

Tracking and Managing Support Equipment World Wide

Ground Equipment Management System – GEMS

Problem

The Ground Support Equipment used in support of aircraft operations has to be constantly monitored and maintained, particularly for an operator such as the Royal Air Force, operating a wide variety of aircraft in locations spread around the globe.

As many of these equipment types have sub-assemblies, the maintenance of the form/fit/function of whole units must be monitored to ensure that the requirements for either periodic inspections or environmental hazards monitoring are met.

As aircraft move from location to location the support equipment follows, therefore the monitoring of this equipment—as well as its configuration—is of fundamental importance. Deployment operations mean that certain equipment, from either one location or many, needs to be re-assigned on a temporary basis – often at short notice.

Solution

The Ground Equipment Management System (GEMS) was developed to cater for the RAF's requirement, and was first brought into service in 1995 in support of some 6000 major equipment items, ranging from generators through to lifting tackle and stores racking.

GEMS tracks the history of all equipment, including locations, modifications and maintenance events. The information recorded against a particular task also covers the time spent on the activity, any defect notices and spares usage. GEMS also produces all of the before-use inspection reports required for personnel to carry out standard preventive maintenance activities.

All scheduled servicing is pre-planned and each detailed work package created covers the equipment to be serviced or inspected, details of the person assigned to the task and any technical publications required.

The information from permanent and deployed stand-alone GEMS sites is



collected centrally at the GSE Maintenance Analysis Computer (GMAC) based at RAF Wyton. This system provides a global view of all assets; helping to monitor the in-service use of each equipment type, recording every failure or incident, and conducting trend analysis.

The GMAC system has been continually refreshed, keeping pace with technological advances in database engineering, and is:

- Web-enabled, allowing users to access the GMAC via a browser.
- Connected to the MoD's Restricted LAN Internet (RLI), allowing near real time updates of the system to both users and the GMAC.

These latest improvements have greatly enhanced the efficiency of the system for all users. They have been especially valuable to the Royal Navy, which has deployed the system on board their ships.

Ruggedised laptop systems are now also available to accompany deployments, thus providing a truly rapid and compact mobile capability.

LSC Group continues to provide support to this operation: Firstly with an on-site development support capability for 1st line support and minor program enhancements. Secondly, a direct communications link to LSC Group's technical and development centre ensures a high level of continuous support.

The Challenge

To consolidate maintenance information to support some 6000 geographically dispersed items of equipment.

Solution

A local engineering management system that reports required engineering data to a central database for global management information and reporting.

Customer Benefits

A single, centralised system that provides a global view of the state and location of all assets.

Improved equipment availability through a rigorous maintenance regime.

Benefits

At local level, improvements have been made in the efficiency of tracking of assets, maintenance management, and configuration management, which facilitate availability of GSE. Selection of equipment for deployed operations, and preparation of the current data for deployment of the equipment, is now much simpler.

At the global level, visibility of equipment data from the fleet enables collation of management information such as:

- Cost of Ownership
- Availability, reliability and maintainability
- Modification programme management
- Fleet management

