

## Case Study: MoD Defence Equipment & Support (DE&S)

### MoD DE&S

An executive agency of the Ministry of Defence, Defence Equipment and Support (DE&S) was officially formed on 1st April 2007 from the merger of the Defence Procurement Agency (DPA) and the Defence Logistics Organisation (DLO).

DE&S headquarters are based in Bristol. The organisation currently employs approximately 29,000 staff based at sites across the UK and abroad. It has an annual budget spend of up to £16 billion, representing 43% of the Defence budget.

DE&S equips and supports the UK's armed forces for current and future operations. It acquires and supports through-life, including disposal, equipment and services ranging from ships, aircraft, vehicles and weapons, to electronic systems and information systems.



### Merlin Mk1 Helicopter mission data preparation

#### The challenge

The Royal Navy's fleet of Merlin HM Mk1 maritime helicopters is a key component of the UK's anti-submarine and anti-surface warfare capability. The aircraft also have a number of secondary roles including surveillance, search and rescue, casualty evacuation and logistic support.

A significant factor in the operating efficiency of the Merlin is the time required by aircrew in order to prepare data for the on-board computer systems, prior to each mission. This was identified as a major bottleneck, with existing methods for capturing and loading data being cumbersome and prone to errors. In March 2004 the MoD invited companies to tender for a contract to produce a new mission data preparation system, to form part of a suite of software to be named the Merlin Preparation System.

#### The solution

IPL's tender was selected by the MoD based on price, the proposed solution's design and IPL's proven ability to deliver.

The system was developed with the aim of reducing mission planning time as the primary goal. An intuitive user interface allows for fast entry of mission data, via screens designed to look and feel similar to those of on-board systems, and with which aircrew are familiar. Extensive validation of all entered data and intelligent error reporting means less time need now be spent diagnosing data problems. The software interface also incorporates MaplinkPro® to enable graphical mission maps to be quickly viewed and generated.

The system was specifically designed to require little maintenance, and be robust and transportable; enabling the Royal Navy to deploy it quickly on ship or shore, operating either in a stand-alone or networked environment. A simple data storage and retrieval mechanism is employed, allowing common mission data to be easily distributed between installations.

Other features include the ability to use entered data to automatically produce mission briefing presentations and to download data from the aircraft in order to replay missions.

In addition to developing to the defence standard quality criteria specified by the MoD, IPL provided a comprehensive safety case in order to meet the demands of the Safety Integrity Level 2 (SIL2) requirements. Safety-related elements of the system were tested using IPL's own market-leading Cantata++ software testing toolset.

## The highlights

IPL delivered the system within the required timeframe and to the agreed price.

The project has been a major success story. Feedback from training courses for Merlin aircrew confirmed they were exceptionally impressed by the system's capabilities. Gaining the confidence of the aircrew and demonstrating the new system's benefits to them have been vital factors in measuring the project's success.

A further significant factor in this success was the close working relationship between IPL and the Royal Navy. From the bid stage right through to final delivery of the solution, a comprehensive system prototype was developed and maintained, providing a clear and unambiguous representation of what would ultimately be delivered.

## About IPL

Founded in 1979, IPL has a long history of successfully delivering excellent value consultancy and end-to-end solutions to both the public and private sectors.

IPL's consultancy is renowned for its quality and value. Our consultants are talented and independent-minded individuals with extensive industry experience. We consistently exceed our clients' expectations through a combination of imaginative thinking, managerial and technical expertise and many years of systems engineering experience.

IPL's track record in end-to-end solutions development is exceptional. Our proven development methodology allows us to cut through technical complexity, manage risk and completely focus on delivery. We consistently deliver reliable, efficient and accurate systems to a precise schedule.

IPL is an ISO9001:2000/TickIT registered company having a permanent workforce of 240, revenues of ca. £21M p.a. and 40,000 sq ft of secure office space in central Bath.

*"The DPF system has been in continuous use since 2004 with Merlin frontline and training squadrons and will do so until the Merlin Mk1 goes out of Service. This is a testament to the IPL product as the aircraft has undergone numerous incremental changes since then but not required an update to the DPF software itself.*

*Feedback from the operators is that it provides an intuitive HMI in most of the commonly accessed functions which is essential from an ease of use point of view. Though all of the functionality is not currently used, this is understandable given the wider roles the Merlin helicopter now conducts since the DPF was devised."*

**Captain Andy Lison Royal Navy**  
Merlin Team Leader



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