

C-HO AS THE BASIS OF FUTURE DEVELOPMENT

HydroService AS

In July 2002, the revised Chapter V of the IMO Safety of Life at Sea (SOLAS) Convention entered into force. Under the new Regulation 9, the Contracting Governments of SOLAS are now required to provide and maintain Hydrographic Services and products. In practical terms this regulation imposes an obligation on the 163 IMO member states the responsibility to collect and maintain valid data for production and maintenance of nautical charts and publications.

HydroService AS is a company with a strong technological base and a high degree of understanding of the requirements needed to establish and operate an effective modern Hydrographic Office (HO).

The company is dedicated to developing, publishing and marketing software tools for professional administration and production of all nautical chart products and publications. It offers task oriented step-by-step solutions applicable for a range of users, from Hydrographic Offices who generate products and services based on international requirements, to port operators who make "fit for purpose"™ Electronic Charts (EC).

HydroService AS also conducts basic and advanced training classes for system operators and managers.

History

HydroService AS was established in 1997 as a joint venture between the international C-MAP Group and Morintech Ltd., in Saint Petersburg. The basis was to capitalise on the two companies'™ joint expertise in software development, publishing and distribution.

Founded as a Norwegian limited company it's™ headquarter was established in Egersund, Norway.

With the core business being software tools for data management and production of nautical charts and publications, it was natural to team the company closely with C-MAP Norway, already an acclaimed world leader in distribution of nautical chart data in digital form.

This teaming effort has made it possible on one side to provide Commercial Off The Shelves (COTS) affordable software tools. On the other side being able to offer mutual beneficial agreements for distribution of HO data, including update services.

Features

dKart Office is based on HydroService AS's™ Digital Hydrographic Office (e-HO) approach, meeting the specific requirements of nautical publications production as well as IHO S-57/ENC philosophy.

Using dKart Office implies working with familiar terms and symbols. Complex technicalities are hidden behind familiar procedures and there is need for only a few operators to have in-depth knowledge of the IHO standards.

dKart Office has powerful tools for testing manufactured products, securing their correspondence to the IHO standards requirements. The dKart Inspector is widely known throughout the industry and regarded as the industry standard for S-57/ENC test /validation.

With dKart Office the hydrographer has at hand a full set of administrative and operative tools designed exclusively for HO production and process control.

Purpose

With focus on production and maintenance the dKart Office suite provides the possibility to create final end user products for:

- Traditional paper charts and survey sheets
- Electronic Charts (ENCs, AML, Inland ENC, etc.)
- Lists of Lights
- Notices to Mariners
- Sailing Directions, etc.

When these products are produced from a dKart Office system set up to work in a network, they will all be synchronised. This implies, among other things, that product lines of paper charts and ENCs are synchronised and share the same data.

A comprehensive article on S-57 based paper chart production was published by HydroService AS in the August 2003 issue of The International Hydrographic Review.

Components

dKart Office system has a modular structure, where the individual programs are task oriented and configured for typical HO day to day operations. By combining different modules it is possible to select functionality matching any specific need. At the same time the overall functionality can always be upgraded by adding new modules/components to the system when required.

For example an "ENC Production Kernel"™ configuration (dKart Editor + dKart Archive) facilitates production and maintenance of electronic charts (S-57 ENC, AML, Inland ENC). The same system supplemented with dKart Publisher software additionally supports

creation and maintenance of paper charts.

Likewise, if digital charts have already been created according to IHO S-57 standard it is possible to employ dKart Publisher to produce paper charts.

Programs

- dKart Editor - production, QC/ validation and maintenance of ENC's (S57/3.x) and other chart products (AML, Inland ENC, etc.)
- dKart Publisher - compilation and preparation of paper charts and publications for publishing
- dKart WEB Server - ENC, NtM and Catalogue online publishing
- dKart Hydrographer - survey data post-processing
- dKart Product Generator - ENC packager into an exchange set of user-defined structure
- dKart Exchange Set Verifier - S-57 Exchange set verifier that covers both un-encrypted and encrypted exchange sets (Encryption based on IHO Data protection Scheme; S-63)
- dKart NtM Production System - Complete and fully integrated Notices to Mariners production system

Databases

- dKart Archive is a system of centralised cartographic data storage, where data are stored at all stages of production, beginning from the hydrographic survey data to creation of ENC and digital updates
- dKart FODB is a hydrographic database used for centralised storage of scale-independent objects information ("enhanced NavAids database")
- dKart Catalogue is a host system of chart catalogues and nautical publications

All components may be used either within the dKart Office or as standalone programs. dKart Office tools permit very sophisticated operations in an extremely user-friendly interface.

All programs are designed to work with Microsoft Windows NT4.0/2000/ XP operating systems; databases make use of Microsoft SQL Server 7.0/2000.

Industry Analysis

The nautical chart industry is a conservative industry with a history of two centuries of paper chart production and no more than a decade of digital chart production. It can be characterised by three main areas of operation:

- Data collection/management (new data and updates)
- Production (charts and updates)
- Distribution (charts and updates)

The cartographic operational features of dKart tools are always the same either if you work on paper or digital charts, facilitating the approach to the user in a WYSIWYG context.

The future will definitely favour development and use of digital charts. For HydroService it is nevertheless equally important to offer Hydrographic Offices the same sophisticated tools for producing paper charts. A generation shift is getting closer to include more than just being a digitised paper chart as the electronic charts develop. But until carriage requirements are changed by IMO the sensible approach for a Hydrographic Office is to link and synchronise the two ways of presenting nautical data.

Executive Summary

HydroService AS has been enjoying the active support of the owners since 1997. The project organisation has continuously increased and improved the necessary resources both human and technical in order to meet the nature and scale of the Company current projects.

The owner's dedication of making the company succeed with the mission of providing tools for Hydrographic Offices has secured the company a steady growth with continued positive results. Several hundred dKart licenses are used daily in national HO's and other government organisations like coast guards and NOAA.

Worth mentioning is that UKHO uses dKart for their ENC production. Quoted directly from UKHO 2002/2003 Annual Report: New ENC Production System. At the beginning of the financial year 2002/03, ENC production capacity increased by over 50 per cent. This was due to the replacement of the former production system with new dKart Editor Software from HydroService AS. The move has cut costs and overcome underlying deficiencies in the old system. The UKHO is now able to produce all types of ENC updates and issues new weekly editions for ENC's while simultaneously issuing corresponding Notices to Mariners and new editions for paper and ARCS charts. The new system has also widened the UKHO's capacity to produce and maintain ENC for other hydrographic offices. Hydrographic Offices of Countries like South Africa, Estonia, Italy, Norway, Greece, Malaysia, India, Ukraine and many others have already started utilising, partially or totally, dKart tools for their production.

Profits are reinvested in development of new products and markets. To secure long-term success the company is determined to continue to satisfy present market requirements identified by the nature of HO operations. At the same time the technology, with its modular structure is also applicable for a wider group of data producers.

Providing tools for nautical charts production is a rather specialised business and there are only a few companies worldwide who have identified it as a main area of operation.

HydroService AS focuses first and primarily on the needs of Hydrographic Offices. Even if the modular structure of dKart Office provides for a certain market diversification towards other government bodies and international port authorities the e-HO will still form the basis of future development.