

IHO Colours & Symbols Maintenance Working Group (C&SMWG)
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Mathias Jonas
Chairman of C&SMWG

Hamburg, 18. Apr. 05

Comments on Circular Letters distributed by CSMWG in 2003/2004

Dear Andrew,

Based on comments I received from various members of the C&SMWG and with my own opinions added, I would like to reply to following Circular Letters:

1. CL 4/2003 ESSA

The Annex D of CSMWG CL 04/2003, originally submitted by Australia contains valid analysis of the current situation. Harmonisation of symbology between paper chart and ENC display is highly desirable, however due to the different approaches to display hydrographic information, cannot be reached in all cases. Further to this, the counter-arguments of the chairman of CSMWG are acceptable as well.

From the perspective of coding and presentation of PSSA for the purpose of ECDIS the following facts have to be taken into consideration:

- The object catalogue of S-57, Ed. 3.1 currently in force, does not contain special objects representing such areas. Potential new objects will not be available before Edition 4.0 of S-57 becomes ready. The (optimistic) assumption for the publication of Edition 4.0 is reported as 2006.
- As stated in Annex E of CSMWG CL 04/2003, As an interim measure, PSSAs will be encoded in using the S57 E3.1 object "Restricted Area" (Code: **RESARE**), with the associated S-57 attribute "Category of Restricted Area" (Code: CATREA) being set to the value "ecological reserve" (Code: 23) and the S-57 attribute "Information" (Code: INFORM) containing the text "Particularly Sensitive Sea Area (PSSA)".
- As an interim measure, the limits of PSSAs will be displayed on ECDIS by means of the IHO symbology used for the S-57 object "Restricted Area" (Code: RESARE), as follows:

IN 2.1
(magenta)



- The information contained in the associated attributes INFORM and/or TXTDSC can be accessed by the mariner through cursor picking. The relevant text will be displayed in a window on the ECDIS screen.

The introduction of special symbology for PSSA to be displayed on ECDIS is dependent on the introduction of special new objects into the object catalogue of S-57 in the first place. However, some of the valid conditions for S-52 can be anticipated now:

- The green option proposed for the ESSA will conflict with radar information and is definitely not useful for ECDIS display.

- The magenta option is acceptable by colour, but too complex comprising the magenta restricted area boundary together with a very wide magenta stipple, as well as text. The convention used for the S-52 Presentation Library is to normally use magenta to gain high attention for restrictions which seriously affect the safety of navigation. One could ask if this applies equally to the PSSA limit as well? In any case the line styles of the ESSA and PSSA limits will have to be far less complex and less prominent, compared to the proposed paper chart solutions. If they are also a different colour on ECDIS following our convention of not seriously effecting safety to navigation (which is yet to be determined), the similarity between the paper chart depiction and the ECDIS display may be lost.
- Due to the relatively large size of the paper chart, compared to the size of the ECDIS display, the paper chart provides both an overview of the whole area and at the same time the details of the part of the chart of immediate interest to the mariner. The mariner always gets a general impression from the paper chart about the areas which is covered by the particular PSSA. In contrast to this, the ECDIS allows the mariner to zoom in and out from the area on which the display is centred. Especially after zooming in, it could well be that the displayed part of a sea area does not contain any section of the border line of the PSSA. Therefore it is necessary to identify areas in ECDIS by a special area pattern or centred symbol (a special ECDIS feature). An analogy to the existing symbolisation of areas on the paper chart where the mariner is requested to navigate with caution, on the ECDIS, the areas in question could be identified with a so called "Centred symbol". Such a centred symbol for PSSA could consist of a character string "PSSA" for example. A similar approach could be taken for ESSAs.
- Today PSSAs are not included in the IMO requirements for ECDIS, which lists the types of features in the various display categories. With regard to the existing classification, the assignment of ESSAs and PSSAs to Standard Display, as for restricted areas and fairways, should be appropriate.

As well as the above issues, there are still a number of unanswered ECDIS display questions (already raised in Annex D of CSMWG CL 04/2003) that will remain as long as the methods of encoding such areas is not clearly defined in S-57: These include:

- What potential is there for these areas and boundaries to lose their contrast and clarity if merged with other complex areas where several maritime boundaries already exist?
- What happens when ESSAs have a common boundary with other ESSAs or restricted areas (**RESAREs**)?
- What happens when ESSAs are within other ESSAs with different attributes? Which has priority? These situations all have potential to cause clutter and obliterate several overlapping maritime areas or boundaries.

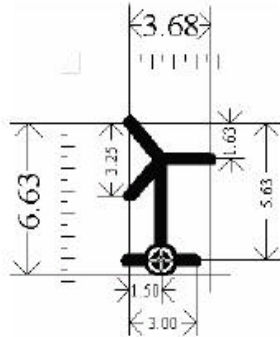
As already stated in the preceding discussion on ASL issues, the final solution will have to wait for the decisions by TSMAD for how ESSAs and PSSAs will be encoded in S-57 E4. C&SMWG will remain in close contact with both CSMWG and TSMAD for the final agreements.

2. CL 1/2004 ASLs

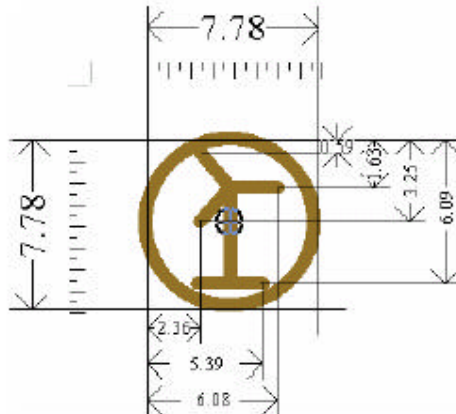
The chairman of C&SMWG is satisfied that his comments have been considered in the final solution proposed. No further comments.

3. CL 2/2004 wind and current turbines

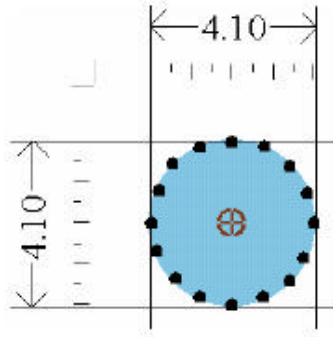
The S-52 Presentation Library provides a symbol for wind motors SY(**WIMCON11**) that is very similar to symbol **b** in this CL. An extract from the S-52 symbol library for this symbol is shown below and this symbol could be readily adopted for single wind turbines:



- Due to the current S-52 presentation rules, a light flare cannot be added to its display. If HOs start encoding wind motors or wind turbines with navigational lights, an appropriate display rule could be drafted by the C&SMWG and issued as an deferred amendment to the S-52 Presentation Library. Such changes to the ECDIS presentation then require software modifications to be made for new sales of ECDIS devices and by software updates due to technical maintenance required by the ECDIS manufacturer.
- In addition, the S-52 Presentation Library provides a symbol for wind farms SY(**WINDFRM51**) to be used as centred symbol (see explanation above) for wind farm areas:



- The encoding of a current turbine as an S-57 object would probably be handled in the S-52 presentation library as an obstruction and consequently displayed on ECDIS in the manner provided by the Presentation Library today. The example below shows an example where the depth (VALSOU) is unknown, but there are a variety of ECDIS symbols for obstructions depending on the attributes:



4. CL 3/2004 M11

Chairman of C&SMWG has no further comments and agrees with the proposed solution.

5. CL 1 and 2/2003 M 4

Chairman of C&SMWG has no further comments and agrees with the proposed solution.

Dr. Mathias Jonas
Chairman of C&SMWG