



Aviation Planning and Scheduling Solutions
Planning for success in a changing market



OPTIMIZE FOR SAFETY, PUNCTUALITY AND PROFITABILITY

Quintiq enables airports and airlines to optimize



COPING WITH INCREASING OPERATING COSTS

To overcome constantly increasing operating costs, airlines and airports must optimize operations and improve productivity. Efficient resource and personnel utilization in the form of pro-active planning and workforce optimization is crucial to the success of all aviation service providers. However, any planning solution must be powerful enough to integrate multiple resources across different planning horizons while being flexible enough to handle the constant scheduling changes that are part of the dynamic aviation environment.

QUINTIQ AVIATION PLANNING & OPTIMIZATION SOLUTIONS FOR AIRPORTS AND AIRLINES

Understanding the acute challenges facing the aviation industry, Quintiq has developed a decision support system tailored to the complexity of the aviation industry. The Quintiq Aviation Planning & Optimization Solutions employ the most sophisticated optimization engine available today to support your current processes and optimize operations.

The result: increased employee productivity, improved operational efficiency and significant cost savings.

KLM Catering Services Schiphol (KCS) prepares and delivers 45,000 meals a day for 12 airlines, 350 flights, and 50 different types of aircraft. The 1,300-person company is a subsidiary of KLM Airlines, and is the catering company for KLM, KLM Cityhopper, and KLM UK, as well as for Northwest Airlines, Japan Airlines, Iberia, Royal Jordanian, and Cyprus Airways. KCS also manages non-food supplies such as beverages, sales trolleys, and navigation bags to the private airport lounges in Schiphol Airport.

JACQUES BLAAUW, MANAGING DIRECTOR,
KLM CATERING SERVICES SCHIPHOL:

"This is one of the few IT projects, which is implemented on time, within budget and has exceeded expectations concerning the functional requirements. The punctuality of the distribution of the catering products to the aircraft has increased from 98% to 99.5%, which is an important improvement for us."

FUNCTIONAL SCOPE OF THE QUINTIQ AVIATION INDUSTRY SOLUTIONS

	Fleet	Crew	Gates	Check-in	Ground Staff
Long term (6 - 12 months)	Fleet planning (aircraft type)	Manpower planning			Manpower planning
Mid term (2 - 6 months)	Aircraft routing	Crew pairing & assignment	Gate planning	Check-in planning	Rostering
Short term (2 months - 1 day)	Fleet control	Crew control & tracking	Gate control	Check-in control	Detailed ground staff planning
Day of operations	Real-Time Planning	Real-Time Planning	Real-Time Planning	Real-Time Planning	Real-Time Planning

OPTIMIZE MULTIPLE RESOURCES ACROSS DIFFERENT PLANNING HORIZONS



For assigning arrivals and departures to stands, the planner gets decision support via scores and colors indicating suitability.

SUPPORT ASSIGNMENT OF GATES AND CHECK-IN DESKS

Inadequate infrastructure capacity is a perennial problem in the aviation industry. The hassle and delays experienced by airline consumers can be mitigated through skillful gate and check-in desk scheduling. The Quintiq Airport Planning & Optimization module is designed to support the assignment of gates and check-in desks in airports through all planning stages from long term capacity decision making, to specific gate assignments, to last minute revisions. The module takes into account all applicable rules and constraints, such as arrival patterns, airline rules, airline preferences, handler rules and handler preferences.

Key Features and Benefits

- **Improved customer satisfaction**
Fewer flight delays and last minute gate changes means improved customer service
- **Optimal resource utilization**
- **Increased flexibility**
Quick and easy reassignment of gates to respond to last minute changes and disturbances
- **Optimum usage of prime gates and stands.**



The planner is guided to assign crew to flights based on their rosters, skill levels and other constraints

REDUCE CREW LABOR COSTS AND INCREASE EMPLOYEE SATISFACTION

Optimum labor productivity is vital to profitability and business success. However, crew planning is a complex, dynamic process as any planning solution must be flexible enough to deal with frequent schedule changes, often at short notice. The Quintiq Airline Crew Planning & Optimization module enables you to optimize employee utilization. It supports comprehensive aircraft personnel workforce planning and optimization, including all aspects of scenario building, deployment planning, roster and shift planning, and process dispatching, while taking into consideration employee preferences, skill sets, and licensing and safety standards. The result: optimized employee scheduling, increased employee availability, improved employee satisfaction and reduced labor costs.

Key Features and Benefits

- **Reduced labor costs**
- **Higher employee satisfaction**
- **Increased flexibility**
Confidently respond to schedule changes and absences
- **Support for planners on all levels**
All regulatory requirements and employee preferences are displayed in the system
- **Company-wide transparency**
The consequences of planning modifications are immediately clear to all planners.



OPTIMIZE AIRCRAFT UTILIZATION

To be profitable, network carriers must optimize aircraft utilization and minimize aircraft ground times through skillful fleet planning. The Quintiq Aircraft Planning & Optimization module solves the complex puzzle of aircraft utilization by handling all aspects of fleet planning in multiple planning horizons. It supports the long term planning, assigning aircraft types to flight schedules and optimizes the subsequent assignment of specific aircraft to routes while considering the necessary rules and restrictions including aircraft maintenance calendars, minimal turn around times and airport restrictions. The planner can see the consequences of his decisions immediately. Constraint violations are visualized in the planning process, for example if the amount of outgoing aircraft per location of an aircraft type exceeds the amount of incoming aircraft. Fleet control is optimized by supporting the short term planning of the control phase to accommodate changes in capacity requirements, including schedule changes and planned maintenance. On the day of operation the planning can be revised to reflect flight delays or technical difficulties.

Key Features and Benefits

- **Higher profitability**
Shorter ground times, higher aircraft utilization and lower fuel and transportation costs reduce operational costs
- **Improved customer satisfaction**
Due to fewer flight cancellations and delays
- **Increased flexibility**
Respond confidently to last minute changes and disturbances
- **Company-wide transparency**
The consequences of planning modifications are immediately clear to all planners.



The system helps the planner allocate aircraft to flights in the most cost efficient way while respecting constraints such as maintenance schedules

INCREASE GROUND STAFF UTILIZATION AND PRODUCTIVITY

With labor costs constantly rising, the financial success of your company hinges on improving employee utilization and productivity. Efficient ground staff utilization in the form of pro-active planning and workforce optimization is crucial to the success of all aviation service providers. The complex process of personnel planning demands a software solution that can integrate multiple factors, including employee expertise and skills, employee preferences, work time directives and labor contracts. Furthermore, any planning solution must be flexible enough to deal with frequent schedule changes. Using the most advanced algorithms available today the Quintiq Ground Staff Planning & Optimization module optimizes ground staff personnel planning to provide you with increased employee utilization and productivity. By taking into consideration employee preferences, you also benefit from increased employee satisfaction. Ground staff may be involved in cargo handling, fueling, baggage, catering, de-icing, maintenance, towing/push back etc.

Key Features and Benefits

- **Efficient personnel utilization**
- **Increased employee satisfaction**
- **Support for the deployment planning process**
Presence to absence planning, shift and roster planning, task allocation
- **Support for planners on all levels**
All legal restrictions are displayed in the system
- **Company-wide transparency**
The consequences of planning modifications are immediate clear to all planners.



For transferring luggage to connecting flights, the planner gets decision support to build runs via colors indicating priority based on departure time.

Brussels Airport is the airport of the capital of Europe and serves over 100 airlines. As air traffic is still growing the airport needs to use its resources in an optimal way. The Quintiq solution enables Brussels Airport to remain flexible when planning its 162 check-in desks and 54 gates.

ARNAUD FEIST, CFO AND DIRECTOR ICT, BRUSSELS AIRPORT:
"The passenger airline industry is a dynamic and competitive environment where customers and cost count. The Quintiq software will help us address these challenges and enable us to provide the airlines with best in class service and support at customer check-in and arrivals. The airport is rated by its customers one of the best in Europe."

About Quintiq

Quintiq provides advanced planning, scheduling and supply chain management solutions. The fast-growing Dutch company, established in 1997, offers software for planning and optimizing complex business processes throughout the aviation industry. Deloitte has recognized Quintiq as being one of the fastest growing technology companies in Europe, and industry analyst Gartner has acknowledged Quintiq for its innovative products and market presence.

The company's headquarters is located in the Netherlands and it has subsidiaries in Germany, UK, Finland, Malaysia, China, Australia and the USA. **For more information: www.quintiq.com**