Lufthansa Systems

NetLine/Sched

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. Powerful optimizers help increase aircraft productivity, schedule robustness and make profitable capacity adjustments when reacting to ad hoc changes. The integrated airport slot management functionality 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 schedule stability by directly considering delay predictions
- Minimize crew aircraft transfers by adjusting aircraft rotations according to crew pairing information

Boost profitability: Increase revenues by up to 5 %

- Take capacity adjustment decisions based on displayed passenger booking and forecast figures
- Evaluate schedule profitability and schedule scenario profitability impacts with NetLine/Sched Tactical Profitability Evaluation Model (TPEM)
- Identify profitable capacity adjustments with powerful optimization

Skyrocket efficiency: Automation support for core scheduling tasks

- Use manifold automation options for efficient airport slot management
- 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

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

Global Aviation Cloud
NetLine/Sched is offered as an end-to-end service in the 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.

NetLine/Sched Core at a glance

Visualizing and searching schedule information

Modifying schedule information

Checking consistencies

Creating scenarios

Schedule distribution & interfaces

Generating standard reports

Features and functions

Add-on modules and features

NetLine/Sched generates even more value through fully integrated, optional add-on modules.

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 Model (TPEM)
Uses real-time information (booking figures and other revenue information) to improve profitability. Designed for mid-to-short term schedule evaluations.

NetLine Fleet Assigner
Boosts schedule profitability by changing the aircraft type assigned to individual flight legs in compliance with user-defined restrictions.

The result: A re-fleeted, feasible and more profitable schedule on a global level.

NetLine/Sched Swapper
Optimizes schedules at short notice without affecting crew assignments and the entire schedule. It considers fleet configuration, passenger forecasts, revenues, and costs and suggests swaps for specific flights to increase profitability.

The result: A more profitable schedule for specific legs on a local level.

Efficient and real-time airport slot management

The NetLine/Sched Slot Manager and NetLine/Sched Slot Monitor modules are fully integrated into NetLine. Schedule or operational changes can be easily applied and processed.

NetLine/Sched Slot Manager
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/Sched Slot Manager Short Term Mode
Allows the Operations Controller to easily generate and send SSIM chapter 6 slot messages on the day of Ops.

NetLine/Sched Slot Monitor
Helps avoid losing valuable historic slots rights as it tracks all planned and actual cancellations in real-time and alerts in case of critical ones.

Strong schedule robustness

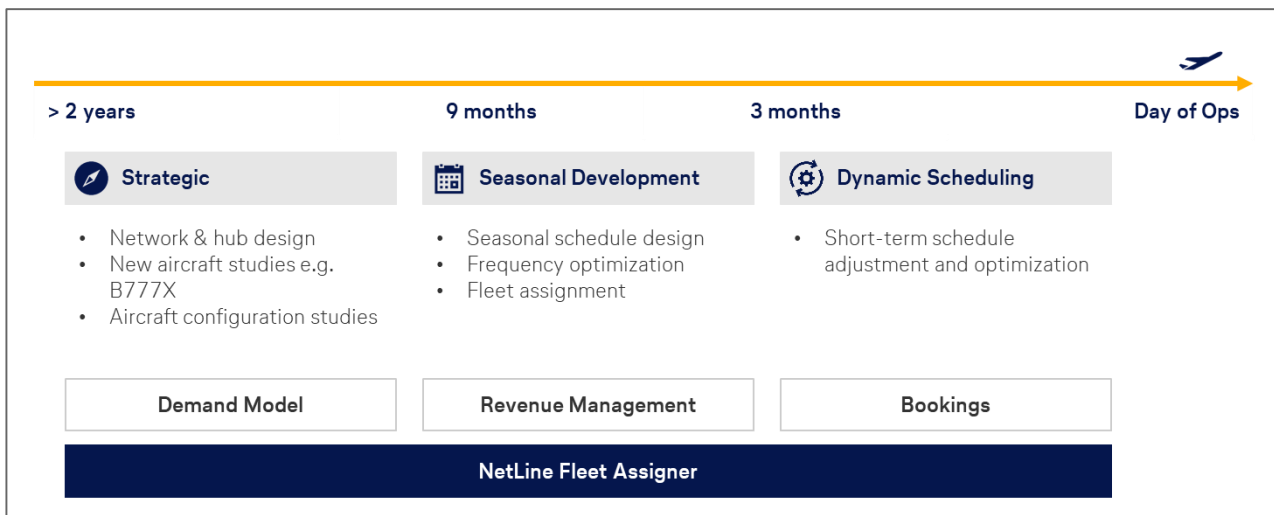**NetLine Resilient Scheduling**
Applies Data Science methods to simulate the delay propagation based on historic operational data.
NetLine/Sched visualizes leg-associated delay risks in a user-friendly color scheme and supports schedule scenario evaluation focusing on operational robustness.

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.

> 2 years	9 months	3 months	Day of Ops
Strategic	**Seasonal Development**	**Dynamic Scheduling**	
• Network & hub design • New aircraft studies e.g. B777X • Aircraft configuration studies	• Seasonal schedule design • Frequency optimization • Fleet assignment	• Short-term schedule adjustment and optimization	
Demand Model	Revenue Management	Bookings	
NetLine Fleet Assigner			

NetLine Fleet Assigner

Integration

NetLine/Sched and Operations Control Systems

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

Above that, NetLine/Sched is integrated with NetLine/Ops ++. 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.

The NetLine/Sched Slot Monitor is integrated with NetLine/Ops ++. The NetLine/Sched AirportSlotDashboard (APSD) provides airport slot status and allows airport-slot relevant user interaction with automated, straight-forward tasks.

NetLine/Sched and Crew Management Systems

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 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.

The result: An integrated maintenance and crew pairing optimization to guarantee feasible and optimal solutions.

NetLine/Sched and NetLine/Plan

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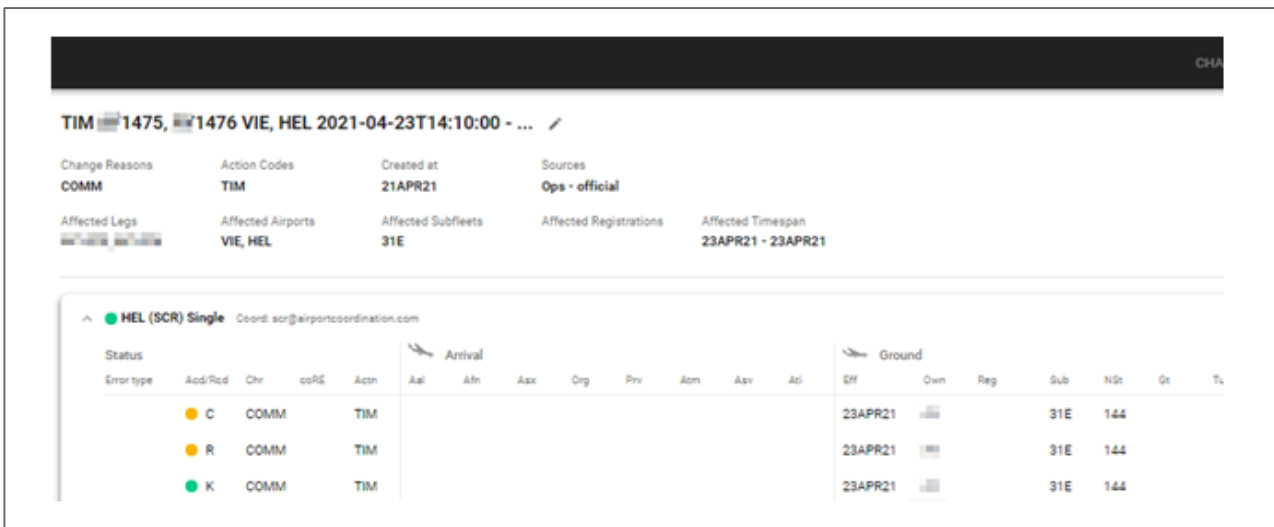
NetLine/Sched and SchedConnect

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.

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/Sched Airport Slot Management Dashboard (APSD)

NetLine

→ **NetLine/Plan** Network planning	→ **SchedConnect** Codeshare management	→ **NetLine/Ops ++** Operations control
→ **NetLine/Sched** Schedule management	→ **NetLine/Crew** Crew management	→ **NetLine/Load** Weight & balance