



Case study

DFS improves ATCO scheduling with integrated Quintiq solution

Quintiq was acquired by
Dassault Systemes in 2014 and is now
DELMIA Quintiq



DEUTSCHE FLUGSICHERUNGS GMBH (DFS)





“Working together with Quintiq has been a positive experience. Quintiq offers the possibility to come together to discuss solutions and recommendations in an open atmosphere. I am extremely happy to have had the opportunity to collaborate with them to create a solution that exactly matches our needs.”

– Ralf Schlingmann, Project Manager at DFS

Around the world, large Air Navigation Service Providers (ANSPs) work in dynamic, complex environments. They need scheduling systems that can change and grow with the company, and they need around-the-clock support for their system’s administration.

Until recently, Germany’s Deutsche Flugsicherungs GmbH (DFS), along with many other large Air Navigation Service Providers, were scheduling their air traffic controllers (ATCOs) using the same commercial shift scheduling system. In 2005, when the system’s developer stopped all software development and declared that it

would no longer provide support or upgrades, ANSPs worldwide were left seeking replacements.

DFS is one company that wasted little time in deciding to replace the legacy system, viewing this as an opportunity to vastly improve its scheduling and planning capabilities. DFS had high demands for the new shift scheduling software. The company wanted a solution that could exactly meet its specific planning needs as well as integrate with their IT environment.



“The old system did not meet our software requirements anymore. As a result, in certain cases, we had to use Excel sheets to complete some tasks. These processes were time consuming.”

– Ralf Schlingmann,
Project Manager at DFS

To meet their criteria, DFS chose the Quintiq Workforce Optimization solution to replace the former system. It was first implemented in the Bremen Control Center and, over time, it will be implemented in all of DFS' Control Centers and Towers.

The Bremen Control Center is one of DFS' five national control centers and 16 towers. Of the 1,800 ATCOs working at DFS, 270 work in the Bremen center together with 50 Flight Data Assistants, helping to direct more than three million flights that cross the German skies annually. For many reasons, planning and scheduling this large number of employees is an extremely complicated task. First, government regulations regarding the number of controllers and the licensing necessary to man each sector are very strict. Second, DFS has to deal with a complicated set of collective labor agreements, which can even vary from site to site. Finally, for the past couple of years, Europe has suffered from a shortage of ATCOs. Short-term scheduling and

long-term recruitment and training must be taken into consideration to decrease the shortage.

DFS' future vision is to benefit from the Quintiq solution even further. Using some of the most advanced planning algorithms available today, the Quintiq Workforce Optimization solution is able to exactly adjust the number of ATCOs to the flow of traffic and to position controllers in the right sectors to constantly ensure that safety regulations are strictly adhered to. Also, the solution is flexible enough to include different labor agreements for each control center and to take into consideration employee preferences. With every project milestone set, DFS and Quintiq strive in that direction.

Quintiq helps DFS better deal with staffing deficits. Improved personnel utilization and employee rostering according to shift preferences reduce stress in the workplace and improve employee motivation and satisfaction.



Employee request

At DFS, employees are given the choice to select a fixed shift pattern or a flexible roster. A fixed shift pattern generates a more predictable roster; a flexible roster is less predictable in terms of working and non-working days but more considerate toward individual employee preferences. Both fixed shift patterns and flexible individual rostering guarantee full compliance to all labor rules and union regulations.

Wochenende	Samstag	Sonntag	Montag	Dienstag	Mittwoch	Donnerstag	Freitag	Samstag	Sonntag
31 (2009)	27.7.	28.7.	29.7.	30.7.	31.7.			1.8.	2.8.
32 (2009)	3.8.	4.8.	5.8.	6.8.	7.8.			8.8.	9.8.
33 (2009)	10.8.	11.8.	12.8.	13.8.	14.8.			15.8.	16.8.
34 (2009)	17.8.	18.8.	19.8.	20.8.	21.8.			22.8.	23.8.
35 (2009)	24.8.	25.8.	26.8.	27.8.	28.8.			29.8.	30.8.
36 (2009)	31.8.		2.9.	3.9.	4.9.			5.9.	6.9.

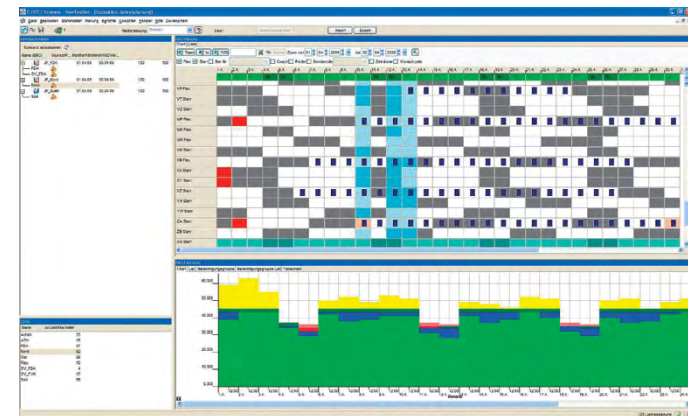


Capacity overview

The planner can check all working and nonworking days including holidays on one screen. The system shows the effects on demand coverage when approving days off to balance capacity and demand to 100 percent. The system supports what-if scenario building allowing the planner to compare different situations to define the best work day schedule.

“Quintiq shows us in a capacity chart where there is a personnel shortage. During shift planning, planners can view on one display where there will be a shortage of controllers, a day, month or year ahead. The fact that the capacity is shown clearly in one display makes the planning much easier.”

– Ralf Schlingmann,
Project Manager at DFS





“By the end of the iterative development process, the software design was exactly configured to our requirements. DFS has very rigid requirements, so this is a big benefit. Oftentimes, we find that contractors can’t meet all of the requirements.”

– Ralf Schlingmann,
Project Manager at DFS

Another reason DFS chose Quintiq was because of the unique capabilities that allow the system to be configured to meet its strict planning requirements. Quintiq and DFS have been working closely to develop the DFS-specific aspects of the system.

As with IT system upgrades in any large organization, the implementation process at DFS has been complex. Understanding that this is normal, Quintiq solutions are extremely flexible and the implementation process is iterative, with quick turn-around times for updated versions. Schlingmann commented: “If something in the software doesn’t work right or if one DFS site

wants something slightly different, there is a new software model available for work three or four days later.”

The DFS roll-out is continuing and will eventually include all of DFS’ ATCOs and operational technical employee in the Control Centers, Tower sites and Aeronautical Information Service Centers - a total of 2,700 people. Also, additional functionality including productivity checks, event handling in real time and controller training alerts will be included in the system at a future date. Together DFS and Quintiq will bring ATCO scheduling to new heights.



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