



From: IALA
To: IHO NIPWG

15 December 2023

LIAISON NOTE

Comments on S-125 Marine Aids to Navigation version 0.0.3

1 INTRODUCTION

The S-125 Marine Aids to Navigation is a Product Specification (PS) owned by IHO, closely related to S-201 Aids to Navigation information. Initially, S-125 had a lower priority within IHO, prompting the IALA ARM Committee to step in and collaborate with NIPWG in its development. NIPWG has relied IALA with developing of the S-125 PS.

2 DISCUSSION

The 16th ARM Committee updated the S-125 PS and has requested a review from IHO NIPWG. During this process, NIPWG members engaged in discussions and offered valuable feedback. These discussions covered essential aspects, such as the data model for AIS AtoN (Physical, Synthetic, Virtual), exchange set components, and alignment with S-100 5th edition standards. In the 17th ARM Committee meeting, responses to these comments were thoroughly documented, and strategies for revision were discussed. ARM is now prepared to proceed with the S-125 update, and will continue to share the progress with NIPWG.

The ARM Committee's response to IHO NIPWG comments on S-125 version 0.0.3 is provided in the annex.

3 ACTION REQUESTED

The IHO NIPWG is requested to note the information provided.

1	2	(3)	4	5	(6)	(7)	
Component	CO ¹	Clause No./ Subclause No./ Annex (e.g. 3.1)	Paragraph/ Figure/Table/ Note (e.g. Table 1)	Type of comment ²	Comment (justification for change) by the CO ³	Proposed change by the CO	IALA ARM17 observations on each comment submitted
PS	ntou	UML diagrams		ed	Readability of the UML diagram is negatively affected by the colour fill (shading) used for the UML diagram.	Please consider to use lighter colours (and without gradient) which provide better contrast and readability (on screen or print out). Thank you.	Investigate alternatives
PS	ntou			te	<p>'SyntheticAISaidToNavigation' is not found in GI Registry.</p> <p>Definition of 'PhysicalAISaidToNavigation' in GI registry is: "An Automatic Identification System (AIS) message 21 transmitted from a physical Aid to Navigation, or transmitted from an AIS station for an Aid to Navigation which physically exists." It seems to be following IMO's definition and already includes 'SyntheticAISaidToNavigation'.</p> <p>IMO MSC.1/Circ.1473 states that physical AIS AtoN is an AIS Message 21 representing an aid to navigation that physically exists.</p>	Clarify the definition, add definition, so that they can be properly modelled accordingly.	Definition will be proposed to GI Registry
PS	ntou	all (6.2)	Structure-Equipment p.14	te	<p>S-125 Ed.0.0.3 includes some structure features, e.g. Landmark, Pile, OffShorePlatform, Silo/Tank. Is it necessary or useful, for S-125, to encode structures which are not of an <i>AidsToNavigation</i> type themselves? Encoding involves feature classification, attributes, geometries....</p> <p>There are cases where navigation lights and RACONS are fitted directly on the breakwater or bridge of geometry other than points.</p> <p>Each equipment object has its own geometry (point only), which is not necessarily the same as the parent structure.</p>	Merge the Abstract features 'Structure Object' and 'Equipment' into their superType 'Aids To Navigation'.	S-125 is subset of S-201 and this changes will break the relationship with S-201

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					VirtualAIS Aids To Navigation may not have any 'parent structure' to be associated to. Daymark may "act as either a structure or equipment feature in practice..."		
PS	ntou	6.2	p.14 7 th - 8 th point	te	Broadcasting station for virtual AIS or synthetic AIS is not necessarily an AIS Base Station. It could be an AIS ATON Station, which is even a more common case.	Consider the modelling of AIS ATON Station.	Change is needed as S-201. ARM will initiate (eg. AIS broadcasting station = 20)
PS	GER	Page 17	Figure 3	ge	Landmark – colour A landmark is a visual object, which could be seen from a certain distance. Consider to change multiplicity and make the attribute mandatory.	Consider to change multiplicity and make the attribute mandatory. + colour: colour [1..*] {sequence}	This can be as national rule and ARM prefer to leave this attribute optional
PS	ntou	6.2	p.18, Fig.4	te	'Equipment' is the superType of all AIS Aids To Navigation feature types (Physical, Synthetic and Virtual) and Radio Station (i.e. DGNSS or AIS Base Station). Therefore, according to FC, it is mandatory for such 'Equipment' object to be associated with a parent 'Structure Object'. VirtualAIS Aids To Navigation may not have any 'parent structure' to be associated to.	Merge the Abstract features 'Structure Object' and 'Equipment' into their superType 'Aids To Navigation'. So that it is not necessary for AIS Aids To Navigation features to be associated with any structure, in addition, they can also use the 'AtoN fixing method' information binding (originally of the 'Structure Object').	The parent role should have 0..1 multiplicity. Change must be applied to S-201 so that S-125 can inherit the model. ARM will make the changes.
PS	ntou	6.2	Fig.4	te	PhysicalAIS Aid To Navigation (the message) is broadcast by an AIS AtoN Station which is physically located on the aid to navigation. 1. It is not a 'virtual AIS'. It is not 'broadcastBy' an AIS Base Station.	Remodel the PhysicalAIS Aid To Navigation, e.g. remove the association with AIS Base Station/Radio Station, and the role as 'Virtual AIS'.	Change the association name as VirtualAton

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Annex S-125 comments and editorial observations

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PS	ntou	6.2	Fig.4	te	PS Fig.4 have the enumeration 'categoryOfPhysicalAidToNavigation', which is also in FC, but that attribute is not used by the feature type 'PhysicalAidToNavigation' either in PS or FC.	Clarify whether 'categoryOfPhysicalAidToNavigation' (Physical AIS Type 1, 2, 3) is to be included in S-125.	The attribute should be included. Need to review whole AIS AtoN data model
PS	ntou	6.2	Fig.4	te	In this Ed.0.0.3, data models of 'VirtualAidToNavigation' and 'PhysicalAidToNavigation' are exactly the same. Using 'estimatedRangeOfTransmission' in 'VirtualAidToNavigation' and 'SyntheticAidToNavigation' features would be misleading. The signals for them are not transmitted from where they are located.	Remove the 'estimatedRangeOfTransmission' attribute from VirtualAidToNavigation and SyntheticAidToNavigation feature types Put 'estimatedRangeOfTransmission' in the transmitting station (AIS Base Station or AIS ATON Station) instead.	The attribute is needed. Need to review whole AIS AtoN data model. ARM will do this.
PS	ntou	6.2	Fig.4	te	The enumeration of 'virtualAidToNavigationType' is rather limited and not consistent with relevant ITU standard. According to ITU R-M.1371-5 Table 74, there are 32 codes to indicate the nature and type of aids to navigation. Commonly used cases: code 1 - 'reference point' ; code 3 – 'Fixed structures offshore...'	1. To avoid confusion, change that enumeration name to 'virtualAidsToNavigationType' for use in all three AIS feature types (Physical, Synthetic, Virtual). 2. In the enumeration, include all those types listed in the ITU standard. 3. It would be helpful for both encoding and the use of S-125 products, if listedValues & codes used in the enumeration are consistent with those in the ITU Standard.	Agree with it and investigate how to do

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PS	GER	10.6	10.6		<p>10.6 Unknown Attribute Values</p> <p><i>When a mandatory attribute code or tag is present but the attribute value is missing, it means that the producer wishes to indicate that this attribute value is unknown. Missing mandatory attributes must be “nilled”.</i></p> <p>Mandatory or not? Making attributes mandatory reflects the need of essential information. If a certain value is missing the producer needs to investigate.</p> <p>If attribute information could be “nilled” the attribute doesn’t seem to be important enough to be mandatory.</p>	<p>Either consider the removal of the words “mandatory” in 10.6. and check complete PS if all mandatory attributes do not have “volunteer” information.</p> <p>Or search for these mandatory attributes and consider to remove the mandatory status.</p> <p>Germany prefers to keep the mandatory attributes and make all included values mandatory, too.</p>	<p>Nilled value need to be retained as data producer transition to better data quality</p> <p>Comments on where nilled value attributes make the dataset useless are welcomed as this will help improve DCEG and validation check.</p>

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PS	UKHO	11.3	Exchange set	ge	<p>Data which conforms to this product specification must be delivered by means of an exchange set. An S-125 exchange set will consist of one or more Marine AtoN datasets. An exchange set may also include one or more support files containing supplementary information encoded in separate files. These are linked to the Marine AtoN dataset features, by feature and information type attributes defined in the application schema, e.g., fileReference. Each exchange set will include a single (XML) catalogue file. S-125 exchange set catalogues conform to S-100 4.0.0 Figure 4a-D-2 without modification, containing discovery metadata for each Marine AtoN dataset as well as support files. S-125 exchange set structure conforms to S-100 4.0.0 Figure 4a-D-3 without modification.</p> <p><i>Should the standard reference specific figure number from the S-100 spec as these may change, which in turn will require a change to the S-125 spec. If these links between the two specs are unknown then they are likely to become misaligned. It may be better to reference S-100 Ed 4.</i></p> <p><i>S-100 Edition 5 has now been published. Will this version of S-125 be updated for Ed 5 or will that happen in a subsequent version of S-125?</i></p> <p><i>S-125 will be delivered in an S-100 Exchange Set which could contain other S-100 products, therefore the concept of a S-125 Exchange Set does not exist.</i></p> <p><i>Figure 12 is not specific to S-125 and defines an S-100 Exchange Set. I believe this diagram should not be in the</i></p>		<p>Agree to change accordingly, An S-125 exchange set will consist of one or more Marine AtoN datasets.</p> <p>Agree to change accordingly, S-125 exchange set catalogues conform to S-100 without modification</p> <p>Agree to delete the figure 17-2</p>

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					<p><i>S-125 specification but should be held in the S-100 specification and referenced if necessary.</i></p> <p><i>The Ed 5 S-100 Exchange Set UML:</i></p> <p>Figure 17-2 – S-100 Exchange Set</p>		
PS	GER	11.4	11.4	te	<p><i>Picture files must be in the Tagged Image file Format (TIFF) [Edition 6.0].</i></p> <p>What was the reason for the limitation of the picture format?</p>	Consider to allow more picture formats, e.g. .jpg	Agree to add JPEG2000. S100_SupportFileFor mat limit other option for ECDIS.

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PS	UKHO	11.6	Dataset Naming Convention	ge	<p><i>This section outlines a dataset naming convention for S-125. S-100 Ed 5 also outlines a naming convention and these two are not aligned. S-125 spec limits names to 17 characters. has been done for a specific reason? Below are the details from the S-100 Spec</i></p> <p>S-100 5.0.0 Final Clean Web.pdf (iho.int)</p> <p>17-4.3 Storage and Management of External Resources of S-100 Ed 5.0.0 defines dataset naming and states supporting resources shall follow the same naming convention XXXXXXXXXX[EXT] • XXX is the product code (for example, 123 is for Maritime Radio Services; 101 for ENC) • YYYY is the producer code according to the Producer Code Register • XXXX is an arbitrary length unique code in alphanumeric characters including any differentiating characters as required. The code shall be unique for the data producer (that is, different data producers may use the same code) and not re-used. • EXT is the file encoding specific file extension</p>		Agree to change. Will confirm to S-97
PS	UKHO	11.8	Catalogue File Naming Convention	ge	<p><i>The catalogue file naming convention is set out in the overarching S-100 specification is there is a need to repeat it here.</i></p>		Agree to delete the catalogue file naming convention

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PS	UKHO	12.2	Production process for base and update datasets	ge	Data Producers should follow their established production processes for maintaining and updating datasets. Data is produced against the DCEG and checked against the appropriate set of validation rules in Appendix X. <i>Expand to Data Classification and Encoding Guide (Is this the S-101 DCEG?)</i>		Agree to add DCEG in 3.2 Abbreviations
PS	UKHO	14.1	Metadata Introduction	ge	The Marine AtoN metadata specification conforms to the S-100 metadata specification in Part 4a, which is a profile of the ISO 19115-1 standard. These documents provide a structure for describing digital geographic data and define metadata elements, a common set of metadata terminology, definitions, and extension procedures. <i>This is now S-100 Edition 5 Part 17 Section needs to be updated inline with S-100 Ed 5 This section refers to S-100 and contains a copy of a UML diagram from the S-100 spec. The user should be referred to the S-100 spec rather than coping info from S-100 spec into a product spec. This will allow consistent updating i.e. if a change is made to S-100 spec it is made only in one place.</i>		Agree to update this part when S-100 5.x supports implemented
FC	ntou	SimpleAttribute	referencePoint	ed	valueType of referencePoint should not be 'date'	Have it corrected. (into a locationMRN ?)	Agree to delete the attribute type
FC	ntou	FeatureType	SynteticAIS	ed	Typo: 'Syntetic' should be 'Synthetic'	Name/definition/code of the feature type, 'Syntetic' should be corrected into 'Synthetic'.	Agree to fix

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