



Case study

Improved rostering and enhanced fatigue risk management





Airservices: Fast facts

Location

Its head office is in Australia's capital and largest inland city, Canberra.

Workforce

Approximately 4,000 employees. This includes almost 1,000 air traffic controllers working at 2 major centers in Melbourne and Brisbane, 4 terminal control units and 29 towers at international and regional airports.

Services

Air traffic control, airways navigation and communication facilities, aeronautical data and airport rescue and fire-fighting services within the Australian Flight Information Region.

Geographical reach

Manages and monitors Australian airspace, which covers approximately 11% of the earth's surface. Also contractually manages upper-level airspace (above 30,000 feet) for the neighboring Pacific Island Flight Information Regions of the Solomon Islands and Nauru.



The ANSP workforce challenge

Air traffic management workforce planning can be challenging for air navigation service providers (ANSP) due to the factors that must be considered when creating rosters including; fatigue management, shift assignments, training and qualifications.

Manual roster planning involves accounting for staff preferences, skills, qualifications, requirements for training and meeting times. Mandated safety requirements, planned and unplanned leave, work agreement conditions, equitable shifts and sector assignments must also be factored into the development of a roster for staff.

The customer

Airservices is a government-owned corporation that provides safe, secure, efficient and environmentally responsible services to the aviation industry.

In addition to managing air traffic operations for over 80 million passengers on more than 4 million domestic and international flights every year, the ANSP delivers aeronautical data, telecommunications, aviation rescue and firefighting services.

Airservices' Aviation Rescue and Fire Fighting (ARFF) service is one of the world's largest providers of aviation rescue and fire fighting services. Over 740 operational and support personnel based around Australia staff the ARFF.

Furthermore, engineers and technicians support the Australian Communications Navigation and Surveillance/Air Traffic Management system, that consists of more than 440 navigation and surveillance aids.

The challenge

"Prior to implementing Quintiq, Airservices used multiple systems for each stage of the rostering process and these lacked holistic integration with our SAP HR and payroll system," says Nigel Fitzhardinge, Resource Planning and Rostering Manager, Air Traffic Control Group at Airservices.

"This resulted in numerous manual and time-intensive processes being required to support the systems, forcing multiple data importing and exporting to occur, which affected our data integrity."

The requirements

Airservices required the new solution to not only provide an end-to-end planning system for the ANSP's rostering processes, but also integrate with both its IT environment and the SAP HR and payroll system.

"It was important for us to select a tool that met Airservices needs, particularly for the regulatory, industrial, licensing and complexity surrounding air traffic control rostering," says Fitzhardinge.

The solution had to provide Airservices with increased visibility over all stages of the rostering process. This was necessary to enable management to ensure compliance with multiple industrial agreements as well as the regulations and licensing components of providing an air traffic control service.

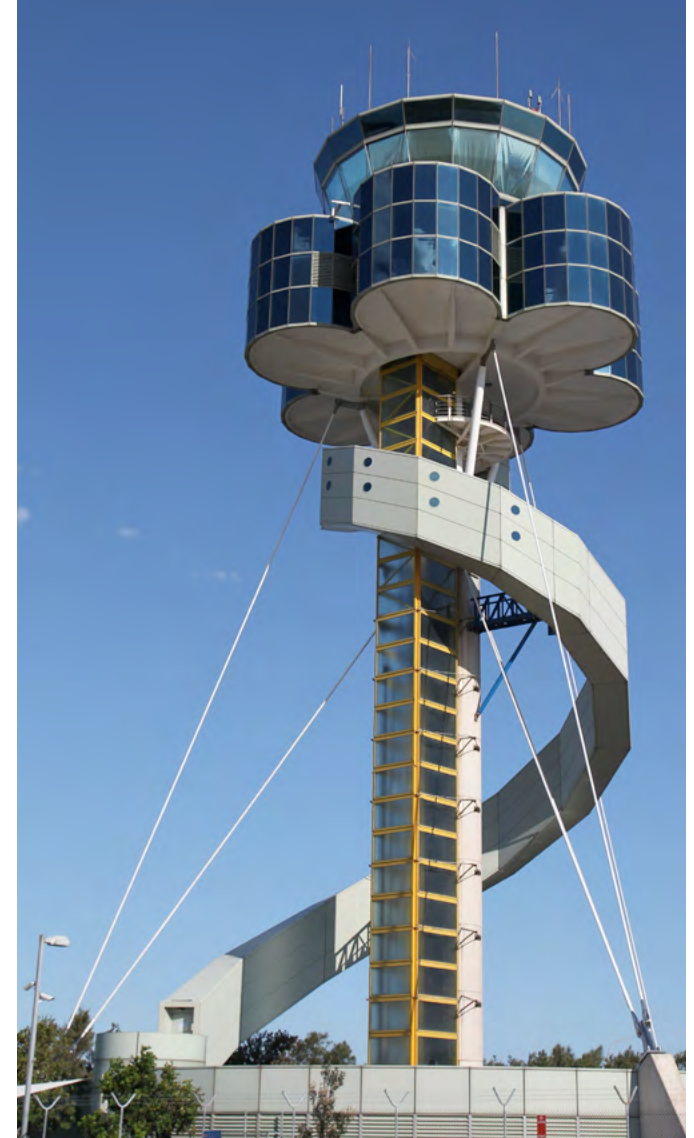
The increased visibility would also enable more in-depth analysis and better reporting to support Airservices' operations.

The system needed to cover Airservices' requirements for medium- and short-term scheduling of Airservices' air traffic control and other support staff.

Airservices also had an additional requirement. The software needed to deliver an enhanced fatigue risk management system (FRMS) to manage fatigue-related risk.

This was a two-stage process based upon an additional rule set specifically developed for Airservices' operating environment in collaboration with its external fatigue consultants, Integrated Safety Support.

The goals for implementation were to integrate the additional FRMS rule set and its associated processes to predict and manage potential acute and cumulative fatigue impacts.





The choice

“Due to its extensive experience with ANSPs, Quintiq had an understanding of the complexities involved in air traffic control rostering,” says Fitzhardinge.

“Being an SAP partner enabled it to develop an end-to-end planning system which was integrated with our current HR and payroll system.

“In short, Quintiq was able to customize a solution to meet our needs.”

Quintiq & ANSPs

Quintiq’s depth of experience in the air traffic controller industry is backed by the fact that 30% of the world’s airspace is managed by ANSPs which use Quintiq solutions. These clients include the FAA, Nav Canada, Deutsche Flugsicherung and PANSA.

Implementation

Development and implementation of a solution for Airservices’ operational air traffic management workforce was commissioned in late 2011.

A second phase of the project – the creation of an enhanced fatigue risk management system – started in February 2012 and went live six months later.

Paul Shepherd, Director of Quintiq Australia and New Zealand, comments: “We are proud to have brought in this phase of the project on time and under budget, while also delivering a solution of unquestionably high quality to Airservices. The relationship formed between Quintiq and Airservices’ staff has been crucial to the process.”

“Because of the size and complexity of our initial implementation, coupled with lessons learned from previous experiences and a mature relationship between Airservices and Quintiq, we were able to plan and deliver the FRMS components on target,” says Fitzhardinge.

“We worked with Airservices on transforming their workforce planning to achieve critical HR obligations and organizational objectives in the areas of government regulatory and labor law compliance, scheduling, recruitment and training, while integrating with SAP payroll.

Quintiq’s partnership with Airservices has deepened our experience in empowering businesses to operate safely and cost efficiently.”

– Paul Shepherd,
Director of Quintiq Australia
and New Zealand



“The Quintiq solution provided a level of vision over the entire rostering process that didn’t exist before.

This has led to increased management capability and management oversight reporting capabilities which have identified areas to reduce costs and seize latent capacity within the network.”

– Nigel Fitzhardinge,
Resource Planning and
Rostering Manager,
Air Traffic Control Group
at Airservices

The result

A solution for Airservices' air traffic management workforce

Airservices reported that the implementation of Quintiq’s ANSP workforce planning software, adapted to the specific needs of Airservices, had greatly enhanced its rostering process.

“The benefits from the initial implementation include approximately an 80% reduction in number of payroll-related queries as well as reduced processing time and printing costs,” says Fitzhardinge.

The solution introduced a level of visibility over the entire rostering process. This led to increased management capabilities which identified areas where costs and latent capacity within the network could be reduced.

The Quintiq software offered enhanced functionality, ease of use and a modern look and feel. This enabled an increase in productivity. Eliminating the need for manual calculations has also resulted in reduced error rates.

Furthermore, the software support tool facilitated the implementation of Airservices' enhanced fatigue risk management system.

With the Quintiq software in place, Airservices staff now can use a single tool throughout all stages of the rostering process.



“This new tool greatly assists our decision-making around fatigue-related risk and its management.

The software design, developed by Airservices and our fatigue risk management consultants, Integrated Safety Support, has enabled Quintiq to deliver a high standard of software, which is aligned with our requirements.”

– Jason Harfield,
Executive General Manager at
Airservices

The Fatigue Risk Management System (FRMS) project

Quintiq's involvement was extended through a second phase to deliver an enhanced fatigue risk management system.

The software now enables Airservices to manage fatigue-related risk through a two-stage process based upon an additional rule set. The additional rule set was specifically developed for Airservices' operating environment, in collaboration with its external fatigue consultants, Integrated Safety Support.

Stage 1 of the process is fully automated within the software. It indicates a potential fatigue level for each shift and alerts planners in real time of potential elevated fatigue-risk scenarios.

Stage 2 of the process incorporates a decision-support tool which prompts the planner to consider any additional or environmental factors that may increase fatigue. Furthermore, the planner is supported in the application of controls to minimize the impact of fatigue-related risk.

The resulting software support tool has enabled Airservices to implement its enhanced FRMS – that includes all the strategic, tactical and associated risk assessment processes – with a user-friendly interface.

Fitzhardinge states: “It was our opinion that the FRMS had a level of depth that went beyond the realms of normal human computation and therefore, its implementation would not have been possible without a sophisticated software support tool”.



“The biannual Australian International Airshow held at the Avalon Airfield in March 2013 required a high level of planning and preparation. Quintiq enabled easier rostering of the staff selected from around Australia to operate at the airshow.

In putting together such a varied team, important fatigue, licensing and industrial factors needed to be considered. The Quintiq application provided a high level of detail and assisted with planning for an intensive, non-standard operation.”

– Nigel Fitzhardinge, Resource Planning and Rostering Manager,
Air Traffic Control Group at Airservices

The future

Airservices is currently planning for an archiving data solution to build upon the system’s user experience, as well as to enable enterprise reporting in conjunction with its other IT systems.

Airservices is also looking to complete the optimization components of its current systems with respect to shift-and master roster creation.

Airservices is also planning on increasing the level of data information flow between its Quintiq solution and SAP system to bolster its absence-and-leave rostering processes.



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