

IHO MASS PT S100 Gap Analysis

Member State/Organization	USA (NOAA)
S100 Standard Reviewed	S127 Marine Traffic Management
Maturity of Standard	Version 1.0.0 (Dec 2018) released for implementation and testing purposes; V1.0.1 (Dec 2019) under WG review
S100 Standard Chair	Elvind Mong (Canada)

Issue/Requirement (take from Spreadsheet)	Issue addressed?	More content?	Gap in standard?	Potential Solution/s	Ease to implement?
MASS will require the ability to exchange route information between vessels.	<input type="checkbox"/>	<input type="checkbox"/>	✓	MASS will also require the ability to report route information to vessel traffic services	Hard
MASS will require VTS areas to be captured as polygons with relevant attribution.	✓	<input type="checkbox"/>	<input type="checkbox"/>	S-127 includes Vessel Traffic Service Area feature	Choose an item.
MASS will require the natural language data in publications, charts (pick reports) and MSI to be made machine readable and interpretable. Natural language is difficult for machines to read and interpret, we need to move to a feature and attribute model for all aspects of data for MASS. This will also need to cover meta data for the actual data.	<input type="checkbox"/>	<input type="checkbox"/>	✓	As with other standards, all S-127 features and information classes are derived from one of the abstract classes FeatureType and InformationType. InformationType has attributes for fixed and periodic date ranges, name associated with the individual information object if any, source information, and a textContent attribute that allows text notes or references to be provided for individual instances where appropriate.	Moderately

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MASS will require historic marine accident or incident layers for risk profiling a particular area.	<input type="checkbox"/>	<input type="checkbox"/>	✓	Possible inclusion with Concentration Of Shipping Hazard Area or new feature type	Hard
MASS will require historical traffic pictures, and if there are any anomalies in operations compared with historical traffic or adverse weather or unforeseeable events (e.g. freak wave) and behave differently, they can alert the human overwatch who can then revert to a Degree 3 control.	<input type="checkbox"/>	✓	✓	S-127 includes Concentration Of Shipping Hazard Area feature, the standard explicitly does not include natural conditions (see note below)	Hard
MASS will require ferry routes and the ferry route timetables. Ferry routes could be captured as polygons or lines with attribution in a machine readable format that shows the ferry timetable.	<input type="checkbox"/>	✓	<input type="checkbox"/>	Possible inclusion with Concentration of Shipping Hazard Area or new feature type; timetables could be included in Information Type	Moderately
MASS need to be aware of and go through Traffic Separation Schemes, but today there is no way for a Degree 4 MASS to know that a TSS exists. A method of identifying TSS and then transitioning towards it and through it safely will be crucial.	✓	<input type="checkbox"/>	<input type="checkbox"/>	S-127 includes Routing Measure feature type	Choose an item.
Designated operating areas for MASS small craft? Geo-fencing	<input type="checkbox"/>	✓	<input type="checkbox"/>	Addition to other included specially designated locations (such as military practice areas, security areas, and areas need special caution)	Easy

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Notes:

6.2.1.1 Overview of domain features and information types

Marine Traffic Management data products include tracks and routes, vessel traffic services, pilot services, underkeel clearance, and certain types of specially designated areas which affect ships routing. It does not include protected areas, radio services (radio stations, NAVTEX, weather or ice forecasts, NAVAREAs, METAREAs, etc.), natural conditions, or harbour services. The broad categories of geographic features included in the S-127 domain are:

- Tracks and routes, including IMO and non-IMO routing measures and recommended tracks.
- Vessel traffic services and related features such as calling-in points, radar ranges, and signal stations.
- Pilot districts, pilot boarding places, and pilot services.
- Water level information features, including underkeel clearance information features and waterways.
- Specially designated locations which affect navigation or provide traffic services, such as military practice areas, security areas, places of refuge, and areas needing special caution for reasons other than natural hazards or environmental protection.