MoD mobilises aircraft engineering and asset management with IBM

Overview

The Challenge
– Improve front line engineering and asset management
– Increase efficiency, reduce costs.

The Solution
– IBM Global Business Services managing the design, development and implementation of the existing engineering and asset management system for use wherever aircraft are deployed.

The Benefits
– Expeditionary troops, even those with zero communications links, have access to sophisticated, proven asset management functionality.
– Avoiding the transcription of manual records increases the accuracy and value of data.
– Better data enables targeted maintenance resulting in reduced support costs.
– Single point of data entry reduces costs while maintaining safety.

To support front-line combat aircraft, transport aircraft and helicopters, the Ministry of Defence (MoD) uses the Logistics IT System (LITS). Complete aircraft and the individual assets that make up those aircraft are managed through this system, which provides aircraft configuration, asset tracking and aircraft usage information as well as fleet management and fault management functions. LITS provides both real-time airworthiness assurance and a lifetime record of an aircraft's configuration and flying history.

The changing nature of military operations means aircraft are increasingly deployed away from established air bases to locations where reliable data communications are not always available. Dial-up solutions, while suitable in some situations, depend on the quality of landlines, or the availability and reliability of satellite phones. As a result, maintenance information was often recorded on paper and entered into LITS on return from operations weeks later. Potential inaccuracies compromise the reliability of aircraft data, so increased safety margins were added to compensate, leading to more frequent servicing of aircraft, inefficient use of assets and higher costs.

The MoD needed to find a way of providing its normal asset management capabilities away from its fixed bases and turned to IBM as providers of LITS.

A productive relationship
IBM and the MoD collaborated closely to understand and define user and system requirements then meet the challenges involved. Guarantees on airworthiness data had to be maintained and continuity and consistency of information ensured. There were also many project management issues to overcome because of the number of stakeholders involved. "The design experience that IBM brought to the project was invaluable," explains Squadron Leader Scott Hartley, Project Manager for Autonomous LITS. "They also provided a team that was professional, flexible and easy to work with."

"We had a restricted budget and needed a quick solution to support our expeditionary troops and, as importantly, we had to get it right."

Group Captain Andy Dipper, Assistant Director, Logistic Applications Future Programmes (LAIPT)

Equipping modern forces

The new solution, known as Autonomous LITS, provides the complete LITS system on a laptop, enabling it to be used independently for weeks at a time when away from main operating bases. It has transformed the usability of LITS in front-line operations, providing flexibility and fast response by eliminating the need to dial-in to the central server.

While aircraft are away from base, changes to their reference configurations, for example a change in policy for servicing a component, continue to be recorded on the central database through the main LITS system. As a result, when a laptop and the main database are brought together again they don't synchronise exactly. An innovative software solution was developed to resolve these synchronisation alerts and, for the user, both the synchronisation and the creation of a new database image on the laptop is simply a "plug and play" operation.

An open approach

Group Captain Andy Dipper, Assistant Director, Logistic Applications Future Programmes (LAIPT) admits that this was not an easy project: "We had a restricted budget and needed a quick solution to support our expeditionary troops and, as importantly, we had to get it right."

IBM committed to a fixed price along with the demanding timescale. The complexity of the task, however, meant the project was delayed. "The IBM team was completely open with us, keeping us fully informed at all times," says Dipper. "They honoured the agreed price and worked with us to mitigate the impact of the delay."

A great leap forward

Like all new solutions, Autonomous LITS will need time to mature into an optimally performing system. It has, however, already been used to support helicopters on exercise in Norway and other LITS fleets are considering the substantial benefits it would bring. Improved response times mean users enter information as it is gathered, removing the inefficient and error prone process of keeping paper records for later manual input.

Better availability of close to real-time data enables accurate analysis of equipment within hostile environments, where the highest level of asset management is required. Maintenance support has improved, ensuring the right spares are in the right place at the right time. Better aircraft data reduces the safety margins needed, so aircraft can fly for longer without maintenance and with greater confidence. Accurate information on spares usage also drives down costs because stock levels can be more tightly controlled.

Squadron Leader Hartley sums up the benefits: "By working with IBM on Autonomous LITS we have taken a quantum leap forward from static cold war engineering and asset management to expeditionary operations. The solution's performance is lightning fast, robust and saves days of data entry once units return to their main operating bases."

For more information

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