

THE INTERNATIONAL CENTRE FOR ENCS (IC-ENC)

Harmonising the Production of ENCs



The International Centre for ENCs (IC-ENC) was set up in 2002 with a remit to assist Hydrographic Offices in harmonising the production and distribution of high-quality ENCs. This is achieved through ENC validation and distribution processes, always with the mariner in mind. The recent launch of the IC-ENC ENC Validation training course formalises the provision of this knowledge and expertise to its members. IC-ENC has recently announced its 29th member, and its combined ENC folio now exceeds 5,000 ENCs.



IC-ENC is a Regional ENC Coordinating Centre (RENC), established to support the achievement of the IHO's Worldwide Electronic Navigational Chart Database (WEND) Principles. As a low cost, not for profit RENC and international centre of

excellence, IC-ENC operates to provide each member Hydrographic Office (HO) with comprehensive and independent quality assurance of their ENC data before it is distributed to the market. This is achieved through the provision of four main services to each HO:

- ENC Production Support
- Independent ENC Validation
- ENC Distribution
- ENC Revenue Management.

IC-ENC is lead by an independent chairman, who works closely with the IC-ENC general manager to ensure the policies and goals set by the IC-ENC Steering Committee are

achieved. All member nations can participate in the Steering Committee, as well as Technical and Commercial Working Group meetings, attended by both IC-ENC staff and specialists from the member HOs, which recommend policies to the Steering Committee.

At present, IC-ENC has 29 member HOs, with new nations joining on a regular basis. IC-ENC has 12 members of staff across two offices, the headquarters in the United Kingdom and a regional office in Australia. An additional office is being considered in Latin America to offer closer support to the members in this region.

ENC Validation

The IC-ENC Validation team operates to policies which are based on improving and maintaining a consistent ENC dataset for the mariner, rather than just ensuring conformance to international standards. This is achieved through defined working practices and specialised training. As a result, the IC-ENC Validation team have now completed over 70,000 ENC validations. The working practices set out the validation procedures and assessments, which include how the ENC will display and perform on an ECDIS. In addition, the IC-ENC technical manager contributes towards the improvement of the international ENC standards by frequently representing IC-ENC at IHO Standard development meetings.

The IC-ENC Validation team assesses an ENC's data structure against both S-57 and S-58 standards, through the use of several validation software tools, including SevenC's Analyzer and Designer, Jeppesen's dKart Inspector, and bespoke internal software. Each

validation software tool generates error messages, which are inspected and categorised according to IC-ENC's policy regarding the impact to the user. IC-ENC maintains the IC-ENC Errors Database; a database of validation tool errors, which provides an explanation of each error's meaning, significance and action to be taken. This is available to all IC-ENC members.

Consistency between neighbouring and overlapping ENC's is vital for safe navigation. However, it can vary for a number of reasons, particularly between producing nations. This is why the IC-ENC Validation team puts a strong focus on assessing the consistency of data, accounting for the purpose of the ENC, voyage routes, prominent navigation features and so on. In addition, an assessment is made to identify gaps or overlaps between adjoining ENC data. Gaps or overlaps in adjoining ENC data can cause serious problems for ECDIS users, so immediate remedial action would be required by the producing nation.

Each ENC is then visually assessed using two widely used ECDIS; eGlobe and Transas. The assessment includes checking the application of SCAMIN, clarity, and general usability of the ENC. Additional checks include the assessment of datums, compilation scales, additional text and picture files, and CATZOC suitability (values used to describe the quality of bathymetric data).

Following the validation of each ENC, IC-ENC members receive a comprehensive feedback report that highlights any data issues that could impact the mariner, along with recommendations for improvement. IC-ENC can offer further advice to the member if required, but does not edit any data. The responsibility for the ENC remains with the producing nation at all times.

ENC Distribution

Once an ENC has been accepted for release, IC-ENC makes it available to its Value Added Resellers (VARs). These VAR companies bring together ENC's from a variety of sources, and then supply ENC's to the users. IC-ENC retains just USD1 per sale of each ENC annual subscription to cover operating costs. The IC-ENC commercial manager is currently exploring options for use of the members' ENC data beyond just navigation. Proposals for using the ENC data in new ways will be presented to the Steering Committee meeting later this year.

Capacity Building

IC-ENC has recently launched an ENC Validation training course as part of a capacity building initiative. The course is available to all IC-ENC member HO's in order to enhance the level of understanding and ENC quality assurance amongst members' ENC production teams. The costs of participation (travel, accommodation and subsistence) are met from the central IC-ENC budget.

The training course consists of 12 modules, involving a variety of both theory and practical based learning exercises. The aims and objectives of the course are:

- To introduce course delegates to ENC Production and the roles and responsibilities of IC-ENC
- To provide course delegates with a detailed understanding of ENC Validation
- To provide course delegates with the knowledge and skills required to carry out ENC validation at their home ENC production offices.

The Future

IC-ENC is actively seeking to increase its membership, and therefore ENC coverage, as well as continuing to provide a valuable service to its members. This in turn will bring greater economies of scale to its operations, and further financial efficiencies, allowing IC-ENC to further reduce its USD1 cost recovery fee. Additionally, IC-ENC will continue to provide further training opportunities to its members, improving the understanding of ENC validation.