

ENCs

At its 81st session, the Maritime Safety Committee decided to develop a strategic vision for e-navigation to integrate existing and new navigation tools in an all-embracing system that will contribute to enhanced navigational safety while simultaneously reducing the burden on the navigator. Electronic navigational charts (ENCs) form an important component of this system. This has made the coverage, availability and distribution of ENCs a subject of much discussion.<P>

Time and again there have been attempts by vested interests to denounce Electronic Navigational Charts (ENCs) as not being a viable solution to support e-navigation. False premises have been used to underestimate the production and coverage of ENCs, overestimate the prices and raise questions about the efficiency of the delivery mechanisms. All this has amounted to creating confusion in the maritime industry and putting roadblocks in the way of Electronic Chart Display and Information System (ECDIS) implementation. However, one look at the facts tells us a different story.

Det Norske Veritas (DNV) recently released a detailed and thoroughly researched report on the Formal Safety Assessment that studied the effect of ENC coverage on the risk-reduction capability of ECDIS. The report concluded that use of ENCs in conjunction with ECDIS can reduce the frequency of grounding by more than one-third on all major routes around the world and recommends that ECDIS should be implemented as a mandatory requirement on all types of vessels subject to certain criteria with respect to age and size of the vessels.

The conclusions are based on the evaluation of global traffic data for different ship types in relation to the actual ENC coverage in 2006 and projected coverage in 2010. A total of eleven specific ship routes, representative of global shipping traffic, were selected for this purpose and ECDIS risk-reduction potential was then assessed in light of the actual ENC coverage along these routes. Of these eleven routes, four already have 100% ENC coverage and, for five of the remaining seven routes, an increase in coverage is planned for the near future. According to the study, the global coverage of suitable ENCs in coastal areas currently lies between 84% and 96%, and is expected to increase to between 87% and 98% by 2010. The increase is only marginal, which accentuates the fact that ENC coverage is already quite extensive along coastal areas carrying a large share of global shipping traffic. The study also showed that full ENC coverage on a route would result in an overall reduction of 38% in grounding frequency. The results of the study prove that lack of ENC coverage is no longer a valid argument against introduction of mandatory ECDIS carriage requirements. The full report of the study was submitted to the International Maritime Organisation (IMO) as document NAV 53/INF and was discussed by the Safety of Navigation (NAV) subcommittee during its 53rd session in July 2007.

Based on the report from DNV and the proposal submitted by Norway, Denmark, Iceland, Finland and Sweden, the 17th International Hydrographic Conference endorsed a resolution in May 2007 supporting the efforts by the IMO to introduce mandatory carriage requirements for ECDIS. The resolution acknowledged that a significant coverage of suitable ENCs is already available and emphasised that the mandatory carriage requirements will further accelerate the production of ENCs. This resolution represents the interdependency between the introduction of mandatory ECDIS carriage requirements and the production of ENCs, and it is expected to facilitate the required capacity building in some regions of the world.

ENC coverage has already witnessed significant improvement after the DNV report was compiled. As mentioned in the report, the coverage estimates were based on a global ENC database of about 6,000 ENCs, of which 4,000 were being distributed by Primar Stavanger and the International Centre for ENCs at that time. At present, the combined Regional ENC Coordinating Centre (RENC) database contains over 6,800 ENCs. It has grown by over 40% in the past year alone, from 4,733 on 1st July 2006 to 6,824 on 1st July 2007.

Those who clamour about coverage and consistency of ENCs greatly underestimate the challenges faced in the early days and the progress made in subsequent years in terms of production and standardisation of ENCs all over the world. International standardisation entails a slow and lengthymultilateral approach. Moreover, setting up an ENC production system is a costly affair that proved to be a big challenge in the initial stages even for the hydrographic organisations in the developed countries with adequate resources. Therefore, the assumption made in the 1990s about a quick and easy establishment of global ENC coverÅage was nothing but a misconception based on optimism rather than realistic estimates.

Although there is some truth in the criticism of the appearance of the electronic charts and functionality of some ECDIS, the efficiency of the supply chain is beyond any doubt. All ENCs and updates in the Primar database are available 24/7 through a worldwide distribution network with a one-stop-shop solution. Issues regarding functionality and competing display systems are related to the standardisation process, which is being dealt with by the Worldwide Electronic Navigational Chart Database (WEND) committee and various working groups under the International Hydrographic Organization (IHO) Committee on Hydrographic Requirements for Information Systems (CHRIS) as part of the ongoing process.

There are two issues involved regarding licensing arrangements: flexibility in choosing coverage and flexibility in terms of subscription period. The distribution model employed by Primar takes care of the coverage issue by allowing selection of individual cells as opposed to units or folios in other distribution models where the end-users are compelled to buy additional cells they do not really need. Presently, three months is the minimum subscription period on offer, which gives the end-users a certain amount of flexibility in determining the usage time. Some distributors have built dynamic licensing systems based on three-month subscriptions. However, this is an area where there is room for further improvement.

The high cost of ENC's is perhaps the most exaggerated argument used to promote substitute products. When the cost of updating and renewing paper charts and the risk-reduction capability of ECDIS are taken into account, ENC's prove to be not only efficient but also a cost-effective option compared with paper charts.

Some of the Scandinavian nations have already established national ENC services in co-operation with Primar for navies, pilots and maritime administrations, thus paving the way for the use of a shared ENC database for integrated e-navigation purposes and thereby setting an example for other nations to emulate.

These are the results of nearly 20 years of hard work on the part of the IHO that is finally beginning to produce the desired results in terms of ENC production and coverage.

For the first time, we are witnessing the contours of a holistic solution, where both the IMO and IHO are agreeing on the main strategic goal of implementing ECDIS. The message to the IMO should now be a positive one reflecting the significant recent developments with regard to ENC production and improvements in global ENC coverage. It would require concerted efforts from all serious players in the ENC field. Any confusing statements would prove detrimental not only to ECDIS implementation but also to ENC production in regions where ENC coverage needs improvement. Therefore, it is crucial that the IHO defines the agenda for all discussions in the IMO with regard to ECDIS implementation and does not allow the issue to be hijacked by those committed only to commercial interests.

<https://www.hydro-international.com/content/article/encs>
