Marine Information Overlays (MIOs)

Part 2: Relationship to Current/Future IHO Standards

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Marine Information Overlays (MIOs)

- Chart and navigation-related information that supplement the minimum information required by IMO ECDIS
  - Additional, non-mandatory
  - Not covered by existing standards (e.g., IHO S-57, IHO S-52, or IEC 61174)
  - The "everything else"
  - Points, lines, areas, features, & objects

S-57 ENC Product Specification

- Used by HOs to produce ENC data for ECDIS
- Current version (3.1) recently updated (3.1.1) to meet new IMO requirements:
  - Particularly Sensitive Sea Area (PSSA)
  - Archipelagic Sea Lanes (ASL)
- Since MIOs are used with ENCs, they should conform – as much as possible – to the ENC Product Specification.

General MIO Content Specification

Purpose:

All MIOs will be based on a general, overall MIO Content Specification.

- Will be similar to Additional Military Layers (AMLs) developed/used by NATO.
- ENC software manufacturers will not have to develop new software tools to deal with MIOs.
- Existing ECDIS/ECS can read MIOs in the same manner as ENCs and AMLs.

MIO Encoding Guide

Purpose: Will Provide detailed guidance on how specific types of MIOs are encoded.

Using existing/new S-57 object classes, attributes, and attribute values:

1. Provides basis for creation
2. Describes relationship to real-world entity
3. Provides criteria for its proper use
4. Gives specific encoding examples

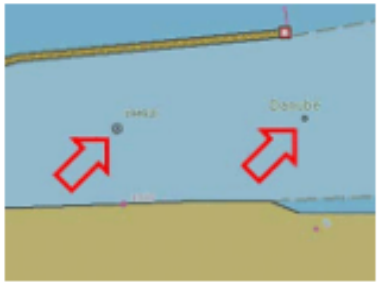
Approach will be similar to what is being used to encode Inland ENC data for rivers and inland waterways.

L - Tracks, Routes

L.3 Supplemental Navigation References

L.3.2 Distance Mark Along Waterway Axis (C)

A distance mark indicates the distance measured from an origin and consists of a distinct location without special installation, used to serve as a reference along the waterway. (Adapted from S-57 Standard).

Graphics	Coding Instructions	S-57 Object Coding
IENC Symbolization 	A) EU: Preferably the waterway axis shall be the middle line between the border lines of the navigable channel rather than the middle line between the riverbanks. B) US: Distance marks (river miles) should be along the recommended sailing line (see L.1.1). Measurement between these dismar objects may not yield uniform or exact values, as they are used as a historic reference location. C) Encode the referenced unit of measure using the hunits attribute D) The point has to be a connected node. E) If the ISRS code is available it has to be encoded. (refer to General Guidance section H)	**Object Coding** **Object Class =** dismar (P) (M) catdis = [1 (distance mark not physically installed)] (M) wtwdis = [(value of unit according to hunit)] (O) unlocd = [ISRS code] (C) hunits = [3 (kilometres), 4 (hectometres), 5 (statute miles), 6 (nautical miles)] (M) SCAMIN = [EU: 8000; US: 120000] (M) SORDAT = YYYYMMDD (C) SORIND = c2,c2,c5,c…

International MIO Development

IHO-IEC Harmonization Group on Marine Information Overlays (HGMIO)

- Terms of Reference
- meets once year; next meeting June 2007 at Univ. of NH
- Anyone can participate

Recommended Procedures for Development of MIOs (Dec 2004)

- How a competent organization identifies MIO requirements
- Information content for MIO category
- Development of new S-57 objects & attributes
- Colours and symbols (based on IHO S-52)
- Test and evaluation
- Production and dissemination
- Regulatory requirements for use (if needed)

Overall Framework

- S-57 3.1/3.1.1 where applicable
- Use existing S-57 Object Catalogue
- Use of IHO Registry to register new S-57 objects & attributes
- "General" MIO Content Specification
- MIO Encoding Guide
- Use Open ECDIS Forum (www.openecdis) for communication and & publication
- Align with future IHO S-100