NetLine Schedule Management and Optimization

Deliver the best schedule and stay one step ahead

An airline's flight schedule is the core product offering to its customers. It is the key to operating profitably and efficiently, balancing the best commercial timings for flights with achieving the optimum aircraft utilization. An airline needs to be agile when reacting to changing market conditions by revising the schedule while maintaining operational integrity. NetLine/Sched supports all aspects of schedule development and schedule management. It fits airlines of all sizes and business models and allows multi-airline scheduling.

Optimize medium and short-term scheduling

With NetLine/Sched, an airline can professionally develop and manage its schedule. It offers a wide range of schedule visualization and modification options, configurable schedule feasibility checking, flexible schedule scenarios, and sophisticated multi-user handling. An airline can measure the profitability of each schedule and schedule scenarios and identify areas of improvement with flexible reporting options. Powerful optimizers help increase aircraft productivity, schedule robustness and make profitable capacity adjustments when reacting to ad hoc changes. The integration with other NetLine applications makes NetLine/Sched a comprehensive scheduling tool.

Benefit from stable operations through robust scheduling

- Maximize aircraft utilization while securing operational feasibility using NetLine/Sched Rotation Optimizer
- Foster operational stability by directly considering delay predictions with NetLine/Sched Resilient Scheduling
- Minimize crew aircraft transfers by adjusting aircraft rotations according to crew pairing information

Boost profitability: Increase revenues by up to 5 %

- Evaluate schedule profitability with NetLine/Sched Tactical Profitability Evaluation Module (TPEM) based on passenger revenues, operating and fixed cost
- Design the most profitable and operationally feasible schedule with NetLine/HubDesigner
- Increase schedule profitability through optimal capacity and fleet assignment by NetLine/FleetAssigner

Increase efficiency for scheduling tasks through integration and automation

- Benefit from the tight integration with the Slot Management solution NetLine/Slot as well with the other commercial and operational NetLine solutions.
- Avoid errors and costly corrections on the day of ops with automated schedule consistency and operational feasibility checks based on configurable rules
- Automate schedule information distribution to downline systems – e. g. enabling real-time CRS updates

Features and functions

Efficient Flight Scheduling with NetLine/Sched Core

Well-structured schedule information
The Gantt chart provides user-friendly aircraft flow information. The system offers many visualizations as well as granular search and filter functions. Powerful editors allow single and mass flight updates.

Hands-on schedule feasibility checks
A multitude of configurable and automatic feasibility checks assists schedulers in maintaining operational integrity, avoiding costly corrections on the day of operations.

Versatile schedule scenario handling
With dynamic market changes, it helps to create multiple schedule scenarios. With NetLine/Sched Scenario Management, designing an infinite number of Base Schedules is a breeze. Within the Base Schedules, different scenarios can be created.

Comprehensive schedule comparisons
All scenarios and base schedules can be compared amongst each other. This applies to different variants and time ranges.

Standardized flight rotation building
A rotation builder, based on FIFO and LIFO algorithms quickly builds or rebuilds aircraft rotations automatically while observing a standard set of operational constraints, such as aircraft turnaround times. An extended, more powerful version of the NetLine/Sched Rotation Optimizer is available.

Insightful schedule information reports
A comprehensive set of pre-defined reports is available to accommodate the internal and external distribution of schedule information. NetLine/Sched's report output can be loaded directly into office applications such as Microsoft Excel as well as your company's intranet.

Fast access and secure use in the cloud

All NetLine solutions are offered as an end-to-end service in the Lufthansa Systems Global Aviation Cloud for simple, cost-effective and scalable use. The security measures are certified in accordance with industry standards and are regularly reviewed in audits. Lufthansa Systems is the customer's single point of contact for the entire technology and service stack.

Fast and efficient implementation times

With short implementation times around three months (depending on the scope) you fast will benefit from NetLine/Sched and its sophisticated features. Our implementation experts have decades of experience in implementing NetLine/Sched to customers with different business models, sizes operations and IT environments.

Excellent service and support

Lufthansa Systems is the right partner on the long-term for your flight scheduling: We provide a dedicated account and service team, experienced product experts and a 24/7 help desk support through the whole contract period, when issues arise. All releases are free of charge.

Renewal strategy and cost-free releases

NetLine/Sched is constantly being further developed, including the web-based version, which comes with a completely new architecture and UI. For existing customers, all new developments that affect NetLine/Sched core will be made available free of charge over time.

NetLine/Sched Core at a glance

Visualizing & searching schedule information & Different Views

Modifying schedule information

Checking consistencies

Creating scenarios

LIFO/FIFO Rotation Builder

Multi-user scheduling & Schedule authorization

Schedule distribution & interfaces

Generation of standard reports

Add-ons and optimizers

Creating additional value in Scheduling

NetLine/Sched generates even more value through fully integrated, optional **add-on modules. A sophisticated optimization suite**, supporting the management of dynamic markets and elastic demands, tops off the options to create additional values in schedule management.

Optimal aircraft utilization

NetLine/Sched Rotation Optimizer
Applies artificial intelligence to optimize aircraft rotations based on a more granular rule set. Rules and penalties can be defined on a customer-specific basis, providing more flexibility.
Builds and rebuilds aircraft rotations automatically while observing operational constraints, such as aircraft turnaround times and maintenance events.
The result: Operationally feasible rotations with optimum productivity.

Schedule profitability maximization

NetLine/Sched Tactical Profitability Evaluation Module (TPEM)
Uses real-time information (booking figures and other revenue information) to improve profitability. Designed for mid-to-short term schedule evaluations.

Extended reporting options

NetLine/Sched Flexible Reporting
Supports the fast and flexible generation of individually defined reports to answer specific management questions. The data can be transferred to third-party applications such as Business Intelligence solutions.

Strong operational schedule robustness

NetLine/Sched Resilient Scheduling
Applies Data Science methods to simulate the delay propagation based on historic operational data.
NetLine/Sched visualizes leg-associated delay risks in a user-friendly color scheme and supports schedule scenario evaluation focusing on operational robustness.

Managing dynamic markets and elastic demands

NetLine/FleetAssigner
NetLine/Fleet Assigner improves strategic and tactical capacity allocation like fleet and compartment studies as well as optimal fleet utilization closer to the day of operations.
The optimizer works with segment or O&D-based Revenue Management predictions or actual booking information. Many NetLine customers realize large profit gains by using NetLine/FleetAssigner to optimize the schedule before crew handover. The optimizer solves use cases such as fleet size reduction or scheduling of additional aircraft.
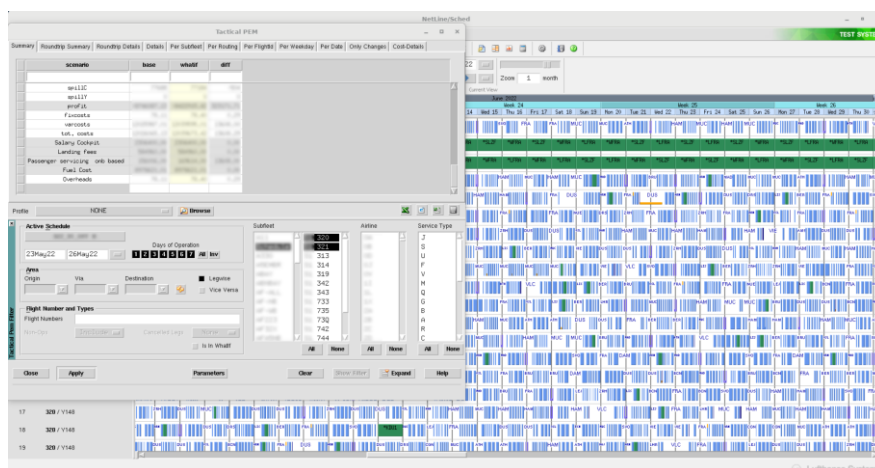
NetLine/FleetAssigner provides a huge toolbox to flexibly define operational and commercial constraints, such as curfews, maintenance, aircraft and route restrictions.

NetLine/HubDesigner
Designing networks is best practice to manage dynamic markets. NetLine/HubDesigner is a powerful clean-sheet optimizer, which improves point-to-point and connection traffic.
NetLine/HubDesigner evaluates all combinations of routes, aircrafts, timings and frequencies, when building a network. Furthermore, commercial and operational constraints (such as slots, curfews, aircraft constraints or route restrictions) are considered.
The solution allows to explore and solve a multitude of possible market conditions. Our most advanced optimizer supports strategic decision-making by enabling the network planners to evaluate targeted scenarios (such as. variable market sizes, fleet changes or impact of competitor schedules).

Easy evaluation of the schedule and scenario profitability with NetLine/Sched Tactical Profitability Evaluation Module (TPEM).

Integration

NetLine/Sched and Slot Management

NetLine/Sched can collaborate with all common IATA-compliant Slot Management systems. However, around 90% of our airline customers prefer to benefit from tight integration between NetLine/Sched and the Slot Management solution NetLine/Slot: Schedule or operational changes can be easily applied.

NetLine/Slot core system covers the complete slot handling and coordinator communication processes with extensive automation support. The slot status information is highlighted in the NetLine/Sched Gantt Chart, other schedule editor formats and reporting tools.

NetLine/Slot Monitor helps avoid losing valuable historic slot rights as it tracks all planned and actual cancellations in real-time and alerts in case of critical ones. The status of the grandfather rights can be retrieved in NetLine/Sched any time when executing cancellations.

NetLine/Slot Ops Mode allows the Operations Controller to automatically generate and send SSIM chapter 6 slot messages on the day of ops via NetLine/Ops ++ or any third-party operations control system.

NetLine/Sched and Network Planning

NetLine/Sched and the Network Planning solution NetLine/Plan are based on the same cost models. Network Planner can access schedule scenarios from NetLine/Sched in NetLine/Plan to evaluate them.

A NetLine/Plan standard week can be imported to NetLine/Sched via native interface to be rolled out for the whole season.

NetLine/Sched and Codeshare Management

NetLine/Sched customers can easily provide schedule data to SchedConnect. Common reference data in the two systems allows for a smooth process flow, enabling SchedConnect to enrich the schedule with valuable codeshare information.

The result: A high-quality and error-free schedule is established by exchanging common reference data.

NetLine/Sched and Operations Control

NetLine/Sched is capable of exchanging data with all common Operations Control systems via IATA interfaces.

Above that, NetLine/Sched is tightly integrated with NetLine/Ops ++, the Operations Control solution of Lufthansa Systems. Both systems share common industry and company data. Moreover, official schedules in NetLine/Sched and all changes applied to them are automatically propagated to NetLine/Ops ++.

To consider maintenance information during scheduling, maintenance events are transferred from NetLine/Ops ++ to NetLine/Sched.

This applies as well for the visualization of delay risks in NetLine/Sched, which is based on historic operational data coming from NetLine/Ops ++ (or any third-party operations control system).

NetLine/Sched and Crew Management

NetLine/Sched scenarios can be imported into any crew management system as an SSIM file. Crew Pairings can be mapped back into NetLine/Sched.

Crew pairing data from the Crew Management solution NetLine/Crew is used by the NetLine/Sched Rotation Optimizer, allowing airlines to build rotations that can be covered by the most efficient and robust crew duties.

Integration with Revenue Management Systems

Have direct access to up-to-date booking and yield information for better profitability assessments. NetLine/Sched can interface with any airline revenue management system.

NetLine

→ **NetLine/Plan**
Network planning

→ **SchedConnect**
Codeshare management

→ **NetLine/Ops ++**
Operations control

→ **NetLine/HubControl**
Passenger connection & Turnaround management

→ **NetLine/Sched**
Schedule management

→ **NetLine/Crew**
Crew management

→ **NetLine/Load**
Weight & balance