

VISIBILITY AND CONTROL OF EUROPE'S SKIES

The future of air navigation services was clear to skyguide. What it needed now was a partner to help it realize its vision through better workforce planning





Business:	Air navigation services
Date established:	2001
Headquarters:	Geneva, Switzerland
Operating revenue:	CHF450.7 million (2015)
Total employees:	1,500 (as of 2016)

Since the merger of the Swiss military and civil air navigation services into a single entity at the turn of the century, skyguide has been responsible for overseeing flights in the Swiss airspace. Its area of responsibility also includes adjacent airspace in France, Germany, Italy and Austria.

Headquartered in Geneva, skyguide handles approximately 1.2 million civilian and military flights a year through its 14 sites at the Geneva and Zurich international airports, regional airports and several military aerodromes. It is majority-owned by the Swiss Confederation.

**87.6 %**

Safety maturity index

96.8 %

Flights without delays

The challenge

The future was clear for skyguide. The air navigation service provider (ANSP) knew that there was no longer a place for manual workforce planning methods in today's world. Planning rules were becoming more complex, the growth in air traffic was expected to rise exponentially and there was increasing pressure from the European Commission on all states in the European Union to reduce cost and delays.

The future was smart automation. That was the only way skyguide could have absolute control over all operations at all times. It needed a major transformation of its existing planning approach. Its planning was spread out over a large number of disconnected systems, with each system handling only a specific aspect of staff planning. For example, the system that handled employee shift assignments did just that and nothing else.

Almost a dozen disconnected systems were used to run skyguide's daily operations, and none of these solutions were tailored for the specific needs of the ANSP.

The setup encouraged repetition. Data had to be manually replicated from one system to another. Employee preferences were entered in one system, which was then consulted by the planners who would to take these requests into account when manually creating staff rosters.

These disconnected systems had no means to quickly extract planning statistics, no automation in place to check the plethora of rules that apply to staff planning and no modules for automatically performing manual tasks such as roster generation.

"How many shifts will be needed on a given day, given the forecast traffic and its complexity?"

"How many trainees do we need to hire over the next 5 years, given the foreseen traffic growth over that period?"

"What impact would a change in labor law have over staff rosters?"

"What's the best solution when an employee falls ill on the day of operations?"

Working with multiple disconnected systems meant that there was no easy or fast way for skyguide to accurately determine the impact of certain factors on staff planning.

“We need DELMIA Quintiq to deliver the productivity increases that we need. Without it, we’ll never be able to deliver the value that our customers deserve.”

– Alex Bristol, COO, skyguide, 2017

Change was necessary. The ANSP needed a system that could centralize all the information needed for staff planning, with core functionalities automated and optimized. The system must be easily configurable to deal with changes in rules and ways of working, and handle unforeseen disruption on the day of operations by determining the best staff reassignments.

The requirements were clear: The solution must be able to make staff planning as efficient and streamlined as possible, automatically generating the best possible rosters that covered all traffic demand while respecting all planning rules. Planners should be able to quickly create what-if scenarios and assess the impact of various possibilities on staff planning and costs. The solution must also be able to demonstrate – at the touch of a button – skyguide’s compliance with all planning rules and regulations.

A standard out-of-the box system was out of the question. This planning puzzle needed a solution provider with great knowledge and expertise in optimizing ATCO rostering.



The choice

“There was no competition when it came to DELMIA Quintiq getting the job. To date, DELMIA Quintiq is the only solution provider with experience in developing a 100%-fit staff planning solution for air navigation service providers.”

– Lorna Herda, Head of Capacity Management and Rostering,
skyguide

What skyguide needed was a solution provider with prior ANSP experience, as it would save both parties a lot of time and money. The process of explaining the requirements was lengthy, and a lack of understanding of the intricacies of ANSP operations could jeopardize the entire project in terms of delivery and cost.

The DELMIA Quintiq solution's flexibility and configurability impressed skyguide. The ANSP could use its core software as the foundation to build a solution that would fulfill all of its requirements, determining what needed to be modified or added in order to create a 100%-fit solution.

After a 10-month period of intense development and testing between the skyguide and DELMIA Quintiq teams, the BIOMAN (Business-Integrated Optimization of Manpower) platform went live. The platform is used in Geneva and Zurich, and centralizes all of skyguide's data in one location.

The DELMIA Quintiq solution covers the full staff planning range to determine shifts and assign them to the right employees, while taking into account employee qualifications, shift preferences and leave requests. The planning horizon ranges from long-term (several years) all the way down to the day of operations.

BIOMAN also allows employees to independently modify their assigned schedules in accordance with established planning rules. BIOMAN was able to achieve skyguide's overall goal of adapting its work rosters to correlate as closely as possible to actual air traffic.

“BIOMAN has streamlined and improved skyguide’s operations in a multitude of ways. Many tedious tasks are now automatically handled by the platform, and planning statistics can be extracted easily from a single source of information.”

– Alex Bristol, COO, skyguide, 2017



The benefits

The difficulty in handling shift requirements for approximately 600 employees across almost a dozen disparate systems has been eliminated. Through the combination of the DELMIA Quintiq optimizer and a single integrated platform, planners are now able to create customized rosters on a daily basis while taking into account the traffic demand. BIOMAN has also brought additional productivity gains into workforce negotiations regarding pay and terms and conditions – something that simply wasn't possible prior to DELMIA Quintiq.

The fact that external sources of data are directly linked to BIOMAN means that up-to-date staff and licensing information can be directly streamed to the platform. It is no longer necessary to maintain this data manually at the staff planning level, thus eliminating data redundancy and greatly reducing the risk of human error.

Having all the required information on hand also gives skyguide the power to generate multiple what-if scenarios for the same month, allowing them to compare the various planning options before choosing the best decision. The ANSP can now quickly assess the feasibility and cost-effectiveness of various initiatives affecting staffing, be it in terms of airspace reorganization or change in planning rules.

Fatigue risk management has also improved with DELMIA Quintiq. The checking of planning rules to cover all EASA (European Aviation Safety Agency) recommendations during the roster creation process is now fully automated. This automation also covers shift assignments and shift swaps by employees.

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