

## Ship Registry Administration System case study



### Isle of Man Ship Registry

The Isle of Man Ship Registry wanted to amalgamate numerous disparate systems used to manage the vessel registration processes

Using Foundations TM , PDMS developed a browser based administration system that manages all of the Registry's core business functions.

Benefits realised include: more efficient business processes with a significant reduction in time spent entering and finding data; immediate access to up to date important management information; provision of a robust & flexible technology platform from which the Registry can launch new business services.

"The Ship Registry is delighted with 'MAVIS'. It brings together all of the individual data repositories held in so many different formats which have been developed over the years with no central organisation or purpose. We spent a great deal of time on the business analysis phase and this process permitted the Ship Registry to redesign and consolidate some outdated working practices in advance of MAVIS, it also achieved 'buy-in' for the changes from staff at all levels.

The tri-partite working between PDMS, the Ship Registry and Government's Information Systems Division, as project manager, worked effectively throughout the project to deliver on time and within budget.

We now have a system which has changed the way we work and upon which we can rely for both integrity and security of data. As we move forward we will be able to analyse management information and trends which will produce reports at the touch of a key.

The Ship Registry is already looking to Phase II of MAVIS which will see the system extended to include secure external access - for staff, clients and the public - this and other future enhancements should put the Isle of Man back where it belongs - at the forefront of ship registration in terms of technology, innovation and customer focus."

[www.gov.im/dti/shipregistry](http://www.gov.im/dti/shipregistry) Dick Welsh Director, Isle of Man Ship Registry



## Challenge

The Isle of Man Ship Registry was established as an international register in 1984 and today boasts over 450 merchant vessels & commercial yachts, representing a gross tonnage of over 9.2 million. With an international client base that includes some of the world's major shipping organisations, the Isle of Man Ship Registry has recently been voted "best in the world", claiming the top spot in the international shipping industry round table annual flag state performance table. The Island's Ship Registry is highly regarded for the quality of service the team provide to ship owners, ship managers, maritime lawyers and financiers around the world.

The original Ship Registry database system had been developed by PDMS some years ago and was running alongside a variety of different applications including: other Microsoft Access databases; Excel spreadsheets; Word documents and a manual register. This mix of disparate legacy applications made it extremely difficult to establish efficient business processes because the same information had to be re-keyed into different systems which could, in addition, also cause data integrity issues. Frustratingly, it also meant that it was difficult for the Ship Registry staff to interrogate, analyse and report on management information.

An urgent upgrade of the Ship Registry's software was required to provide a new modern browser based system that would not only address the Registry's core requirement of functionality, to cover key activities such as the processing of vessel registrations, surveys and fees etc. but one which would also provide access to vital management information. The new project, Marine Administration Vessel Information System or 'MAVIS' was formed. The new system would be fundamental to the effective day to day running of the Isle of Man Ship Registry and would also need to provide a new technology platform to allow for future business growth. PDMS, who had successfully worked with the Ship Registry on past technology projects, were awarded the contract to develop the new system using their Foundations TM platform.

## Solution

The growing success of the Isle of Man Ship Registry and the consequential increase in the Registry's workload meant it was imperative that the new Registry System was up and running as quickly as possible. The system was developed utilising PDMS' tried and tested Foundations TM technology built on Microsoft's .NET framework. Using Foundations TM the PDMS development team were able to implement the core functionality very quickly & cost effectively, whilst the Foundations TM platform also addressed other key requirements in relation to security, ease of use and importantly, provided the required platform for future growth. The new system uses a Microsoft SQL Server database for data storage and retrieval and is hosted by the Isle of Man Government.

The new Ship Registry System has been designed to be intuitive and contains numerous flexible features to enable the Ship Registry's staff to use the system as efficiently as possible. Ship Registry staff who access the system are automatically signed in using their existing Active Directory credentials and system options available to them are automatically determined by their membership of specific user groups. User's permissions can also be maintained by the system administrators in Active Directory. Every time a user accesses the Ship Registry System the

Active Directory user groups are automatically synchronised with those held in the Ship Registry System.

The new Ship Registry system is tab and menu driven with intuitive, business-based functional subdivisions, each with logical links to the other key functional areas based on the business workflow. The analysis stage of the project identified a system design to ensure that registry staff could input or access data quickly & easily. Hyperlinks have been used to facilitate navigation within the system. To make data input easier, date fields have a 'Calendar option' to enable selection of the required date / month / year. As there are a large number of fields relating to ship details, the data controls have been grouped and it is possible to collapse and expand the groups to improve screen readability. Foundations TM also provides support for one-to-many relationships, for example, since a ship can have multiple previous names, additional ones can be easily added via an expandable control, accessed by clicking an "Add New" link.

The powerful Foundations TM search component has been used to ensure that records & documents within the system can be located quickly & easily. Features include an alphabetical search filter, wildcard searches and multiple criteria searching using drop down boxes to find vessel details. The system generates printable versions of documents & reports and data can also be exported to excel spreadsheets if required.

All "Record" data is stored in a single, central, SQL Server database with "Document" data residing in the Isle of Man Government's standard document repository. Documents may be generated by the central Ship Registry system or deposited directly into the document repository via uploads through the Ship Registry system ensuring that record and document data is consistent throughout the business process.

The core part of the Ship Registry System centres on the registration of vessels and the information held on each vessel is comprehensive including the vessel details (type, tonnage etc.), actual registration data, survey information & documentation, associated details, fee charges and a complete history of the changes to vessel records. The database holds 'versions' of vessel records which can be accessed individually to allow viewing of 'past' data and generation or re-printing of 'past' documentation. Ship version records are "locked" when a user starts to edit them. They remain locked to that user until the user explicitly saves the record using the "save final" button. At this point, the new (or changed) record becomes "publicly" available, and the ship can be edited by another user. Ship Registry staff are automatically alerted on their home page with details of which records they currently have locked each time they log on to the system. In some situations another user may need to access a locked record, for instance if the locking user goes off sick. In this scenario, the system administrators have access to a "record locks" screen and can either abandon or finalise the latest 'locked' record version.

Another beneficial feature contained within in the system is the notification area displayed on the homepage which acts as a "to do" list for Ship Registry staff. Depending on the user's permission group or groups, different notification reports will appear on the home page when the user logs on. These reports act as useful reminders to Ship Registry staff and include for

example, notices of registrations and certificates that are due to expire in the next 2 months or overdue certificates, incomplete tasks assigned to the current user or, as previously mentioned, details of ships locked to the current user.

The new system not only manages the registration of individual vessels and associated business processes but also includes other critical Ship Registry functions such as: the generation of survey certificates; accident & casualty reporting and the processing of fees and invoices. Working together with the project team from the Ship Registry and the Government's Information System's Division, PDMS were involved in all stages of the Ship Registry project from the initial specification through to the development, testing, user training and support & maintenance. By using their Foundations TM platform and it's re-usable components, PDMS were able to deliver a complex business system crucial to the day to day operation of the Isle of Man Ship Registry within a tight 5 month time frame.

## Results

The new Ship Registry system went live in April 2007 and it has already had an extremely positive impact on the Ship Registry's day to day operations in delivering real business benefits to the Ship Registry's administration and management teams.

Business benefits include:

- All of the Ship Registry's key business data is now entered, stored and accessed through one central system, which has resulted in considerable time savings as staff no longer have to enter the same information into different computer systems or waste time trawling through filing cabinets or ring binders looking for further information on vessels.
- Greater levels of data accuracy, as a result of the centralised data storage.
- Importantly, the system has improved security with its secure administration environment. In terms of risk management the data is now held in a secure environment with sufficient redundancy and back-up built in to the system. Where fire or damage to the Ship Registry's premises was always a risk with the previous hard copy 'ledger-book' style of registers in which key data was previously held, this is no longer the case
- Provision of a full audit history against Vessel information and management processes.
- Increased business process efficiencies - The new system has been specifically designed to incorporate functionality, such as the home page "to do" lists, which aims to help the busy team at the Ship Registry carry out their duties more efficiently.
- Management Information - Vital management information including statistics for analysis and reporting can be accessed and printed off with the minimum of effort. Staff now have immediate access to a ship's full history and they can quickly call up all detailed information, often required at short notice when an accident or incident occurs with a vessel.
- The new system has been built to allow for the addition of new features and functionality as the Ship Registry's business grows and evolves. Plans for potential future developments include the ability for a surveyor on board a ship to enter vessel survey data onsite and allow for 'Associates' to provide on-line updates e.g. vessel name changes. Associates are third parties who are linked to a vessel e.g. lawyers or owners.