IALA

IALA GUIDELINE

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AUTHORISATION OF AIS AtoN

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CONTENTS

1. SUGGESTED PROCEDURE FOR THE AUTHORISATION OF AIS AtoN

1.1. INTRODUCTION

This Guideline is written with the assumption that the reader has knowledge of AIS AtoN. Information on AIS AtoN is contained in IALA Recommendation *R0126 (A-126) The Use of the Automatic Identification System (AIS) In Marine Aids to Navigation Services* and Guideline *G1062 Establishment of AIS as an Aid to Navigation*.

AIS can be used as a Marine Aid to Navigation (AtoN) and may be deployed by the maritime administration or other organisations, such as local AtoN authorities or offshore energy companies. Maritime administrations, including lighthouse authorities generally have a statutory obligation to provide AtoN in their coastal waters and to supervise their deployment by other organizations.

However, AIS AtoN require a radio licence and the radio licensing authority may be different from the maritime administration. In such cases, there may be a need for a coordinated procedure to ensure that AIS AtoN are correctly licensed and authorised, without unnecessarily delaying or obstructing their deployment. The annexed AIS AtoN Specification Sheet is provided to assist in this application process. In some cases, international consultation may be necessary to ensure co-ordination of slot allocations.

The authorities involved can be diverse and include marine administrations, coast guards, communications regulators, hydrographic services, lighthouse authorities and other governmental and non-governmental organizations and agencies. In some cases, the IALA National member will be the authority, but in others, non-IALA members will be involved.

1.2. PROCEDURE

Where a single authority has responsibility for all aspects of the application, the normal procedures can be followed, bearing in mind possible implications for adjacent countries.

Where different authorities are responsible for the AtoN and radio aspects of the application, the following procedure is proposed.

The authorities should agree in advance who has responsibility for:

- allocation of MMSI;
- ITU reporting; and
- AIS Slot map allocations for the different types of AIS transmitters (base station, mobile, AtoN, SART, etc.).

It is assumed in the example below (ANNEX A) that slots are allocated by the maritime administration and MMSI by the radio licensing authority. This may differ from country to country.

In addition, the parties should agree with timescales for turnaround of applications and a communication protocol at each stage. Electronic circulation of documentation may speed up the process.

1.2.1. STAGE 1 – RECEIVE APPLICATION

When any licensing authority receives an AIS AtoN application, the receiving authority should forward copies to other relevant authorities.

1.2.2. STAGE 2 – REVIEW APPLICATION

The authorities involved should confirm that all aspects of the AIS AtoN specification sheet have been addressed. The lighthouse authority or other relevant body should determine if the proposed AIS AtoN:

- is appropriate in the general mix of AtoN for the area concerned;
- does not impose undue loading on the VDL;
- operation will be monitored (i.e., by another base station, as part of a network); and
- confirms optimum slot allocation scheme (if FATDMA, confirm slot availability and reservations).

During the review process, it may be necessary to co-ordinate with other competent authorities in the region due to the proposed location.

1.2.3. STAGE 3 – APPROVE / DENY APPLICATION

Any application for an AtoN should be approved by the lighthouse authority and/or other relevant body prior to radio licensing.

The application will then be returned to the applicant advising approval, approval with qualifications/changes, or deny. In the case of applications that have been denied, reasonable explanation should be given noting that it may be possible to re-apply with revised parameters.

Approved applications should include the identified MMSI and, if required, the allocated fixed access timeslots.

It is important that the MMSI be assigned in accordance with Recommendation ITU-R M.585-5 and that the procedures set out in ITU Circular Letter CM/17 be followed to ensure that the MMSI is recorded on the ITU database, see www.itu.int.

At each stage of the process, all other authorities involved should be kept informed.

A single notice of approval to the applicant containing all required permissions is preferred. However, where this is not possible, individual notifications may be submitted.

It is recommended that authorities implement procedures to ensure approved AIS AtoN operate according to the parameters in their authorisation.

2. DEFINITIONS

The definitions of terms used in this Guideline can be found in the *International Dictionary of Marine Aids to Navigation* (IALA Dictionary) at http://www.iala-aism.org/wiki/dictionary and were checked as correct at the time of going to print. Where conflict arises, the IALA Dictionary should be considered as the authoritative source of definitions used in IALA documents.

3. ABBREVIATIONS

AIS	Automatic Identification System
AtoN	Marine Aids to Navigation
CSTDMA	Carrier Sense Time Division Multiple Access
DAC	Designated Area Code
DGNSS	Differential Global Navigation Satellite System
FATDMA	Fixed-Access Time-Division Multiple Access
FI	Function Identifier
GLONASS	Globalnaya Navigatsionnaya Sputnikovaya Sistem
GPS	Global Positioning System
IEC	International Electrotechnical Commission
ITU	International Telecommunication Union

ITU-R   International Telecommunication Union-Radiocommunication Sector

MMSI   Maritime Mobile Service Identity

RAIM   Receiver Autonomous Integrity Monitoring

RATDMA   Random Access Time Division Multiple Access

SART   Search and Rescue Transponder

UTC   Universal Time Co-ordinated

VDL   VHF Data Link

W   watt

ANNEX A   AIS AtoN SPECIFICATION SHEET

Applicant Details		
	Applicant / Owner	**Operator (if different)**
Contact Name		
Organization		
Contact Details Address		
Phone		
Mobile		
e-mail		

Message 21 content		
Parameter	**values**	**Comment / description**
Maritime Mobile Service Identity (MMSI)		Provided by competent authority issuing the MMSI [See IALA web page for contact information of national competent authority]
Name of AtoN		Denote AtoN Name up to 34 characters
Nature and Type of AtoN		Denote the type of AtoN; see IALA A-126
Synthetic and Virtual AtoN		If unit is transmitting virtual or synthetic specify message 21 content (e.g., MMSI, position, etc.), reporting interval, channel. A separate form for each synthetic or virtual AtoN message should be attached
Dimension/ Reference for Position	A= B= C= D=	

Message 21 content		
Parameter	**values**	**Comment / description**
Type of electronic position fixing device		0 = Undefined (default) 1 = GPS 2 = GLONASS 3 = Combined GPS/GLONASS 4 = Loran-C 5 = Chayka 6 = Integrated Navigation System 7 = surveyed. For fixed AtoN and virtual AtoN, the charted position should be used. The accurate position enhances its function as a radar reference target 8 = Galileo 9-14 = not used 15 = internal DGNSS
AtoN status		Denote status indicators available on the AtoN See IALA A-126
Supplemental information		
Intended Position		The position where the AtoN will be deployed
Process for deployment		Indicate how and who will be deploying the unit
Off-position Threshold		Denote off-position threshold expressed in meter, see IALA A-126
RAIM capability		Denote whether EPFS has RAIM capability
Access Mode for Message 21		FATDMA, RATDMA or both. If FATDMA: denote slots provided by competent authority for VDL slot management [See IALA web page for contact information of national competent authority]
Date of Certification		Provide the date of type certification to IEC 62320-2
Other messages		
Additional messages		Additional messages 6, 8, 12, 14 or other appropriate messages possible, but, must be denoted here. Application Specific Message should provide DAC and FI as registered with IALA.
Content of message 12 and 14		Provide the text
Access Mode for Messages other than 21, if implemented		FATDMA, RATDMA and/or CSTDMA. If FATDMA specified, state slots used.

Message scheduling		
Parameter	**values**	**Comment / description**
Messages Transmitted / Reporting interval per channel	21: every __ minutes/channel a / b Other messages (include DAC/FI): every __ minutes/channel a / b	Message 21 transmission required minimum every X minutes; additional messages 6, 8, 12, 14 or other appropriate messages possible, but, must be denoted here. Application Specific Message should provide DAC and FI.
Physical attributes of AIS AtoN Station		
AIS AtoN Station Type		Denote AIS AtoN Station Type (i.e., 1, 2, 3); see IALA Recommendation A 126 Denote No Receiver (Type 1), Receiver for control functions only (Type 2), or Receiving processes for autonomous mode (Type 3)
Configuration method		Denote whether via the VDL and or proprietary. Provide further information, e.g. + Standard PI sentences (IEC 61162) + Standard AIS AtoN binary configuration messages + Proprietary sentences + Proprietary binary configuration messages
Transmit Power		+ default (12.5 W) + or as defined by manufacturer and denoted here
Power availability		Denote power source: main or auxiliary e.g., power grid
Transmitter capability		Denote whether dual or single channel (Type 1 and 2 only)
Receiver availability		Denote receiver on times
UTC synchronisation		Denote either Direct, Indirect or semaphore (Types 3)
Chaining		If capable provide all MMSI in the chain and the neighbouring AIS AtoN station (parent and child) of this station in the chain