

Regional Centres for ECDIS

As far back as 1989 a provisional performance standard for Electronic Chart Display and Information System (ECDIS) was published and a final standard adopted by the International Maritime Organisation (IMO) in 1995 under resolution A.817(19). There are now many ECDIS systems on the market. Strong, co-ordinated international efforts are urgently required to manage and control this data.

The data transfer standard for the digital charts (ENCs) designed to be used on an ECDIS was published in 1992 as Special Publication 57 (S-57). In the same year, a special committee of the International Hydrographic Organisation (IHO) called the WEND Committee (from World-wide Electronic Navigational Chart Database) was formed to consider how to encourage the development and distribution of such ENCs in a co-ordinated and harmonised way. The Committee had its first meeting in 1995. It is believed that there are over 4,500 ENCs on the market today.

Current Reality

With this background, and racing a decade ahead to 2003, one could have been forgiven for thinking that the 2nd ECDIS Conference in Singapore would have heard testimony of the widespread use of ECDIS and ENCs and numerous stories of the advantages of using this new technology. Perhaps there might even have been general optimism for the future. However, this was not the case. In his paper "The Future of ECDIS" published last year, IHO WEND Task Group chairman Horst Hecht outlined the harsh reality that we still face and pointed to some of the problems at the root of the scepticism which still pervades the maritime community today. Whilst it was widely recognised at the conference that ECDIS re-presented a significant contribution to safe navigation, the remaining considerable barriers to its universal adoption were also highlighted.

The Lonely Voice

In a bid to understand these issues more thoroughly from the eyes of the end user rather than the hydrographic community, the organisers of the 2nd ECDIS Conference (the Maritime Port Authority Singapore and the UK Hydrographic Office) sponsored some independent research into barriers to the adoption of ECDIS. This, the Hailwood Report, which collected the views of both shipping companies and mariners on the bridge, confirmed that the maritime community continued to value ECDIS. In particular, the value placed on improved situational awareness, improved update efficiency and speed, and integration with other navigational systems on the bridge were identified as the main benefits and reasons for adopting ECDIS. However, a number of concerns were also confirmed, namely:

- lack of knowledge and understanding of the relevant carriage regulations, which are seen as complex and unclear, giving rise to low confidence in the long-term policy and commitment of IMO and IHO to ECDIS and ENCs
- incomplete coverage in many navigationally significant areas, and a reluctance to invest in dual systems (for example paper and digital) whilst the coverage remains incomplete
- the quality and consistency of the ENCs available not meeting customer expectations
- lack of suitable ECDIS training.

This obviously represents a genuine plea for help from the maritime industry and one that the international hydrographic community ignores at its peril.

What Next, Then?

In its recommendations the Hailwood report suggests the following:

- regulations need to be clear and globally communicated
- ENC coverage must be global and seamless
- ENC data needs to be quality assured
- ECDIS systems need to be user-friendly, with training available
- ENC pricing needs to be simplified and more clearly defined to the mariner
- the international hydrographic community needs to focus its resources upon reducing the mariner's workload and to adopt a policy of "ECDIS Safety through Efficiency".

Demystification

Following revision of SOLAS regulation V in 2002, ECDIS for the first time became recognised as meeting IMO chart carriage requirements. However, the wording of V/19 paragraph 2.1 was unfortunate, since it used the phrase "ECDIS may be accepted as meeting the chart carriage requirements". This was interpreted by many as a conditional statement, subject to approval on a national basis. Significant confusion has resulted, with some flag states yet to make clear their policies on the matter and others defining varying policies, particularly with regard to back-up arrangements. This variability has left mariners uncertain as to where they stand; there is also a lack of confidence regarding whether the policy adopted by one flag state will be upheld by port inspectors of another, as vessels move from country to country.

Added to this uncertainty, there is growing evidence of a lack of basic understanding of the differences between the various digital products and electronic display systems on the market, and how they each relate to the prevailing regulations. In particular, there appears to be a lack of appreciation of which products are in fact official charts and which are not. Recent evidence suggests that such poor understanding extended to national authority representatives, port controllers and even pilots. This is particularly worrying, and given this background it is not surprising that many in the shipping industry are reluctant to invest in the new technology. It is clear from the Hailwood report that the relevant regulations and status of the different products need to be communicated more clearly and more widely. And the need for this becomes urgent as the debate on mandating ECDIS gets underway in the corridors of IMO.

RENC Response

As operators of the leading Regional ENC co-ordinating centres IC-ENC (International Centre for ENC) and PRIMAR-Stavanger, and as joint authors of this paper, we recognise the important role we have to play in responding to this plea for help. We need strong, regional co-ordinating centres, collectively managing ENC data for the whole international community and working together to address the issues of product quality, consistency and distribution. Otherwise we simply do not stand a realistic chance of solving these problems within a timeframe acceptable to the end-user. In short, unless we find a way to turn the WEND principles into an efficient and effective operational reality, then we face the real risk of ECDIS and ENCs becoming permanently overshadowed by alternative, unofficial products.

The chairman of the PRIMAR-Stavanger Advisory Committee has taken the initiative of forming a working group to collate the relevant information and create a single reference manual on the subject. Given the importance of this work, IC-ENC was invited to join the working group to form what is now the "Joint Information Working Group".

The document entitled "Facts about charts and carriage requirements" has now been released and is available free from the websites of both RENCs. Written in an easy-to-read "question and answer" style, this guide provides answers to over twenty of the most commonly asked questions and comes with extensive annexes detailing the regulations in force today.

We hope that this new guide will act as a useful reference document for anyone involved in the production, purchase, regulation or use of electronic charts. The Joint Working Group will continue to expand and update the document to ensure it provides accurate information, and versions in French and Spanish are planned for release soon. Of course, it is one thing to have such a document available, it is quite another to ensure that those who will benefit from it are aware of its existence and can easily access it. We therefore encourage all national authorities, such as Hydrographic Offices, to promote the document nationally and play an active role in demystifying the whole subject.

Other Recent Developments

Based on instructions from the IMO Maritime Safety Committee, the IMO Sub-Committee on Navigation decided at its 50th session (NAV 50) to establish a Correspondence Group (CG) on ECDIS to consider, among other possibilities, the phased implementation of a mandatory carriage requirement for ECDIS for certain classes of vessel. This issue will be discussed further at the forthcoming NAV 51 meeting in June 2005, and proposals for this meeting include:

- consideration for amending SOLAS Ch.V Regulation 19 in Annex I to implement a phased mandatory carriage requirement for ECDIS
- consideration for amending HSC Code 13 in Annex II to implement a phased mandatory carriage requirement for ECDIS
- support for the IHO initiative to establish a comprehensive on-line catalogue of available official charts
- invitation to coastal Member States to consider which paper charts would meet the "appropriate portfolio of paper charts" in waters under their jurisdiction and where ENCs do not exist.

Concerted Effort

It is clear that only a concerted and consistent international effort involving relevant actors will lead us to success. The recent co-operation between IC-ENC and PRIMAR-Stavanger is a fine example of what can be achieved by working together. We now have a much clearer understanding of the issues facing us and therefore of what needs to be done. Although we still have a lot to do, the general direction and momentum for change is clearly building. Membership of the RENCs is steadily increasing, along with ENC coverage. The efforts of, and co-operation between, the RENCs in tackling the issues related to product quality, distribution and clarification of the regulation is beginning to show tangible results. And moves within IMO, in close co-operation with IHO, to actively support ECDIS and review the carriage requirements should be strongly supported by the hydrographic community. This clearly demonstrates that the time is now ripe for us all to start convincing the shipping industry to invest in ECDIS and ENC.