

12th SWPHC

RENC Operations and the Value of RENCs to the Mariner

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Regional Manager IC-ENC (Australia)

RENC Organisations

There are currently two RENC organisations



- The International Centre for ENC's is based in England, hosted by UKHO.
- A regional office IC-ENC (Australia) is in operation as a lodger hosted by AHO.
- PRIMAR is based in Norway, hosted by NHS

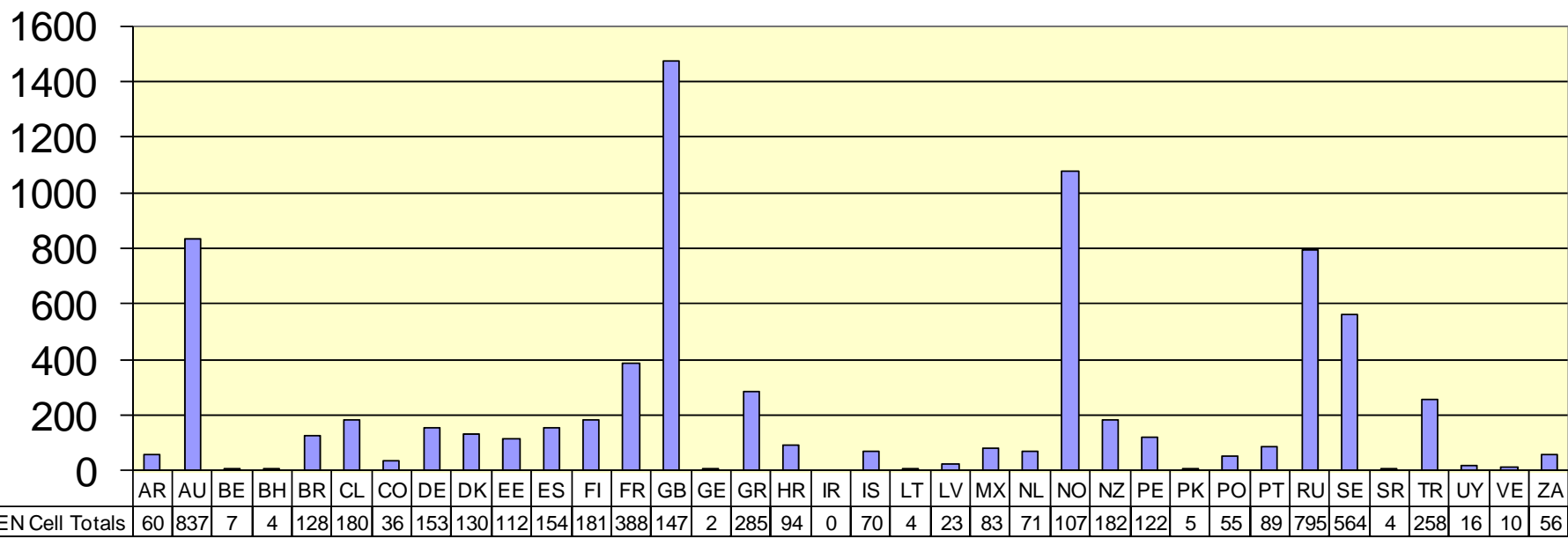
- Combined, **39** IHO member states are members of a RENC

Argentina,	Ecuador,	Lithuania	Romania
Australia,	Estonia,	Mozambique,	Russian Federation
Bahrain,	Finland,	Mexico	South Africa
Belgium,	France,	Netherlands,	Spain,
Brazil,	Georgia	New Zealand,	Sweden,
Chile,	Germany,	Norway,	Turkey,
Colombia,	Greece,	Pakistan,	United Kingdom,
Croatia,	Iceland,	Peru,	Uruguay,
Cuba,	Iran,	Poland,	Venezuela.
Denmark,	Latvia,	Portugal,	

RENCs represent more than half of the ENC producing member states.

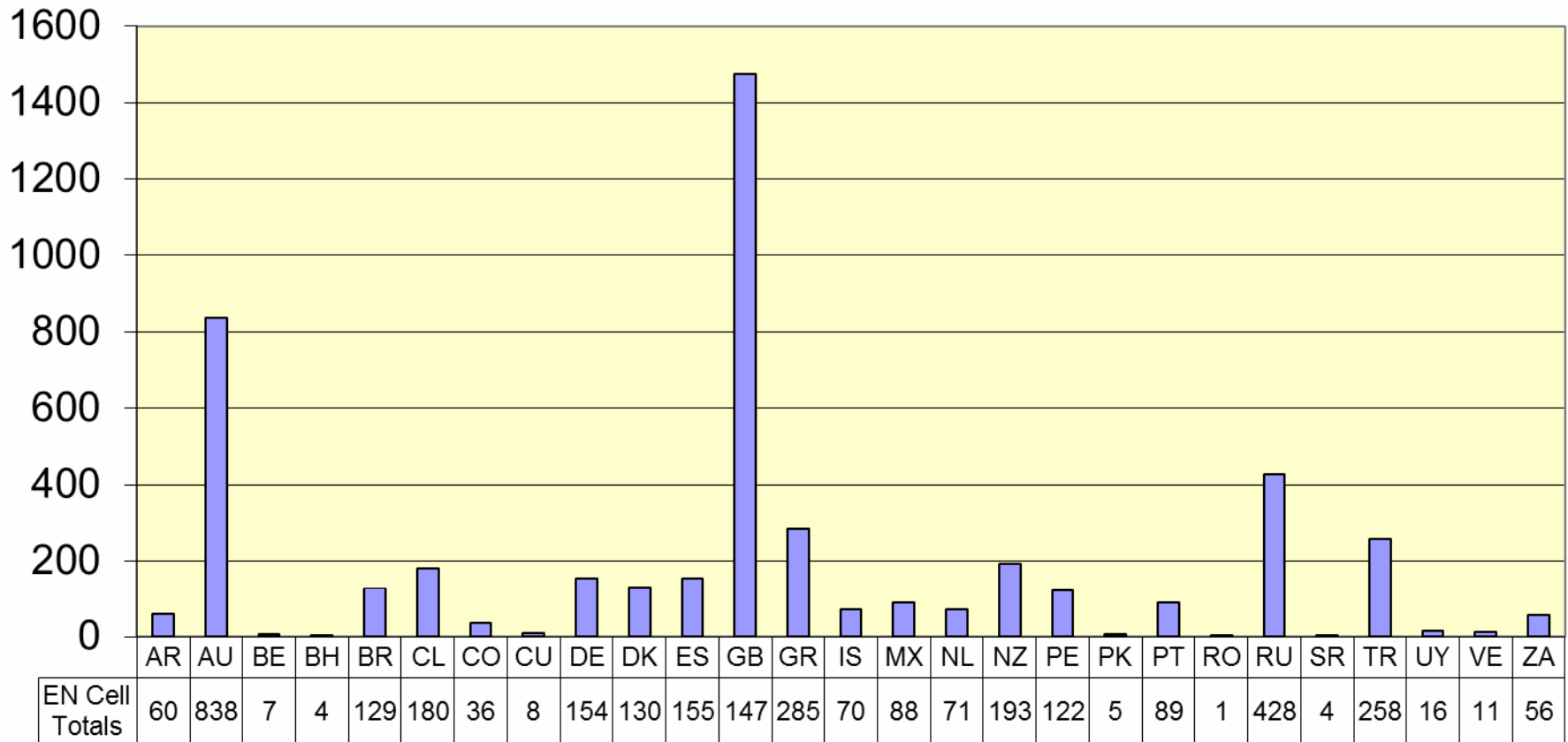
RENC Members Data

7710 Cells Available August '13



.... This is about two-thirds of all ENCs available

4872 Cells Available Week 45/2013



Benefits of RENC Membership

The benefits of RENC membership fall into 5 broad categories:

- Quality Assurance
- Shared Experiences
- Distribution - Established route to market for ENC's
 - Simplifies the financial management and legal agreements
 - Consistent licensing terms for end users
- Additional technical support and optional services to hydrographic offices
- Creating a seamless ENC product that is widely available through integrated services

Benefit - Quality Assurance

- S-57 Complex and open to interpretation
- An independent check reduces reducing liability by reducing the chance of errors
- Consistency checks against adjacent cells
- RENCs learn from seeing common problems across many producers ENC's and validation policies evolve to improve the ENC for the end user in conformance with the standards
- Feedback Report – to producer to improve product

Benefits – ENC distribution

For the ENC producer:

- Arrangements for international ENC distribution for RENC members ensures their ENCs are available to the international maritime community through a range of service providers to get the widest possible distribution

Benefits – ENC distribution

For the mariner:

- Distribution through the RENCs has a positive impact on availability and innovation in the maritime industry
- Provision to End User Service Provider (EUSP) of a worldwide *recognised* and *seamless** ENC database in a one-stop-shop, compliant with IHO standards, at the most efficient cost (a database in which the mariners have trust)
- * IHO strategic objective

Benefits – ENC distribution

- Distribution through RENCs ensures harmonised terms and conditions for service providers
- ENC's distributed through the RENCs have been checked to ensure they meet SOLAS chart carriage requirements (as **official** type-approved data) when used in ECDIS with appropriate back-up
- ENC's are supported with an update service

RENC Co-operation Programme

- IC-ENC and PRIMAR RENCs have an ongoing commitment (through their governing bodies), to:
 - Promote closer co-operation between the RENCs at the strategic level
 - Harmonize RENC policies (technical and commercial)
 - Increase RENC membership
 - Active participation in the WEND WG – RHSG

RENC Description Documents

- IHO CL 05/2012 circulated descriptions of each RENC
- “The WEND principles encourage Member States to distribute their ENC's through a Regional ENC Coordinating Centre (RENC) in order to share in common experience and reduce expenditure, and to ensure the greatest possible standardization, consistency, reliability and availability of ENC's.”

IHO CL05/2012 continued

“RENCs are also intended to facilitate co-operation between Member States to resolve overlaps and gaps in coverage, ensure compliance with encoding standards, provide a world-wide consistent level of high quality ENC data and support the provision of co-ordinated end-user services for ENC's.”

Please refer to published Description Documents for details of



PRIMAR[®]

ic-enc.org
International Centre for ENC's

- **Regional ENC Centre, operating in accordance with the IHO World ENC Database Principles**
 - Validation of ENC to S57 Standards
 - Harmonisation of ENC Cells for consistency,
 - Distribution through a global network
- **A low cost, 'not for profit' organisation whose operating costs are covered by a small levy on each ENC sale (currently \$2.00 falling to \$1.00 in 2014)**

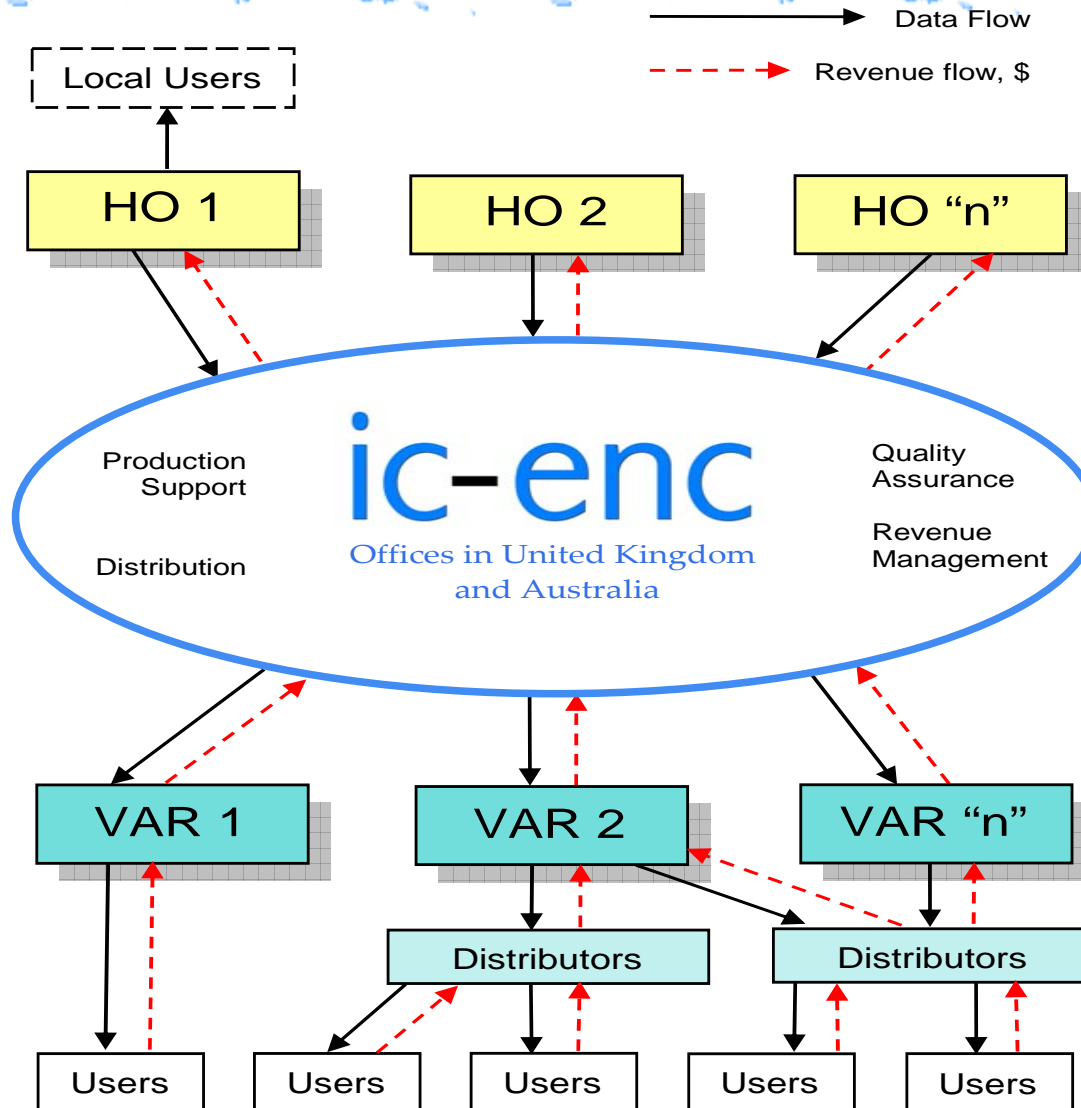
IC-ENC

- IC-ENC goal is to support safe navigation at sea
- Independent ENC quality assurance service; encoding, edge matching, gaps & overlaps
- Supply path to market for its members' data (Value Added Reseller (VAR) network – also called End User Service Provider)

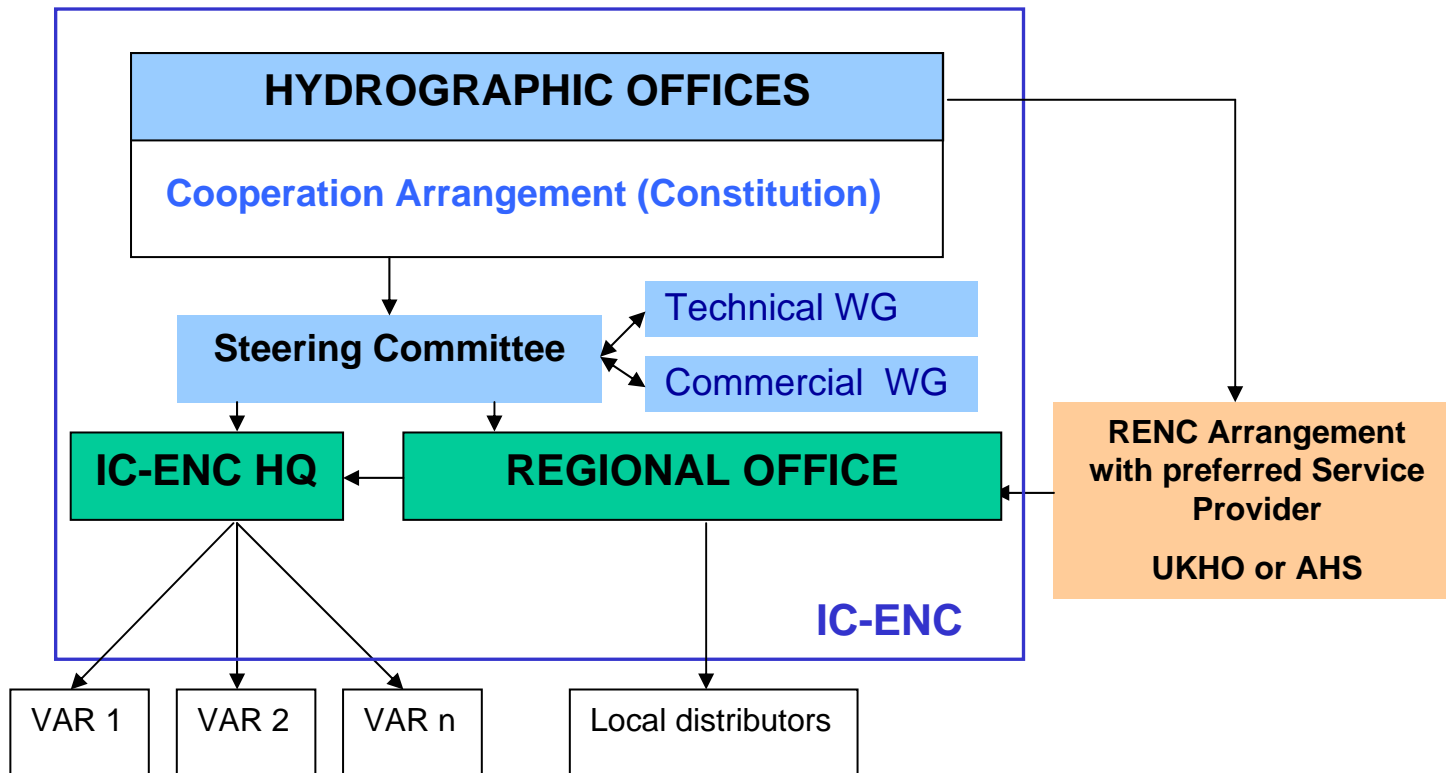
IC-ENC services

- ENC Validation
 - Centre of expertise, user impact assessment
- Production Support
 - Visits, email, phone, Errors Database
- Distribution
 - Range of competing services
- Revenue Management
 - Sales reporting, financial settlement

Functional Model



IC-ENC Organisational Structure



IC-ENC Administration

- IC-ENC is an independent not-for-profit organisation (legally an unincorporated association)
- Our Chairman is elected by the members
- Strategy and policies (such as RENC fees, scope of work, future direction of the organisation) is set by the Steering Committee

IC-ENC / Host Relationship

- IC-ENC HQ is located at the UKHO in Taunton which provides all of IC-ENC Headquarters' infrastructure, such as office accommodation, facilities, and information technology on a cost recovery basis. The host also supplies members of staff to IC-ENC, who work on a full-time secondment basis.
- The UKHO charges IC-ENC full costs for these services
- IC-ENC (Australia) is a regional office operating from the AHO as a lodger hosted by AHS - financed by IC-ENC HQ.

ENC Distribution



Some Technical Details of Interest?

Validation Software

- dKart Inspector
- 7C's Analyzer
- 7C's Designer

- Transas NaviSailor & ChartWorld eGlobe ECDIS Checks
- DMD - Load & Test Logs

- Supported by:
 - IC-ENC Work Procedures
 - IC-ENC Errors Database, a database of error messages includes their meaning, significance and what action may be needed to correct the problem
 - IHO Publications – UOC, Product Specs, Encoding Bulletins.

Validation process

- Loaded into both dKart Inspector and Analyzer, Designer, Tests run.
- DMD sorts the error messages and they are then displayed in the summary file
- Base cells complex
- Updates straight forward... but can be problems.

What is the Errors Database?

- Used by IC-ENC validation team and for member HO production teams
- Tests from dkart and 7Cs validation tools, internal IC-ENC errors, ECDIS
- Classified by the impact upon the user
- Single categorisation – Data Management Database
- Multiple categorisation – manual checking of each error

Error Database Categories

- **HO TO CORRECT**
 - potentially dangerous
 - correct before release
- **HO TO CHECK**
 - impossible to determine without access to source data
- **ACCEPTABLE**
 - no impact, do not reduce the utility of the product
 - HO can select whether or not IC-ENC reports these errors
- **ERRONEOUS**
 - S58 error message reported due to insufficient refinement of test
 - HO can select whether or not IC-ENC reports these errors

Use Of ECDIS

- Import Issues
- Loading Issues
- Clutter at Compilation Scale
- Application of SCAMIN
- Update Application
- Consistent Display with adjacent data (both horizontal and vertical)

ENC Consistency Checks

- IC-ENC carries out specific checks to make sure that ENC's are consistent with each other, striving for a seamless product for the mariner.
- IC-ENC does not carry out verification checks against the source data.

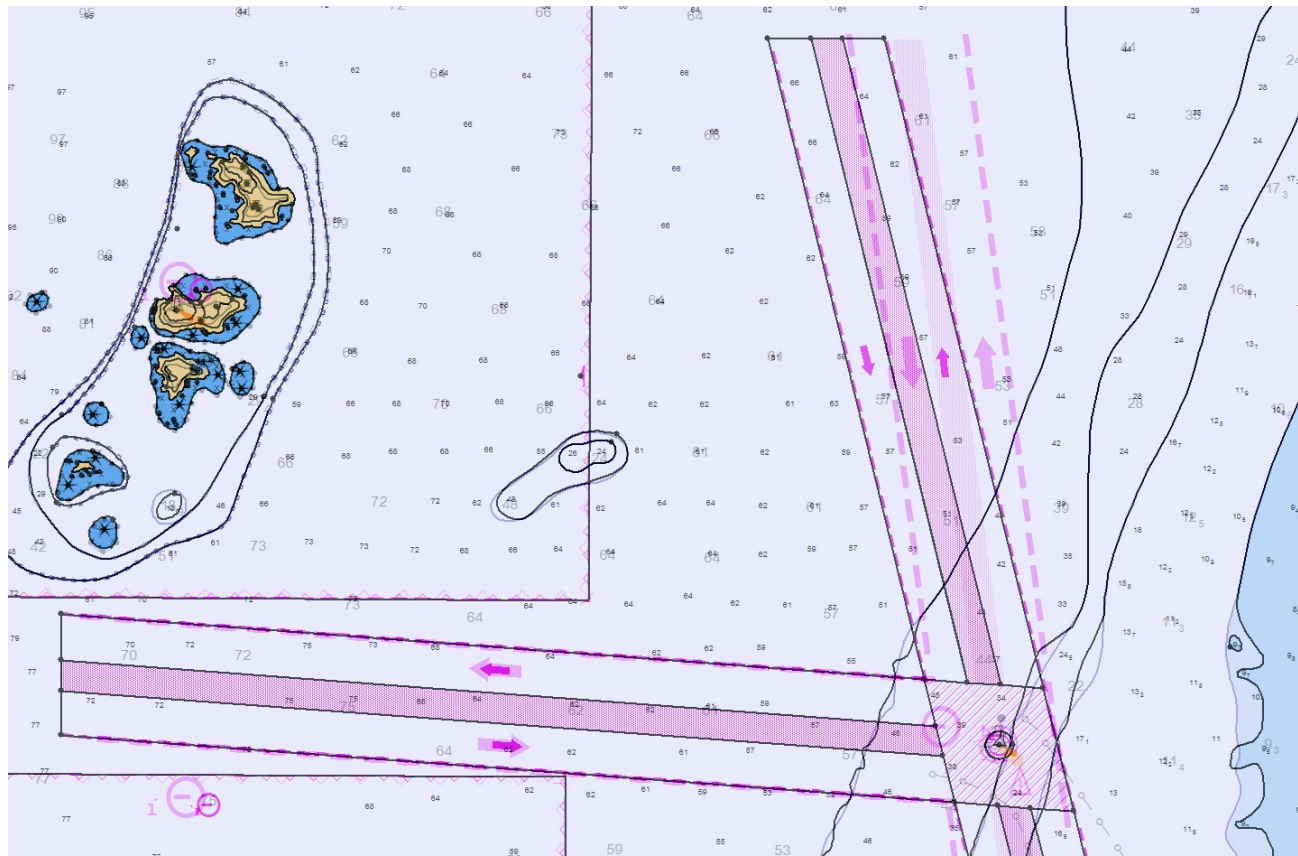
Gaps and Overlaps

- Can occur between adjacent ENC's with same compilation scale.
- Gaps – cause ECDIS problems.
- Overlaps – may cause lack of confidence in the product.

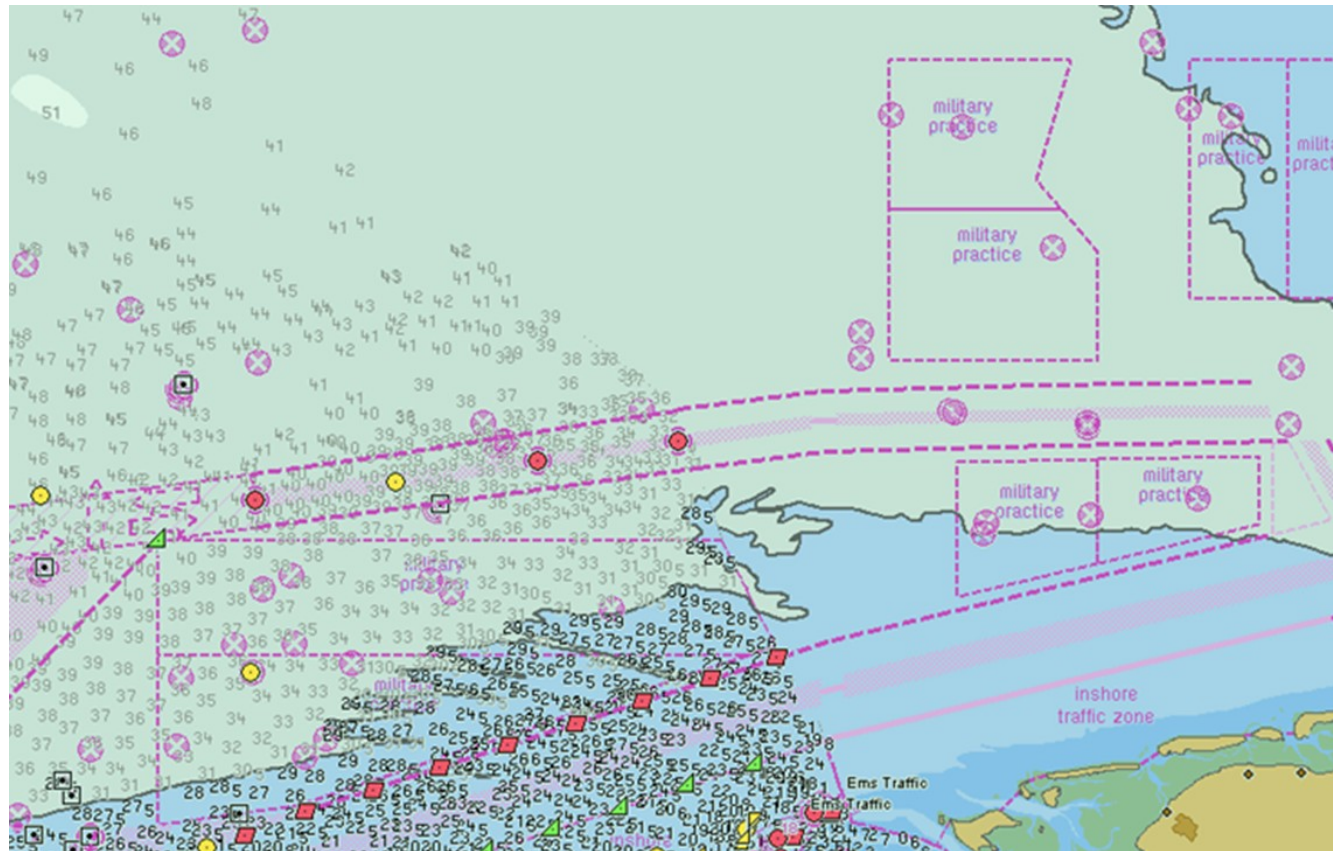
Horizontal and Vertical Consistency

- Horizontal checks – carried out between adjacent ENC's with the same compilation scale.
- Vertical checks – carried out between overlapping cells with different compilation scales, that is, adjacent Usage Band ENC's.

Traffic Separation Scheme (TSS) anomaly



SCAMIN applied to soundings differently in adjacent ENC's



How Else Does IC-ENC Help?

- Incorporating Feedback from VARs and Mariners
- Provides Technical support to Members
- Commencing Stage III CB activities
- Technical Experts Working Group (TEWG and JTEWG)
- Participation in IHO Committees
 - WEND WG
 - Transfer Standard Maintenance and Applications Development Working Group (TSMAD)
 - Digital Information Portrayal Working Group (DIPWG)
 - Data Protection Scheme Working Group (DPSWG)

Conclusion

- RENCs help the mariner; improving safety of navigation by increasing quality, consistency and availability of producer HO's' ENC's
- RENCs help the IHO by contributing expertise to development of standards and specifications through technical Working Groups
- RENCs help producer HO's by providing technical support, reducing liability by reducing the chance of errors and increasing their revenue as their data is available through more distributors

Final Word

- Please read the RENC Description Documents in IHO CL05/2012
- If you want any further information –
 - Contact us at:
therenc@ic-enc.org

Questions

ic-enc.org
International Centre for ENC's