

Paper for Consideration by S101PT6

Portrayal of Small Craft Mooring Areas

Submitted by:	Australia (AHO)
Executive Summary:	Small craft mooring areas indicate a geographic area within which mooring facilities for small vessels exist. Depending on different factors, producing agencies may decide not to chart each individual mooring object (buoys, piles, etc) and publish the 'Anchorage Area' feature as the only indication of the existence of this type of facility. Based on mariner's feedback the AHO is proposing amending the current portrayal associated to Small Craft Mooring Areas to better differentiate them from standard anchorage areas and to reflect they contain physical obstructions to navigation.
Related Documents:	S-4 (B-431.7); INT-1 Q44; S-57 App B.1 – Annex A (9.2.1); S-101 DCEG (14.3); S-52 PL 4.0.2 Part I App C.
Related Projects:	ENCWG; NCWG

Introduction and Analysis

Small craft mooring areas contain a number of mooring structures (i.e. buoys, piles) which may also constitute physical obstructions to surface navigation.

Based on this, small craft mooring areas' paper chart symbology is made of a black dashed line (N1.1). On top of this, the guidance in S-4 (see extract below) seems to favour the use of the text '*Small Craft Moorings*' over the charting of all the individual mooring facilities (particularly when they are numerous and they are planted, removed or relocated by private operators that do not always communicate well with the charting authority). This practice has been transferred to the encoding of ENC products.

B-431.7 Numerous moorings may be shown by means of a legend, for example 'Small Craft Moorings', or equivalent. Their extent may be indicated by black dashed limits (N1.1). Alternatively, mooring buoy symbols may be used to represent a number of moorings provided this is clear to a mariner.



On the other hand, the encoding of this same real world feature in S-57 ENC is by using an ACHARE object with CATACH = 8 (small craft mooring area). See UOC extract below.

9.2 Anchorages and prohibited/restricted anchorages; moorings

9.2.1 Anchorages (see S-4 – B-431.1; B-431.3 and B-431.7)

If it is required to encode an anchorage area, including anchorages for seaplanes, it must be done using the object class **ACHARE**.

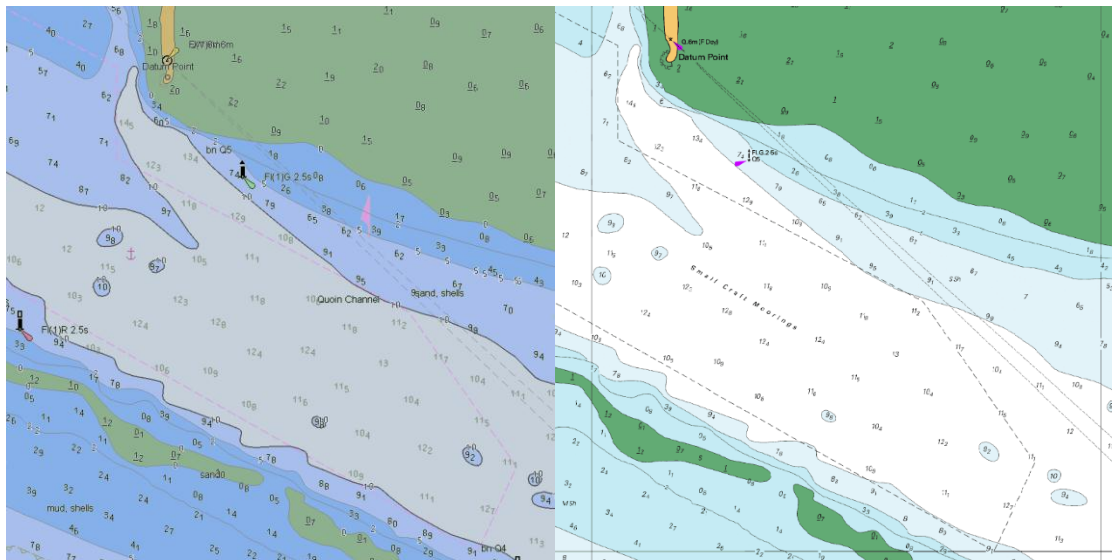
Geo object: Anchorage area (**ACHARE**) (P,A)
 Attributes: CATACH DATEND DATSTA NOBJNM
 OBJNAM - name or number of the anchorage.
 PEREND PERSTA RESTRN STATUS
 INFORM - additional information about the category of anchorage.
 NINFOM

Remarks:

- Individual reported anchorages without defined limits should be encoded as **ACHARE** objects of type point, with attributes CATACH = 1 (unrestricted anchorage), STATUS = 3 (recommended), and INFORM = *Reported anchorage*.

★ Areas with numerous small craft moorings should be encoded as **ACHARE** objects of type area, with CATACH = 8 (small craft mooring area). For the encoding of mooring buoys, see clause 9.2.4.

Both S-52 PL and S-101 PC, despite the risk associated with the existence of uncharted physical obstructions to navigation (i.e. buoys, pile), depict small craft mooring areas (ACHARE, CATACH=8) using a magenta (CHMGF) dashed line boundary with a centred anchor symbol (ACHARE02) and no descriptive text.



Small craft mooring area depicted in an ENC (left) and in a Paper Chart (right)

Furthermore, the depiction of small craft mooring areas in ENC is almost identical to the one used for anchorage areas (the only difference being the shape of the anchor symbol). The problem with this is that, when approaching an anchorage area, mariners expect to get some radar contacts or simply view ships stationed within the area. If none of this occurs, mariners may decide to cut through the area to save time, etc. If they mislead (due to similar display in ENC) a standard anchorage area with a small craft mooring area, they may hit a mooring buoy or pile and, depending on the size and characteristics of the vessel, either severely damage the hull or, in more extreme circumstances, sink.

The following is a partial transcript of an email received by the AHO referring to a mooring area in the approaches to a commercial port:

“Cyclone mooring buoys are located in this area. They are designed to hold commercial fishing boats during a cyclone event. They are large steel buoys approx. 2m long and probably 1m diameter which only show about 300mm above the water. They are black in colour and are not easily visible until very close and in windy conditions, due to wave action, almost impossible to see. The buoys do not appear to be lit, so at night the navigation hazard would be increased.

Hitting one of these buoys is likely to hole, and possibly sink, vessels smaller than commercial shipping.

There is no indication on the official Hydro ENC charts that these buoys even exist.”

Conclusion

The current portrayal of small craft mooring areas in ENCs, especially when not supported by the individual depiction of their associated mooring facilities, can be misleading and potentially dangerous.

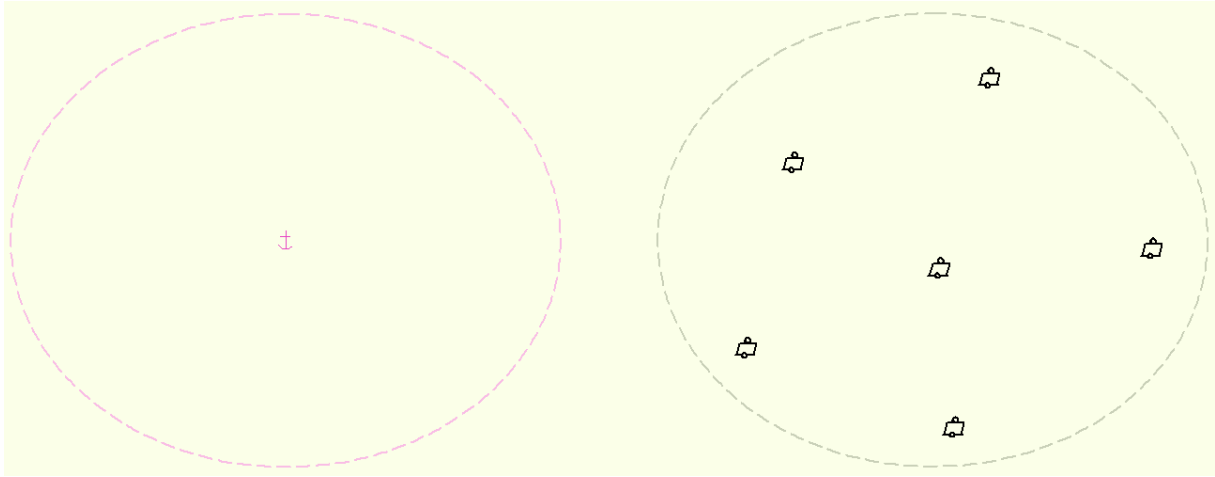
An alternative portrayal should be developed and implemented in S-101.

A possible solution could be retaining the current line style but changing its colour to ‘faint grey’ and replacing the centered anchor symbol with a staggered pattern of mooring buoys.

Preliminary portrayal would be:

LS(DASH,2,CHGRF) with a staggered pattern of barrel (tn) MORFAC point symbols (constant spacing with min./max. distance = 20mm – LW 0.3mm in CHGRF colour).

Please note that the colour selection (grey instead of magenta) is in line with **S-98 AnnexC Harmonised Portrayal for ECDIS – C-16.5.2 Colour assignments – Table 1 - General colour assignments**



Left: Current portrayal

Right: Proposed portrayal (buoy symbols should be CHGRF in colour)

Action Required of S101PT

The S101PT is invited to:

- a. Support the conclusion of this paper and approve the development of a portrayal proposal for the depiction of small craft mooring areas in S-101.