

IHO MASS PT S100 Gap Analysis

Member State/Organization	Korea – KHOA(Korea Hydrographic and Oceanographic Agency)
S100 Standard Reviewed	S-125 Marine Aids to Navigation
Maturity of Standard	Working draft, S-125 draft for 1.0 will be provided in early 2023 to NIPWG, IHO
S100 Standard Chair	Sewoong OH (S-201 Task group of ARM/IALA on behalf of NIPWG/IHO)

Issue/Requirement (take from Spreadsheet)	Issue addressed?	More content?	Gap in standard?	Potential Solution/s	Ease to implement?
S-125 Marine AtoN data can be an extended list of lights required in SOLAS Chapter V. The S-101 ENC already includes Aton data, but the main difference is that S-125 dataset is to be updated more frequently than S-101 dataset.	✓	<input type="checkbox"/>	<input type="checkbox"/>		Choose an item.
S-125 data needs to be provided for MASS to identify the latest status information of AtoN included in the S-101 ENC. S-98 Interoperability between S-101 and S-125 should be applied.	✓	<input type="checkbox"/>	<input type="checkbox"/>	The S-125 is included as Step 2 of the S-100 implementation roadmap, and interoperability between S-101 and S-125 needs to be defined.	Moderately
In order to provide S-101 AtoN Status through S-125, the unique identifier needs to be the same.	✓	<input type="checkbox"/>	<input type="checkbox"/>	It's recommended to consult on the use of same unique identifiers between S-101 ENC production and S-125 marine Aton production	Moderately
AtoN status (Unlit, Missing, Damaged, Off position, Withdrawn, Removal, Replacement) are frequent and varied. In order to retain the	✓	<input type="checkbox"/>	<input type="checkbox"/>	Supplements the S-125 in parts of data delivery and dataset maintenance	Easy

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latest navigation information in MASS, the service cycle of S-125 data including Aton status should be short					
Since MASS identifies the own ship's position through the GNSS and positioning sensor, it does not determine their position using the Aton included in the S-125 data. It is necessary to provide information suitable for the purpose of MASS.	<input type="checkbox"/>	<input type="checkbox"/>	✓	Review the use cases of using Aton in MASS and supplement the Aton data to be suitable for the operation of MASS	Hard
MASS can make routes by using the Aton included in the S-125 data. However, when monitoring the route, proper thematic attributes and spatial attributes should be provided to understand the intentions of the Aton (lateral, cardinal, isolated, safe water, special purpose) in the MASS AI algorithm.	<input type="checkbox"/>	✓	<input type="checkbox"/>	Revision of the data model so that the intended content of Aton can be expressed with spatial attributes and thematic attributes.	Hard
The floating Aton(eg. Light buoy) continuously changes its position within the mooring chain length limit due to the influence of currents. The ship can receive real-time position of floating Aton through AtoN AIS, but a real-time position update method at the S-125 level needs to be considered.	<input type="checkbox"/>	<input type="checkbox"/>	✓	Consider a data model and service method that can update the position of floating Aton in real time	Moderately
Since special purpose AtoN, such as marine operation, become obstacles to MASS navigation, it's necessary to use a indication method that can accurately represent the marine construction boundary rather than a single position.	<input type="checkbox"/>	<input type="checkbox"/>	✓	Review of the spatial coordinate marking method that can indicate the boundary of the marine construction area based on the representative point of the Aton installed to inform the construction area.	Moderately

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<p>Since the virtual AtoN (Virtual, Synthetic) included in the S-125 data are useful for the route planning and route monitoring of MASS, the active creation and utilization of virtual Aton should be considered.</p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>Guidance on the production and operation of virtual Aton is needed.</p>	<p>Moderately</p>
<p>The S-125 data can be produced as integrated dataset for the responsible area, but considering the ease of service to MASS, it's necessary to produce and service for each route.</p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>Need reference guidance on S-125 dataset and cell design.</p>	<p>Moderately</p>