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**LIAISON STATEMENT TO IALA e-NAV10**

1. **INTRODUCTION**

RTCM initiated a liaison with IALA on 14 January 2011, prior to the meeting of the IALA AIS WG in Melbourne. Our continued coordination is essential because RTCM is developing equipment and display standards that include applications of technology and spectrum for which IALA is engaged in development in a leading role and is exchanging vital liaison statements. While we await your response, we note some relevant proceedings of ITU Working Party 5B (WP5B) and its liaison exchanges with IALA, IMO, IEC and CIRM.

1. **CONCERNING THE USE OF AIS FOR SAR (SEARCH AND RESCUE) APPLICATIONS**

In our previous liaison statement, RTCM addressed the use of AIS for SAR applications. RTCM notes some pertinent proceedings of WP5B described in Document 5B/727 (WP5B Chairman’s Report), Annex 16 (revision of Rec. ITU-R M.585-5 for identification/numbering of these devices), Annex 37 (refer to 5B/TEMP/347, “Working document toward a draft new Report ITU-R M.[MAN OVERBOARD SYSTEM]”), Annex 40 (liaison note to CIRM to assign user ID numbers to these devices) and Annex 42 (liaison note to IALA regarding the Preliminary Draft Revision of Rec. ITU-R M.1371-4). RTCM also notes and strongly supports, in its entirety, Document 5B/671 “Working document toward a Preliminary Draft Revision of Recommendation ITU-R M.1371-4 to consider ‘Applications of AIS for SAR (Search and Rescue)’.” Since RTCM is developing standards for devices and display systems to support these applications, and since, at the direction of ITU WP5B, IALA is preparing a Preliminary Draft Revision of Recommendation ITU-R M.1371-4 to be submitted to the next meeting of WP5B in November 2011, RTCM requests that IALA include all of the revisions that are proposed by these documents to support the use of AIS for SAR applications.

* 1. **Proposed changes to Rec. ITU-R M.1371-4 Annex 1**

### 2.1.6 AIS search and rescue transmitter (AIS-SART station)

The AIS SART station should transmit Message 1 and Message 14 using the burst transmissions as described in Annex 9.

The Messages 1 and 14 should use a user ID 970xxyyyy (where xx = manufacturer ID 01 to 99; yyyy = the sequence number 0000 to 9999) and Navigational Status 14.

The Message 14 should have the following content:

When active: SART ACTIVE

Under test: SART TEST

#### 2.1.6.1 AIS-SART transmitter integrated within an MOB (man overboard device)

When the AIS SART transmitter is integrated within an MOB, its Message 1 and Message 14 transmissions should comply with §2.1.6, except that its user ID should be 972xxyyyy and its Message 14 should have the following content:

When active: MOB ACTIVE

Under test: MOB TEST

#### 2.1.6.2 AIS-SART transmitter integrated within an EPIRB

When the AIS SART transmitter is integrated within an EPIRB, its Message 1 and Message 14 transmissions should comply with §2.1.6, except that its user ID should be 974xxyyy and its Message 14 should have the following content:

When active: EPIRB ACTIVE

Under test: EPIRB TEST

**.2 Proposed changes to Rec. ITU-R M.1371-4 Annex 8**

## 3.1 Messages 1, 2, 3: Position reports

The position report should be output periodically by mobile stations.

TABLE 45

|  |  |  |
| --- | --- | --- |
| Parameter | Number of bits | Description |
| Message ID | 6 | Identifier for this Message 1, 2 or 3 |
| Repeat indicator | 2 | Used by the repeater to indicate how many times a message has been repeated. See § 4.6.1, Annex 2; 0-3; 0 = default; 3 = do not repeat any more |
| User ID | 30 | Unique identifier such as MMSI number |
| Navigational status | 4 | 0 = under way using engine, 1 = at anchor, 2 = not under command, 3 = restricted manoeuvrability, 4 = constrained by her draught, 5 = moored, 6 = aground, 7 = engaged in fishing, 8 = under way sailing, 9 = reserved for future amendment of navigational status for ships carrying DG, HS, or MP, or IMO hazard or pollutant category C, high speed craft (HSC), 10 = reserved for future amendment of navigational status for ships carrying dangerous goods (DG), harmful substances (HS) or marine pollutants (MP), or IMO hazard or pollutant category A, wing in grand (WIG); 11-12 = reserved for future use,  13 = vessel in distress,  14 = AIS-SART, MOB, or EPIRB-AIS (active),  15 = not defined = default (also used by AIS-SART, MOB and EPIRB-AIS under test) |

## 3.12 Message 14: Safety related broadcast message

The safety related broadcast message could be variable in length, based on the amount of safety related text. The length should vary between 1 and 5 slots.

TABLE 60

| Parameter | Number of bits | Description |
| --- | --- | --- |
| Message ID | 6 | Identifier for Message 14; always 14. |
| Repeat indicator | 2 | Used by the repeater to indicate how many times a message has been repeated. See § 4.6.1, Annex 2; 0-3; 0 = default; 3 = do not repeat any more |
| Source ID | 30 | MMSI number of source station of message |
| Spare | 2 | Not used. Should be set to zero. Reserved for future use |
| Safety related text | Maximum 968 | 6-bit ASCII as defined in Table 44 |
| Maximum number of bits | Maximum 1 008 | Occupies 1 to 5 slots subject to the length of text. For Class B mobile AIS stations the length of the message should not exceed 2 slots |

Additional bit stuffing will be required for this message type. For details refer to transport layer, § 5.2.1, Annex 2.

Table 61 gives the number of 6-bit ASCII characters, so that the whole message fits into a given number of slots. It is recommended that any application minimizes the use of slots by limiting the number of characters to the numbers given, if possible:

TABLE 61

|  |  |
| --- | --- |
| Number of slots | Maximum 6-bit ASCII characters |
| 1 | 16 |
| 2 | 53 |
| 3 | 90 |
| 4 | 128 |
| 5 | 161 |

These numbers also take bit stuffing into account.

The AIS-SART should use Message 14, and the safety related text should be:

1 For the active SART, the text should be “SART ACTIVE”.

2 For the SART test mode, the text should be “SART TEST”.

3 For the active MOB, the text should be “MOB ACTIVE”.

4 For the MOB test mode, the text should be “MOB TEST”.

5 For the active EPIRB, the text should be “EPIRB ACTIVE”.

1. For the EPIRB test mode, the text should be “EPIRB TEST”.
2. **CONCERNING THE NEED FOR SPECTRUM TO SUPPORT E-NAVIGATION (FOR THE EXPANSION OF AIS AND FOR VHF DATA EXCHANGE)**

RTCM has reviewed IALA’s liaison statement to ITU WP5B (Document 5B/623) and the reply liaison from WP5B, Annex 41 to Document 5B/727 (the WP5B Chairman’s Report), which identifies and addresses the initial spectrum requirements for e-Navigation under WRC-12 Agenda item 1.10 and the need for a future WRC agenda item for e-Navigation and GMDSS Modernization. We have also reviewed Annex 31 to 5B/727, Draft New Report ITU-R M.[SNAP] “Current usage of RR Appendix 18 of the Radio Regulations for the maritime mobile service to identify a possible solution of Agenda item 1.10 (Resolution 357 (WRC-07))” which explains in section 4, “Report ITU-R M.2122 provides an EMC (electromagnetic compatibility) analysis between the VPC channels and the AIS, and this Report is considered in Recommendation ITU-R M.1842-1 for the exchange of data by VHF. This Report shows that the AIS channels are most susceptible to interference from channels 27 and 28 which are interleaved adjacent to AIS1 and AIS2. Thus, it is prudent to consider that the VHF data exchange service envisioned in Recommendation ITU-R M.1842-1 should be addressed primarily to the contiguous set of frequencies contained in the 6 remaining VPC channels 24, 84, 25, 85, 26 and 86.”

RTCM further notes that IALA’s request is for two channels for the expansion of AIS and six channels for VHF data exchange. In view of the vital information contained in Document 5B/727 Annex 31 and the instructions in Annex 41 in which WP5B “suggests IALA encourage its National Members to submit proposals to WRC-12 for AIS 5 and 6 and a future WRC Agenda item for e-Navigation and GMDSS Modernization,” RTCM strongly recommends that IALA focus its expert technical e-NAV working groups (AIS and Communications) on the specific designation of the two channels 27B (2027) and 28B (2028) for the expansion of AIS and the six channels 24 (0024), 84 (0084), 25 (0025), 85 (0085), 26 (0026) and 86 (0086) for VHF data exchange for e-Navigation. RTCM believes that it is expected of IALA to apply its technical expertise to this level of specificity and to communicate this in its next liaison statement to WP5B so that it is not left for others to guess which channels to use or, worse yet, that further delays or inaction on our part could lead to further encroachment by other services on the use of RR Appendix 18 so that these channels could become unavailable for global maritime service.

1. **ACTIONS REQUESTED**

RTCM encourages the e-Navigation Committee to urgently act on these recommendations.

**Status:** For action

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