer and core application are required. The full integration with Lufthansa Systems' crew management solution NetLine/Crew ensures that data and rules are 100% consistent and have to be updated just once.

Quick warm-start option

A warm-start option provides you with the possibility to obtain a quick solution using data saved by a previous optimization run.

Interim solution

During a longer run you can generate interim solutions to have a glance at the later solution or to detect a possible too restrictive constraint configuration.

System requirements

- UNIX server (LINUX, fast multi-core CPU recommended)
- Oracle database

<i>Pairing</i>
<i>Assignment</i>
<i>Tracking</i>
<i>ManpowerPlanning</i>
<i>Pairing xOPT</i>
<i>Pairing xOPT</i>
<i>Fairness xOPT</i>
<i>Preferences xOPT</i>
<i>Solver xOPT</i>