

UK Hydrographic Office Archive Catalogue

Capturing the work of Captain Cook.



Part of the Ministry of Defence, the UKHO supplies navigational products and services to the Royal Navy, the merchant marine, sailors and the growing number of recreational seafarers. The UKHO undertakes a range of disciplines, including chart compilation and production, navigational textual editing and publishing, physical oceanography, geodesy, and Law of the Sea.

As well as meeting the requirements for new charts and maritime information, the UKHO is custodian of a national archive containing hydrographic surveys, charts and books, notices to mariners, aerial photography and numerous other types of material much of which has historical significance, such as the charts produced from Captain Cook's historic survey of the east coast of Australia.

Building on the experience gained from the contract for the electronic conversion of Royal Navy technical handbooks, LSC Group secured a high profile contract to digitise part of the UK Hydrographic Office (UKHO) archive of marine charts and maps. Under the contract, awarded by the, LSC Group

captured a large quantity of Hydrographic charts and other related information, many of which dated back to the eighteenth century.

Examining the requirement in detail, it was clear that there were many synergies between the UKHO Archive Catalogue project and the technical handbook conversion projects which LSC Group had undertaken for the Royal Navy. It was basically about capturing the legacy information, converting it into electronic format and then adding some intelligence so that future users will be able to search and access the information efficiently.

The project involved the development of an innovative software solution for use by both LSC Group and UKHO for the initial data capture, adding meta-data, geo-referencing, quality checking and also verification by UKHO staff, all within a workflow environment.

The conversion work was undertaken at two locations, the UKHO offices in Taunton and LSC Group in Weymouth.

The Challenge

Converting legacy paper-based information into electronic format that enables greater search and retrieval facilities.

Solution

Workflowed software solution that digitizes documents.

Customer benefits

More efficient and effective search capability.

Greater flexibility in terms of generating and storing information.

The initial scanning was carried out in Taunton, avoiding the need to remove any documents from the storage site. The scanned images were held in a project file server, which was accessed by LSC Group personnel in Weymouth using a secure communications link and thin-client network.

LSC Group personnel at Weymouth were equipped with dual display PCs and for each stage of the conversion a screen image of the scanned document was downloaded from the project server for processing. The scanned image was presented on one of the screens and the second screen was used for data capture and geo-referencing.

Geo-referencing involved relating the pixels x and y values on the scanned images to actual geographic co-ordinates on the earth's surface. Once geo-referenced the survey, charts and map images were displayed as background on the user's PC for superimposing other geographic information held in UKHO databases (e.g. wrecks and navigational aids). The geographic extent of surveys, charts and maps were also captured as geographic polygons so that users were able to search on a particular area of the world and list all the available surveys.

LSC Group completed the work in two years. The company assigned a team of up to 15 people for the project, most of whom were based at Weymouth. The programme covered three phases. The initial software development and set up and then the actual data capture which covered two twelve-month phases.

By digitising this archive, information is now more readily available. Historically personnel in UKHO had to go into the archive and use analogue ledgers to find the chart relating to the area they required.

UKHO staff are able to search against specific criteria, faster and in more depth than with a physical library. Additionally the search results can be supplied to the customer in a range of formats, either electronic or paper.

Technological advances and their impact on market demands will continue to result in significant changes in the market in which the UKHO operate. UKHO is already at the forefront of the development of electronic chart production and distribution, so the Archive Catalogue project effectively rounds this off retrospectively, by encompassing all of the earlier generation material within the repository.

"Data capture is a highly technical process," says Brian Ambler, "It requires some knowledge and understanding of the documents held within the archive. We were fortunate in that a number of key LSC Group personnel are experienced navigators. This was seen as an important factor in LSC Group being awarded such a high profile contract."

The UKHO Project Manager, Christine Garland stressed the importance of quality management saying: "Data quality and accuracy are important aspects of data capture for the catalogue to support all current products and services. It will provide

the ability to respond flexibly to future market requirements for digital information and assist the UKHO in fulfilling Freedom of information obligations."

The archive project is part of the UKHO's ongoing investment in infrastructure known as Vision 2000 Flowline V2F. This involves building the necessary databases and overhauling the UKHO data handling processes to support the future commercial requirements of the Office, whilst at the same time meeting defence needs for digital information.