10th Meeting of the Standardisation of Nautical Publications Working Group (SNPWG)
23– 27 February 2009, NOAA, Norfolk, Virginia

Portrayal of Nautical Information

30 January 2009

Background

The SNPWG has now developed the NPUBS Feature Data Dictionary (FDD) sufficiently to allow the creation of some test data. The next step beyond that will be to consider how this information can be presented to users.

Nautical information

Nautical information is defined here as the information typically found in Nautical Publications. Broadly speaking this includes most of the planning publications:

a. Sailing Directions, Coast Pilots and their companion books such as Bowditch, Australian Seafarers Handbook, Guide du Navigateur and The Mariner's Handbook.

b. Tide Tables and their companions Tidal Stream Atlases and Co-Tidal Atlases

c. Lists of Lights (possibly)

d. Lists of Radio Signals

e. A special group of charts might also be considered: Routeing Charts and Routeing Guides.

Astronomical publications for celestial navigation are not included.

This paper will look at how various types of information might be displayed. It will also suggest a procedural approach within the working Groups of the IHO Hydrographic Services and Standards Committee (HSSC).

Format of information

The symbols used on nautical charts are defined in Chart Specifications of the IHO. Similar conventions have been used for ENCs. There is no equivalent symbol set for nautical information. Most of the information in books is provided in one or more of the following forms:

Prose using fully formed sentences and paragraphs;

Text using incomplete sentences;

Lists;

Diagrams. A special class of diagrams are chartlets in all scales covering the area of the whole world down to single berths;

Photographs;

Tables;

[There may be others]

Diversity

The subject matter in all the books is far more diverse than is found on a chart. The SNPWG could have analysed the information in different ways but during the Scope exercise in 2004-5 the following thematic areas were chosen:

Environment

Harbour infrastructure

Hydrography

Navigation marks

Social and political

Topography

Traffic management

Reference.

Publications also contain regulation, cautions, advice and experiential information.

Classes of information

The number of types of information in all the various nautical publications is huge; certainly hundreds and possibly thousands. It may be appropriate to portray the information in digital products using the same familiar styles used in books. However there may be far better ways to draw information from a database and to display it in novel ways. Animation should be possible and may be valid for some dynamic effects.

Scale

The same type of information is often provided in multiple scales, just as charts are provided in multiple scales. In fact the scales are broadly similar:

General information, often at a continental and oceanic scale;

Regional information, which might be equivalent to coastal charts;

Approach for entry and departure from ports and for navigations in shoal water or narrow passages, not associated with ports;

Detailed information about ports, terminals including background information about ports, which is not directly associated with navigation.

Predominance of text

The task of displaying nautical information through an ECDIS is not the same as the task of 10 or 15 years ago of finding ways to display charting information through an ECDIS. The challenge then was to convert chart symbols into a database and then to display roughly the same symbols on a computer screen. Most information in books is in text. It is occasionally supported by graphics including symbols. It is likely that most nautical information will still have to be displayed as text in some form. There are not enough symbols to portray every type of information and even complex symbols could not convey the precise meaning of a carefully drafted sentence or paragraph. To attempt such an approach would inevitably lead to loss of clarity and precision. Even simple navigations aids like light-beacons and light-buoys need coded text to convey all their characteristics, when portrayed on paper or ECDIS. Therefore the work ahead for the HSSC will be to create the standards to provide access to textual nautical information simply, and efficiently; effectively that means as intuitively as possible.

Avoiding clutter

It is not expected that the rules for the use of space on ECDIS displays will change significantly. Mariners will continue to value an uncluttered chart display when executing a voyage. Some nautical information could be displayed in pick reports. However it is probable that extended nautical information, if requested, may have to be displayed at another display. A combination of menus and search tools will need to be investigated. Searches are likely to start with subjects like traffic management, pilotage, ports, tide and tidal stream, climate and weather.

Planning station

However during passage planning, temporarily covering some parts of the chart display by nautical information will be inevitable and should not be prevented; and much of the current information displayed on the side or at the foot of an ECDIS about today's real time situation will not be required.

Multiple windows

The contemporary office practice, of having multiple windows open with many of them minimised, is expected to be the norm for future electronic passage planning. Similarly, just as internet connection in office work stations is the norm today, so will internet connection become the norm at passage planning stations. It is not correct for

the SNPWG to make recommendations to the HSSC on these standards in isolation. The subject experts in this area used to be in the Colours and Symbols Working Group (CSWG).

Procedure

During CHRIS 20, there was a short discussion about revised Terms of Reference (TOR) for the Colours and Symbols Working Group including a new name, the Digital Information Portrayal Working Group (DIPWG), which was approved by CHRIS. The DIPWG is the working group, which is best placed, to advise the HSSC on the detail of how to portray the combination of ENCs and nautical information within ECDIS. It is therefore proposed that the SNPWG should work with the DIPWG to put a paper to the HSSC in November 2009 to clearly express this idea of joint working. Draft revised TORs for the SNPWG and DIPWG are at the Annexes.

Conclusion

It is concluded that the way ahead is to discuss the ideas in this paper at SNPWG 10 in Norfolk and incorporate the further views of Members. We should engage with the Chairman of the DIPWG so that the DIPWG can agree these revised TORs at their meeting Ottawa in May. Thereafter we should put proposed revised Terms of Reference for both groups to HSSC1 in November 09. In order to be successful, it will be essential to bring the DIPWG with us and it will also be important to convince the Member States representatives in TSMAD and the HSSC.

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Chairman, SNPWG

Annex A: Proposed revised TORs for SNPWG
Annex B: Proposed revised TORs for DIPWG