

3rd NCWG MEETING**ESRI HQ, Redlands, California, USA 16-19 May 2017****Paper for consideration by the Nautical Charting Working Group****Larger scale ENC data limits on Paper Charts***Submitted by: Australia(AHS)**Executive Summary: Assess the benefit of depicting some larger scale ENC data limits on Paper Charts**Related Documents: S-4, INT-1 and INT-3**Related Projects:***Introduction / Background**

The AHS is fully committed to the 'ENC first' approach and has identified some areas where larger compilation scales can bring benefits to some type of vessels but only when navigated digitally (e.g ECDIS with an ENC and ship's position plotted automatically).

This realisation ended up with the publication of some geographic areas in S-57 format only (usually at large/very large compilation scales).

Some examples are:

- AU6 bathymetric ENCs (bENC) along areas currently shown as dredged areas in the existing AU5 cell and its 'corresponding' large scale paper chart.
- Using M_CSCL meta objects within an existing ENC originally created to be a one to one copy of the existing paper chart/s in the area. This is done for different reasons such as improving berthing, facilitating cruise ship navigation in remote areas, facilitating access of small crafts to cyclone anchorages up a river, etc.

All the data in the ENCs is 'consistent' with the one depicted in the largest scale paper chart (e.g least depths, contours, etc) but the new or improved cells contain data that can only be of use if utilised by a different type of navigation (digital vs traditional).

Analysis / Discussion

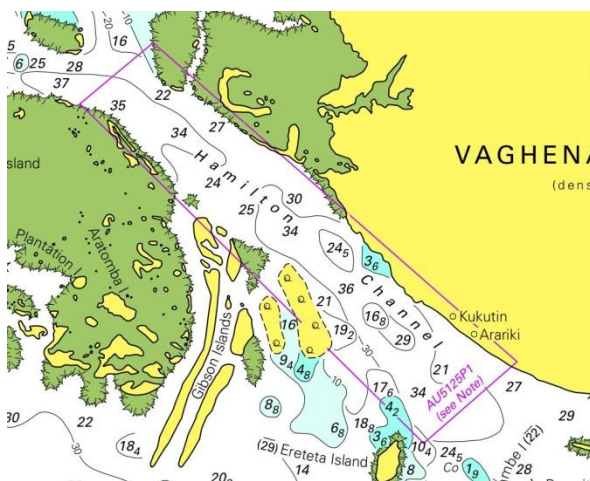
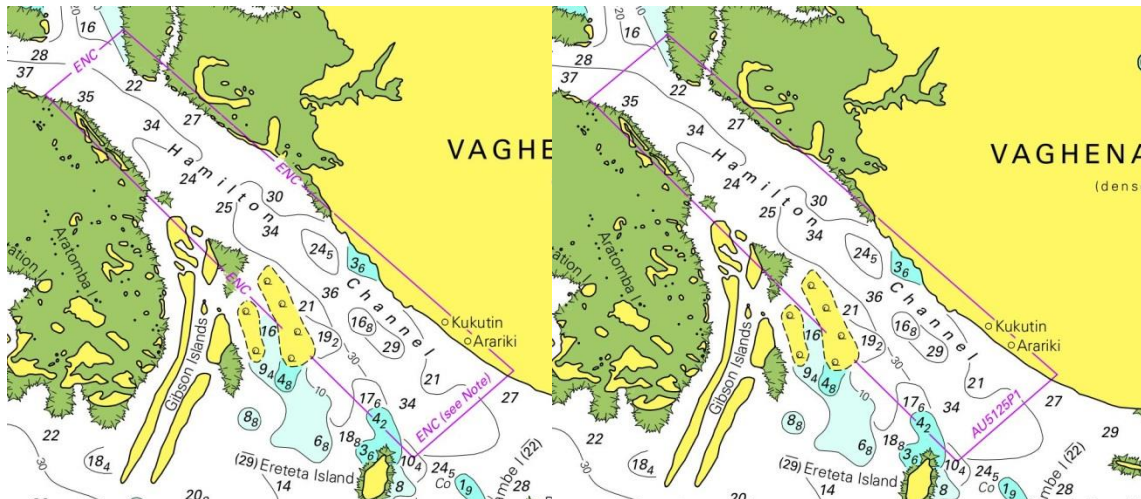
It is a fact (supported by statistical data) that paper chart selling numbers are decreasing and that ENCs are taking over that space.

The IMO's mandatory carriage of ECDIS now in force, an increased number of countries with their portfolio already in S-57 format and the undeniable benefits of the ENCs when compared with their 'corresponding paper chart equivalent' is calling for a new type of ENC which does not need to 'match' the paper chart anymore.

An increasing number of mariners are well educated on the use of ENCs and what they can deliver and they are asking for customised 'fit for purpose' products.

If HO's want to follow this path they will need to 'break' the link with the paper charts (although it will bring production nightmares for some) and really start thinking ENC first (and maybe 'ENC only').

Some possible ways of depicting areas with more detail within existing ENCs or in 'standalone' ENCs (without a paper chart equivalent) could be:



ENC
 Within the limits shown on the chart larger scale detail is available in the largest scale ENC covering the area.
 The data shown in both products (paper and ENC) is consistent but ships restricted by their depth or size may benefit from the additional data shown in the electronic version.

Conclusions

The AHS is now compiling new ENCs or larger scale areas as M_CSCL meta objects within existing ENC products which do not have a paper chart equivalent. As the number of these geographic areas increase with time the AHS is assessing the value of showing their limits in the largest scale paper chart in the area.

The AHS would like the NCWG to discuss the topic, involve as many stakeholders as possible and provide feedback.

Justification and Impacts

Depicting in paper charts the limits of areas charted to larger compilation scales in S-57 format only is seen as an important decision making tool for mariners.

It will be up to the master of a ship (based on the type/size of the ship and/or the characteristics of the area) to switch from one type of product to the other. For example a 220m long, 11.8m draft, 30m wide tanker may benefit from the one metre contours depicted in an AU6 ENC while sailing through a 90m wide, 12m deep approach channel with some 'tricky' turns but the same product would be completely irrelevant and unnecessary to have for a 95m long, 8.5m draft, 15m wide bulk carrier transiting the same area.

Recommendations

Asses the benefit and discuss options on how depicting ENC limits on paper charts.

Actions required of ENCWG

a. Note, discuss and recommend actions based on the content of this paper.