



5th Meeting of the World-wide ENC Database Working Group (WENDWG)

Agenda Item WWG5-05C

INF1- Considering A Systematic Approach to ENC Schemes

by

Canada

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Overview – Why of Interest to WENDWG

- In the future, the ENC is likely to become the predominant form of nautical chart used by the SOLAS shipping community (IMO-ECDIS)
- ENC quality, coverage, accessibility and distribution are within the mandate of the WENDWG to monitor and provide guidance:
 - Increase IHO awareness of evolving need for adopting unique ENC schemes
 - Guide IHO in need for increased client awareness ENC coverage and accessibility
- WENDWG is implicated in IHO interest for ENC schemes:
 - **Action WENDWG2/11 – USCHC** to intervene on behalf of WENDWG to HSSC4 on the interest on investigating ENC scheme in conjunction with the NSHC ENC harmonization group.
 - **CSPCWG Work Programme B.3:** Develop guidelines for preparation & maintenance of small/medium scale ENC schemes (remarks keep WENDWG engaged)

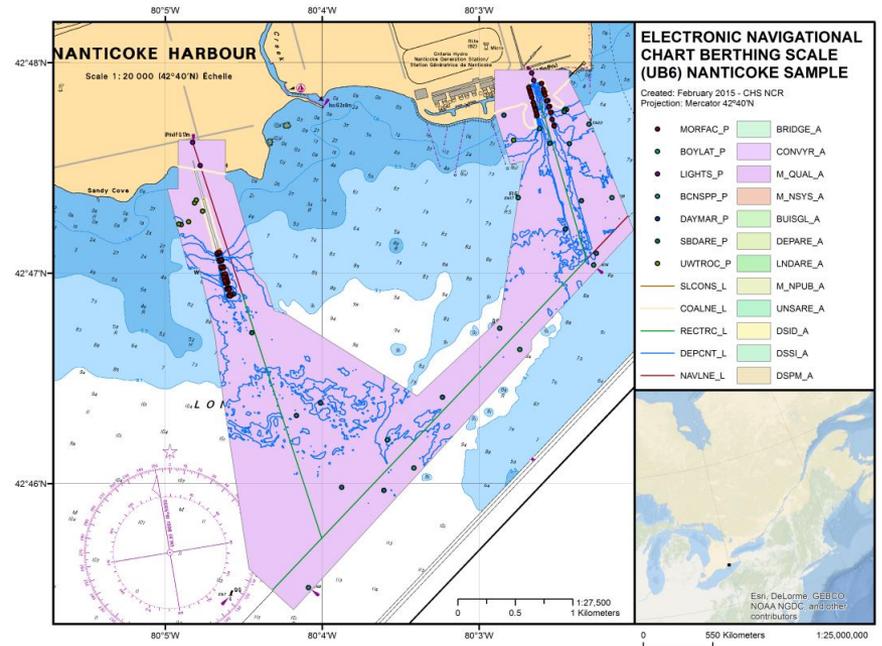
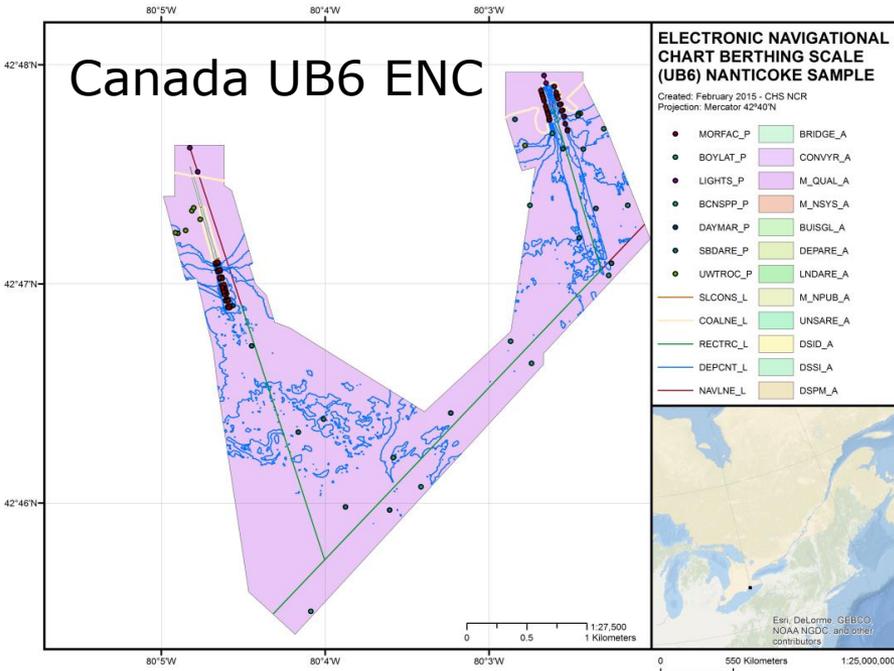


Analysis-Why Paper Chart Schemes Are Not Adequate

- ENC alignment with paper chart limits and portfolio is not likely to be sustained or even desirable
 - No ENC overlaps forces divergence from paper
 - Very large scale (berthing) ENC have limited value in paper
 - Data/product management and access through database technology is future of ENC cells but not paper charts
 - E-Nav access to ENCs are likely to follow a different thinking than was tradition paper chart access
 - Consider legal implications of confusion between a paper and ENC coverage



Analysis- Very Large Scale ENC Not Well Suited to Paper Chart Presentation



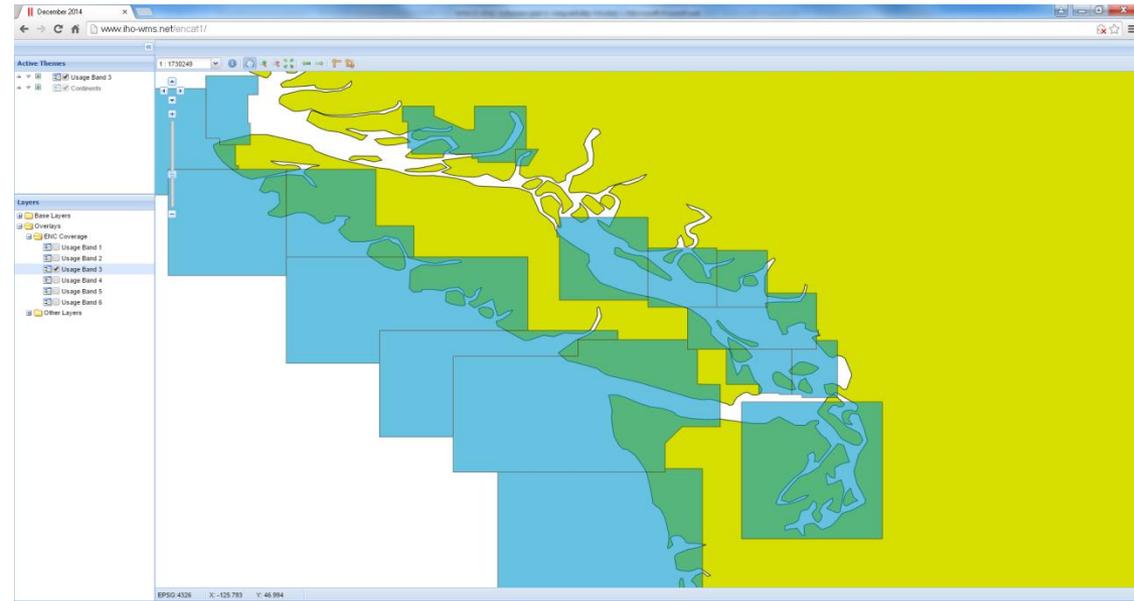
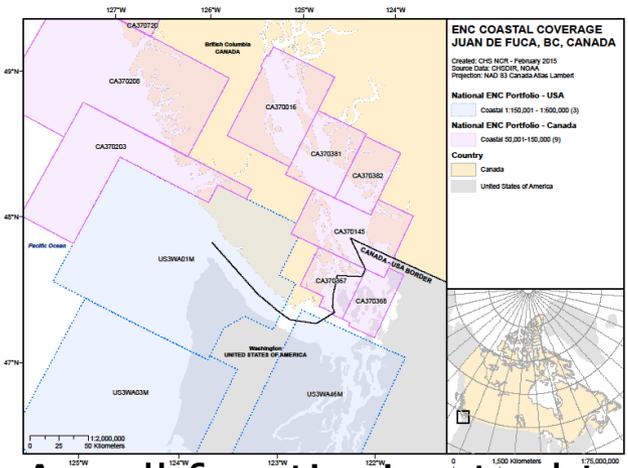
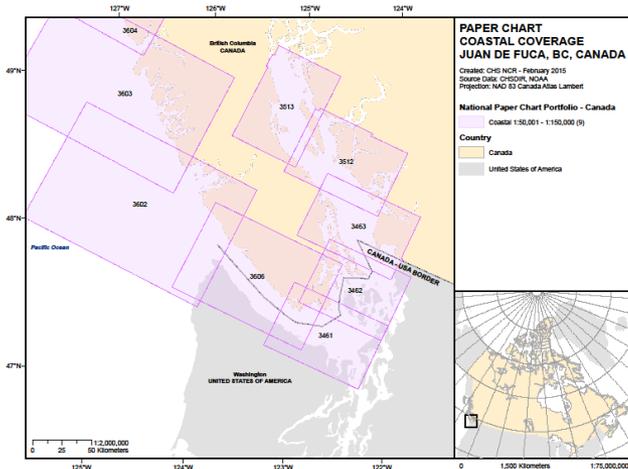
Canada berthing ENCs (UB6) is $\geq 1:2,000$ and IHO is $\geq 1:4,000$.

Many of the cartographic details associated with a paper chart can be excluded completely at a berthing scale ENC which is more focused literally on the berthing wall of a terminal.



Analysis- Access

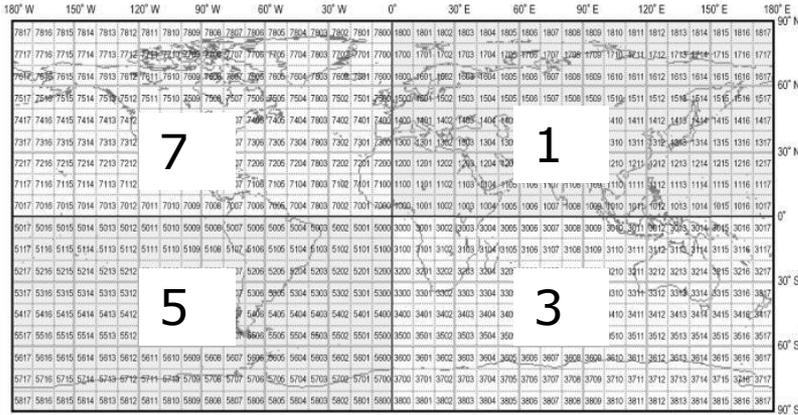
IHO ENC Catalogue



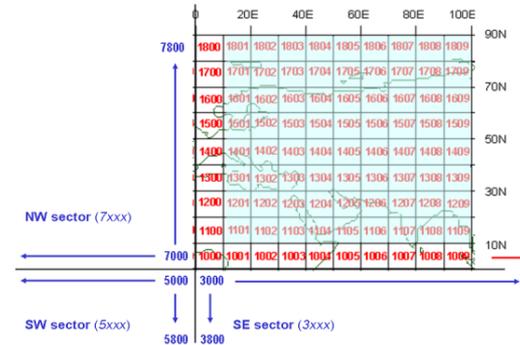
A well functioning tool to communicate an ENC scheme (catalogue) has significant benefits to a user rather than relying on a translation of a paper chart catalogue



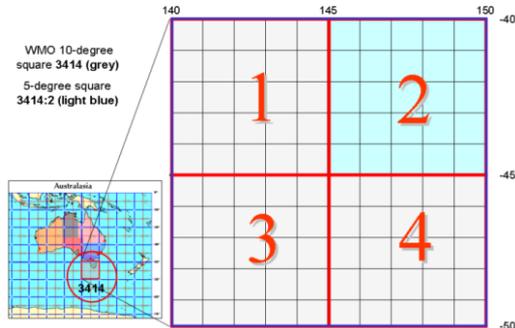
Analysis – Consider Existing Models



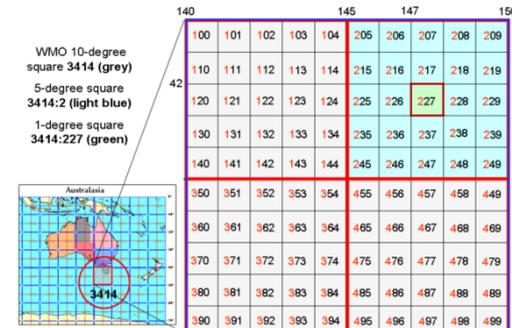
WMO 10-degree squares notation principle



nomenclature for 5-degree squares - e.g. in SE sector.



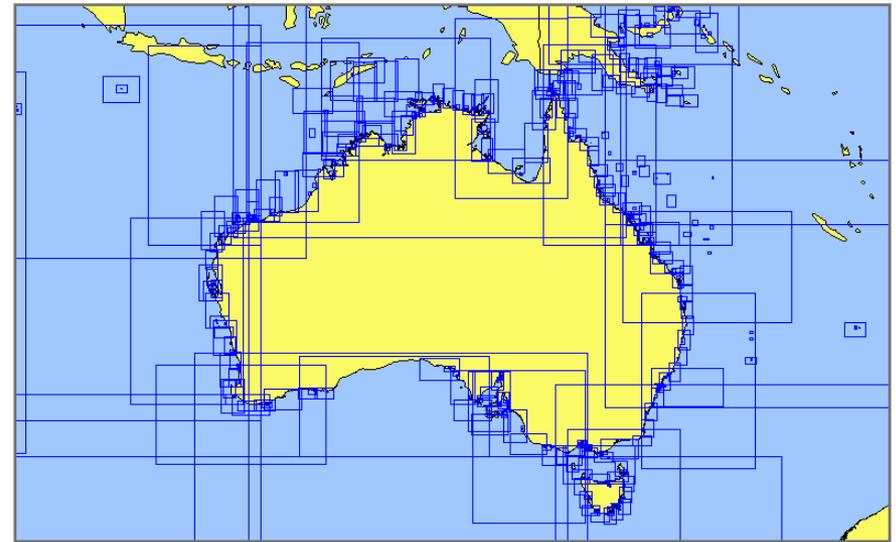
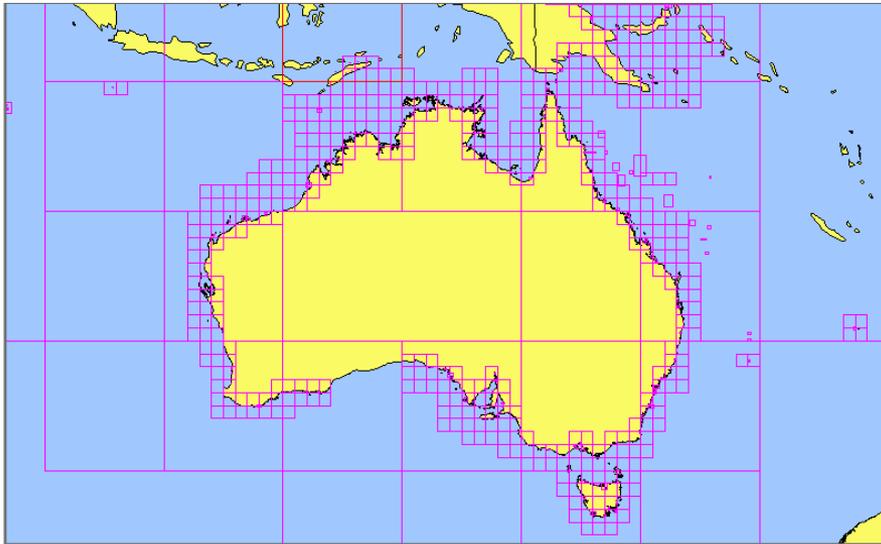
nomenclature for 1-degree squares - e.g. in SE sector.



Note: All images from HSSC1-06.1C_Grid_referencing
World Meteorological Organizations approach to a 10-degree global grid
square notation



Analysis – Relative Simplicity of Gridding



Note: Slide references: HSSC5INF7_Future_demand_for_paper_nautical_charts
“The comparison of ENC and paper chart schemas clearly shows the relative simplicity of the regular grid system.” quoted from the Australian HSSC5INF7



Analysis – Opportunities to Implement

Ideal Conditions for Considering Grid-Approaches

- S-100 implementation may present opportunity
- Uncharted areas where ENC coverage is not yet created (e.g. Polar regions)
- Implementation of a new product line such as S-102 (approach considered in Canada)
- Given range of products and Producers that may enter the realm of S-100 there may be benefit to a gridded-approach that could be adopted by various Producers of auxiliary information layers

Example of a level 2 (coastal) tiling scheme for the St. Lawrence River, Canada (published IHO Hydrographic Review 2012 November)



Observations & Opportunities for Discussion

- Potential opportunity for WENDWG to advance IHO interest in knowledge and guidance in ENC schemeing through its own mechanisms and authorities
- Potential opportunity for WENDWG to liaise with HSSC to research and incorporate some guidance on ENC schemes or grid-approaches in IHO Technical Standards (i.e. S-11 Guidance INT Chart Schemes, S-65 Guidance ENC Production, Maintenance & Distribution)

Thank You