

Input paper for the following Committee(s): check as appropriate

☒ ARM ☐ ENG ☐ PAP☐ DTEC ☐ VTS

Purpose of paper:

☒ Input☐ InformationAgenda item <sup>2</sup>

n.n

Technical Domain / Task Number <sup>2</sup>

\_\_\_ (IALA R0126)

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## IALA AIS Status Bits for Mobile AtoN

### 1 SUMMARY

IALA R0126 and IEC 62288(Ed.3) definition of Mobile Aton status bits is somewhat ambiguous as to whether all types of MatoN should report their direction of movement (COG) or only those MatoN that are self-propelled.

the ITU-R Recommendation M.1371-5 regarding AIS, defines AIS message 21 as an AIS Aton Report which may include AtoN status information which is currently defined in); the latter also defined their portrayal.

#### 1.1 Purpose of the document

To highlight an ambiguity in IALA A0126, and request its amending to better convey that AIS message 21 AtoN status bits Page 111, 2<sup>nd</sup> – 5<sup>th</sup> bits, i.e., 1001, 1001, 1010, 1011, 1100, 1101, 1110, 111, are intended solely to report the direction of movement of self-propelled MatoN that can report their direction (COG); and, further request IALA ARM liaise with IEC MT5 for them to provide same/similar clarification in IEC 62288:2021's Table .1—AtoN Status field.

#### 1.2 Related documents

Attached MAtoN excerpts of IALA R0126 and IEC 62288(Ed.3).

### 2 BACKGROUND

ITU-R Recommendation M.1371-5 regarding AIS, defines AIS message 21 as an AIS Aton Report which may include AtoN status information which is currently defined in IALA A0126 and IEC 62288:2012); the latter also defines their portrayal. The submitter has been made aware by a few manufacturers that they are confused or not certain as to when to convey IALA R0126 status bits Page 111's, 2<sup>nd</sup> – 5<sup>th</sup> bits, as to whether those should always reflect the MAtoN's direction of movement, even when adrift or whether these bits are reserved only for use by self-propelled MatoN that are capable calculating their COG.

### 3 REFERENCES

- [1] IALA R0126 (old A-126), The Use of the AIS in Marine AtoN Services
- [2] IEC 62288:2021, Maritime navigation and radiocommunication equipment and systems - Presentation of navigation-related information on shipborne navigational displays - General requirements, methods of testing and required test results (Ed.3),

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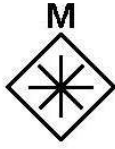
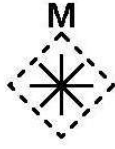
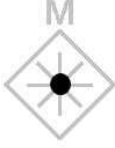
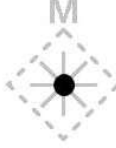

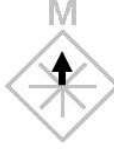

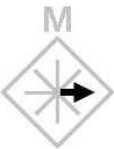





<sup>1</sup> Input document number, to be assigned by the Committee Secretary

<sup>2</sup> Leave open if uncertain

#### **4 ACTION REQUESTED OF THE COMMITTEE**

The Committee is requested to consider the information provided and act accordingly.



	Symbol name and description	Symbol graphic(s)
2.10 c	<p>AIS aids to navigation – Mobile</p> <p>Source of mobile AIS AtoN is:</p> <p>AIS Message 21</p> <p>AtoN Status = Page ID = 101</p> <p>MMSI identity range: 99 MID 8000 – 99 MID 9999</p> <p>Mobile AIS aids to navigation (AtoN) shall be presented as an open diamond topped by letter "M" of not more than 2 mm in length or height and a compass rose inside centred at reported/predicted position. The sides of the diamond shall be not more than 6 mm in length.</p> <p>The diamond and the compass rose shall be drawn using a thin solid line style (Virtual AtoN Flag = 0) or a thin dashed line (Virtual AtoN flag = 1).</p> <p>The basic colour for a mobile AIS AtoN is as used for the physical AIS AtoN symbols.</p> <p>Mobile AIS AtoN with known direction of movement shall include an arrow originating from the compass rose centre oriented towards to the reported COG of the mobile AIS AtoN (see AIS AtoN Status bits when Page ID bits = 101 in Table L.1) adjusted to the orientation mode in use. The result from "adjusted to the orientation mode" shall be presented aligned with the closest line of the compass rose.</p> <p>Mobile AIS AtoNs may be labelled with the AtoN name. Alphanumeric text used to label a mobile AIS AtoN shall be the same basic colour as the mobile AIS AtoN symbol. It may be user selectable for the label to include full textual content of the AtoN name or truncated version of the AtoN name, for example only last 3 characters of the AtoN name.</p>	<p>Basic shapes</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p>Default</p> <p>Virtual AtoN Flag = 0</p> </div> <div style="text-align: center;">  <p>Virtual</p> <p>Virtual AtoN Flag = 1</p> </div> </div> <p>Basic shapes shall use the additional qualifiers below to denote the AtoN as propelled.</p> <p>Self-propelled, but direction not reported or unavailable (AtoN Status bits 1010111x)</p> <div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p>Tethered (AtoN Status bits 1010101x)</p> <div style="text-align: center;">  </div> <p>If COG information is provided, it shall be presented with an arrow pointed in coarse direction of COG within <math>\pm 22,5^\circ</math> sectors as defined by AtoN Status bits (see Table L.1).</p> <div style="display: flex; flex-direction: column; align-items: center;"> <div style="display: flex; justify-content: space-around; width: 100%;">   </div> <div style="display: flex; justify-content: space-around; width: 100%; margin-top: 10px;">    </div> <div style="display: flex; justify-content: space-around; width: 100%; margin-top: 10px;">    </div> </div>

## Overview of the use AIS AtoN status field bits

Table L.1 provides an overview of AIS AtoN status field bits.

### Table L.1 – AIS AtoN Status field

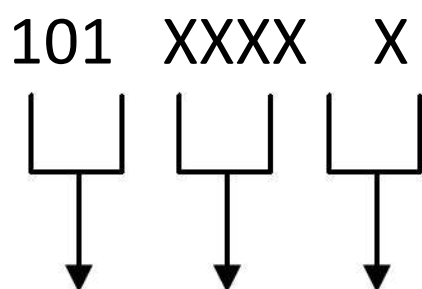
Bit Order		RACON / Light	Bit Order		Mobile AtoN & Method and Direction of Movement		Regional AtoN
8 <sup>th</sup> 7 <sup>th</sup> & 6 <sup>th</sup>	Bits	Page ID = 111	8 <sup>th</sup> 7 <sup>th</sup> & 6 <sup>th</sup>	Bits	Page ID = 101		Page ID = 001
5 <sup>th</sup> & 4 <sup>th</sup>	00	No RACON installed	5 <sup>th</sup> , 4 <sup>th</sup> , 3 <sup>rd</sup> & 2 <sup>nd</sup>	0000	Direction Not Reported	No Further Information Default	Reserved for regional use <sup>a</sup>
	01	RACON installed but not monitored		0001		Free-floating ABCD values denote an area (e.g. oil spill)	
	10	RACON operational		0010		Free-floating ABCD values denote an object (e.g. craft, gear, flotsam, etc.)	
	11	RACON Error		0011		Moves as defined (Synthetic) ABCD values denote an object (e.g. craft, gear, flotsam, etc.)	
3 <sup>rd</sup> & 2 <sup>nd</sup>	00	No light or no monitoring		0100		Moves as defined (Synthetic) ABCD values denote an area (e.g. dredging zone)	
	01	Light ON		0101	Tethered from a watercraft (e.g. cable, pipe, net)		
	10	Light OFF		0110	Reserved for future use		
	11	Light fail or at reduced range		0111	Self-propelled, but direction not reported or unavailable		
1 <sup>st</sup>	0	Good Health		1000	Direction of movement (COG)	000° ± 22.5°	
				1001		045° ± 22.5°	
				1010		090° ± 22.5°	
				1011		000° ± 22.5°	
			1100	135° ± 22.5°			
			1101	180° ± 22.5°			
			1110	225° ± 22.5°			
			1111	270° ± 22.5°			
	1	Alarm	1 <sup>st</sup>	0		Monitored	
				1		Unmonitored	

<sup>a</sup> E.g. VTT-EG AIS AtoN for Inland Use standard

NOTE 8<sup>th</sup> bit is most significant and 1<sup>st</sup> bit is least significant

<sup>a</sup> E.g. VTT-EG AIS AtoN for Inland Use standard

**NOTE 8<sup>th</sup> bit is most significant and 1<sup>st</sup> bit is least significant**



Mobile AtoN & Method and Direction of Movement status 8 bits format : 101 XXXX X		
Page id (8 <sup>th</sup> , 7 <sup>th</sup> and 6 <sup>th</sup> bit)	Direction not reported field OR Direction of movement (COG) (5 <sup>th</sup> , 4 <sup>th</sup> , 3 <sup>rd</sup> and 2 <sup>nd</sup> bit)	Monitoring Status (1 <sup>st</sup> bit)
101	0000 = No Further Information Default	0 = Monitored
	0001 = Free-floating ABCD values denote an area (e.g., oil spill)	1 = Unmonitored
	0010 = Free-floating ABCD values denote an object (e.g., craft, gear, flotsam, etc.)	
	0011 = Moves as defined (Synthetic) ABCD values denote an object (e.g., craft, gear, flotsam, etc.)	
	0100 = Moves as defined (Synthetic) ABCD values denote an area (e.g., dredging zone)	
	0101 = Tethered from a watercraft (e.g., cable, pipe, net)	
	0110 = Reserved for future use	
	0111 = Self-propelled, but direction not reported or unavailable*	
	1000 = 000° ± 22.5°*	
	1001 = 045° ± 22.5°*	
	1010 = 090° ± 22.5°*	
	1011 = 135° ± 22.5°*	
	1100 = 180° ± 22.5°*	
	1101 = 225° ± 22.5°*	
	1110 = 270° ± 22.5°*	
	1111 = 315° ± 22.5°*	

Note: The ABCD value are the “dimension/reference for position” parameter of the MAtoN object itself and not the dimensions of the area in which a floating aid can move (guard zone) or dimensions of a “dangerous zone” around the AtoN (refer to the message type 21 dimensions field information).

\* Status bits relating to; self-propelled and direction of movement are for future development, testing of trial concepts and should only be used after a full risk assessment by a competent authority.

Figure 4 Recommended use of status bits for MAtoN