

INTERNATIONAL HYDROGRAPHIC
ORGANIZATION



ORGANISATION HYDROGRAPHIQUE
INTERNATIONALE

CHART STANDARDIZATION & PAPER CHART WORKING GROUP (CSPCWG)

[A Working Group of the Committee on Hydrographic Requirements for Information Systems – CHRIS]

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To CSPCWG Members

Date 14 April 2005

Dear Colleagues,

Subject: Charting of AIS on Aids to Navigation

The subject has recently arisen in UK on how to chart Aids to Navigation which are equipped with Automatic Identification Systems (AIS) transmitters. Trials are currently underway in UK waters, and probably elsewhere in the world, on this development in the use of AIS. Some of the ways in which such equipment may be used are described in IALA 'Recommendation A-126 on The Use of the AIS in Marine Aids to Navigation, Edition 1, Dec 2003', which can be found on the IALA website (site.ialathree.org/publications/recommendations/A126). An extract is at Annex A.

Consultation with the UK's General Lighthouse Authorities has suggested that it will be useful to the mariner to know which AtoNs are equipped with AIS transmitters.

IMO has produced some guidance on symbology to be used for display equipment, such as Radar and ECDIS, which includes symbols for AIS: see IMO SN/Circ.243– 'Guidelines for The Presentation of Navigation-Related Symbols, Terms and Abbreviations'. This states:

These guidelines apply to all shipborne navigational systems and equipment. The symbols listed in the appendix should be used for the display of navigation-related information to promote consistency in the symbol presentation on navigational equipment. The symbols listed in the Appendix should replace symbols which are currently contained in existing performance standards. Where a standard symbol is not available, another symbol may be used, but this symbol should not conflict with the symbols listed in the appendix.

The symbol for an AIS-equipped AtoN is quoted as:

Diamond with crosshair centred at reported position. (Shown with chart symbol. Chart symbol not required for radar.)

The colour is not stated, but believed to be blue. IHR article 'Investigations for Ergonomic Presentation of AIS Symbols on ECDIS' – August 2004 refers, also C&SMWG 14 paper C&S/14/5G (Herberg).

At short notice, UK has produced a brief for presentation at the IALA 'Aids to Navigation Management Committee' meeting, explaining how it believes AIS equipped AtoNs should be included on paper charts. A copy is attached as Annex B.

It may be that other members of our WG have been faced with the need to chart AIS on AtoNs. If so, it would be very interesting to hear how other HOs have dealt with the issue. Furthermore, this would be an opportunity for CSPCWG to take early action on this, to advise the wider IHO community on how these should be charted, to avoid the possibility of a variety of different solutions being produced, with the subsequent difficulty of rationalizing them in M-4.

This matter is also being referred to the C&SMWG 15 meeting 2- 4 May and it is expected that IALA will raise the matter with IHO in due course (see last paragraph of Annex B).

I would be most grateful for any advice on this matter, in particular answers to the questions at Annex C.

Please respond, using the form at Annex C, by 26 May 2005.

Yours sincerely,



Peter G.B. Jones,
Chairman

Annex A: Extract from IALA 'Recommendation A-126 on The Use of the AIS in Marine Aids to Navigation, Edition 1, Dec 2003'

Annex B: Charting of AIS on Aids to Navigation – UK policy

Annex C: Response form

Extract from IALA Recommendation A-126 on
The Use of the AIS in Marine Aids to Navigation
Edition 1, Dec 2003

The following extract explains the possible uses of AIS on AtoN:

The primary purpose of applying AIS to Aids to Navigation (AtoN) is to promote and enhance safety and efficiency of navigation by one or more of the following:

- Providing a positive and all-weather means of identifying an AtoN on AIS and on ships' radar displays (when linked to AIS);
- Complementing existing signals from AtoN;
- Transmitting accurate positions of floating AtoN (possibly corrected by DGNSS);
- Indicating if a floating AtoN is off station;
- Providing reference points for a ship's radar;
- Providing a complementary service to Racons;
- Providing Synthetic AIS AtoN (Note 1);
- Providing Virtual AIS AtoN (Note 2);
- Marking or delineating tracks, routes, areas, and limits (for example areas to be avoided and Traffic Separation Schemes (TSS));
- Marking offshore structures (for example wind turbines, oil and gas platforms);
- Providing weather, tidal, and sea state data.

Note 1. Synthetic AIS AtoN – the AtoN physically exists, but the AIS Station is located remotely from the AtoN. Synthetic AIS AtoN may be 'Monitored' or 'Predicted'.

Note 2. Virtual AIS AtoN – used to transmit a message 21 [*Aids to Navigation report*] for an AtoN that does not physically exist. [*More details of synthetic and virtual AIS AtoN are available in the paper*].

A further set of benefits may include the following:

- Monitoring the status of an AtoN;
- Tracking an AtoN that is off position;
- Identifying ships involved in collisions with AtoN;
- Gathering real-time information on the 'state of health' of an AtoN;
- Remotely controlling changes in AtoN parameters.

AIS may be applied to both floating and fixed AtoNs, and more than one AIS message format may be transmitted as noted above. The service provider has an obligation to verify the broadcast information and the correct operation of the AIS for AtoN.

CHARTING OF AIS ON AIDS TO NAVIGATION
UK POLICY

1. The proposal at the end of the IALA Liaison Note AIS16/output/02 conforms to UKHO's judgment, ie that the best way to chart AIS on Aids to Navigation (AtoN) is to:
 - Add the abbreviation AIS as a legend next to the symbol for the AtoN.
 - The legend to be in magenta, to be consistent with other radio transmitted devices such as Racons. This will help to distinguish it from the AtoN's name/designation, light and fog signal descriptions, which are all in black.
 - The legend should be upright for fixed structures and sloping for floating aids, in conformity with normal practice.
2. The suggested 'diamond' display for integrated navigation displays is not suitable for use on paper charts as it would conflict with a radio circle, add to clutter at the charted location, and risk confusion with the existing tidal stream diamond symbol.
3. No note will be added to charts. The 'boxed' publications note refers to NMs, the Symbols and Abbreviations Booklet (Chart 5011), the Mariner's Handbook (NP100) and Admiralty List of Radio Signals, all of which may contain information about AIS on AtoN; this is considered to be sufficient. To insert a specific note on all charts which include an AIS equipped AtoN could result in a proliferation of notes, the details of which would soon become well known and unnecessary. This would be potentially a huge chart correction load, unwelcome to HOs and chart users alike.
4. The symbol/abbreviation will need to be included in Chart 5011 (INT 1). It is too late to include in the New Edition of 5011 to be published 19 May 2005, so it will be necessary to issue a NM correction as soon as the charting policy is endorsed. This will serve to draw the mariner's attention to the new symbol.
5. Annual NM 17A currently provides information about AIS in general, with paragraph 7 dealing with AIS trials for AtoN. This text can be updated in 2006 to explain the purpose and charting of AIS on AtoN. If thought necessary, a (T)NM could be published in year to replace the existing text.
6. The information provided in NP100 can be updated if necessary, as the use of AIS on AtoN becomes proven.
7. Details of an AtoN's AIS services would be appropriately provided in associated publications (eg Admiralty List of Radio Signal), in a similar way to Racons.
8. These proposals are UKHO specific at present. It is noted that the IALA Liaison Note proposes that IALA should submit a paper to IHO (paragraph 3 of Annex) and UKHO would encourage this.

RESPONSE FORM

(Please return to CSPCWG Secretary by 26 May 2005)

andrew.coleman@ukho.gov.uk

1. Have you received any requests to chart AIS on AtoN? YES/NO
If YES, please give details.....

2. Have you received any requests to develop chart symbols for AIS on AtoN? YES/NO
If YES, please give details.....

3. Do you have any observations on the policy developed by UK? YES/NO
If YES, please give details.....

4. Do you agree to add this as a work item for CSPCWG? YES/NO

(Note, in order to achieve consistency of application across IHO, if CSPCWG takes this forward, I believe it should be accorded High priority; I do not anticipate it would be excessively time-consuming).

5. Any further comments:.....

Name.....

Member State.....