

# Case Study – ROI of Early Human Factors Involvement in Asset Replacement

## Human Factors

Human Factors' experts consider the human at the centre of the functional system around them. Any change to that system will have an impact to the user in the middle. If this impact is not fully understood, risk can be introduced. The CAA now expect Human Factors elements to have been considered in functional change. In the wider business context, Human Factors focus optimises performance of individuals within the system to work for more successful end goals.

### Context

A regional airport with low staff numbers was progressing an internal project to replace an aging radar with a much improved, both in reliability and functionality, radar system. They did not have internal Human Factors capabilities and had underestimated the size and impact of this change on the air traffic controllers as this had been scoped with a focus more on the engineering aspects of the hardware replacement. Familiarisation training had commenced on the new radar system and ATCOs had raised concerns in relation to their interaction with the system. The CAA requested they have the new Human Machine Interface (HMI) design for the Air Traffic Controllers (ATCO) assessed by a Human Factors specialist. ANSL were requested to complete this assessment on their behalf and proposed a fast turn-around for the work to enable them to minimise further cost and delay.

### Tasks

- Unit visit by our HF Specialist to learn how the ATCOs and Assistants work with the existing system; their understanding of the information presented and procedures that impact its use.
- Gaining an in depth understanding of the proposed new system HMI.
- Workshops undertaken with the Air Traffic Controllers to understand their concerns.
- Full HF review carried out of the HMI and report written for submission to the CAA.
- Support to the unit in conversations with the radar manufacturer to drive required HMI changes.
- Attendance at project meetings to provide HF support to the unit.
- All this was delivered in a 3 week period and completed within four weeks from the initial request

### Result

ANSL rapidly provided the evidence and support for the unit to drive effective improvements to the radar HMI minimising any further cost and delay. This enabled them to gain CAA approval for the system operation. Crucially, the end users also felt valued, listened to and understood which is a positive experience for employees.

However, due to the late inclusion of Human Factors expertise in the project, there was a financial impact. To meet regulatory approval and HMI design guidelines, software changes were required after the system was accepted by the unit.

This is extra cost for additional work by the manufacturer and takes time, resulting in significant delay to implementation. The radar capability during this time was not as expected and there was increased business risk of the aging radar failing during the delay.

Early involvement of Human Factors in projects enables potential user centred issues to be identified early. This reduces overall project cost liabilities and increases end user satisfaction. At ANSL we understand these Human Factors issues. We can support any ANSP undertaking functional changes to ensure that all Human Factors variables have been understood and provide evidence for regulatory approval where required.

For more information regarding how we can support your business with Human Factors expertise, contact [Lucy Kirkland](#)



