

# Office of Coast Survey

## IHO S-100 and S-101

*21<sup>st</sup> Century Framework Data Structure  
for Hydrographic and Related Data*

# Why Switch to S-100 ?

- Join mainstream GIS
  - maximizes access to COTS software and development
- New components not developed in isolation
- Easier use of hydro data beyond HOs and ECDIS users
  - coastal zone mapping, security, inundation modeling ...
- Extensible and active feature catalogue registry
- *Plug-and-Play* updating of data, symbology and software enhancements

# S-100 will support :

- Imagery and gridded data
- High-density bathymetry
- Seafloor classification
- 3-D and time-varying data (x,y,z and time)
- Dynamic ECDIS
- Supplementary layers - MIOs
- Marine GIS
- Web-based services
- other maritime data applications ...

# S-100 - Framework Data Structure for Hydrographic and Related Data

- Broad geospatial framework structure
  - Not specific to ECDIS or charting
  - Capable of accommodating other requirements
  - Increasing interest from prospective e-  
Navigation data providers
- Based on ISO 19100 series of geographic standards
- Multiple Encodings for different uses
  - ISO 8211, GML, XML

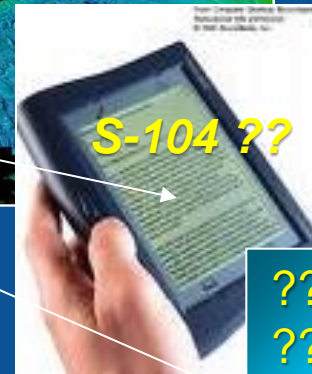
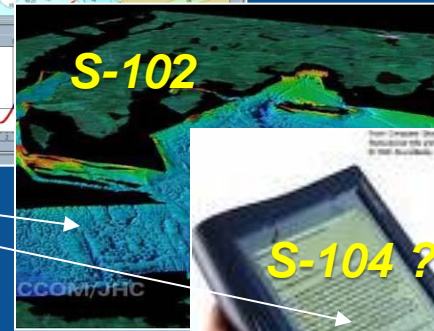
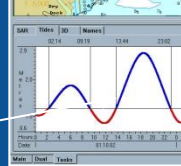
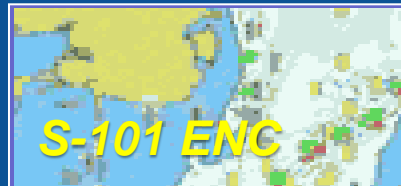
# Additional Objectives

- Content and carrier are independent
- No need for new versions of product specifications or system revisions
  - *Plug-and-play* updating
- S-100 structure can easily accommodate present and future requirements
  - ECDIS
  - e-Navigation
  - Inland and Port ENC
  - Nautical Publications

# S-100 and Product Specifications



... contains all the components to make different product specifications for all types of hydrographic data



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?????? ...  
S-10?...

# S-101

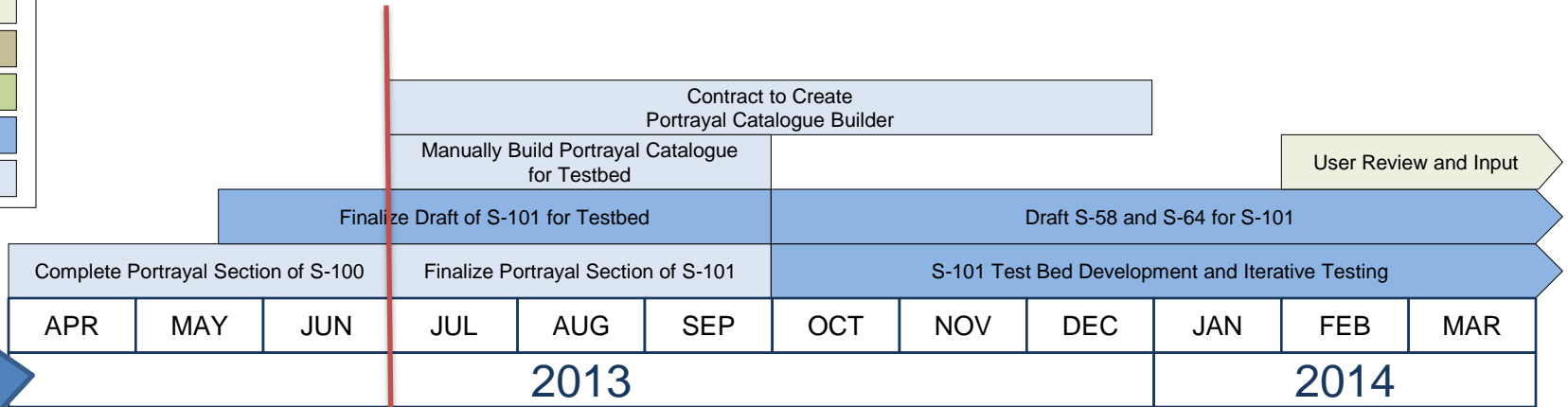
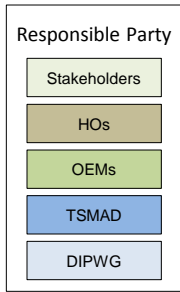
- S-101 represents a major step forward in product specifications for Electronic Navigational Charts
- Based on S-100 – the Universal Hydrographic Data Model
- Will eventually replace S-57 (in the future)
  - Utilize a convertor from S-57 to S-101 to allow HO's time to upgrade their production systems

# S-101 New Functionality

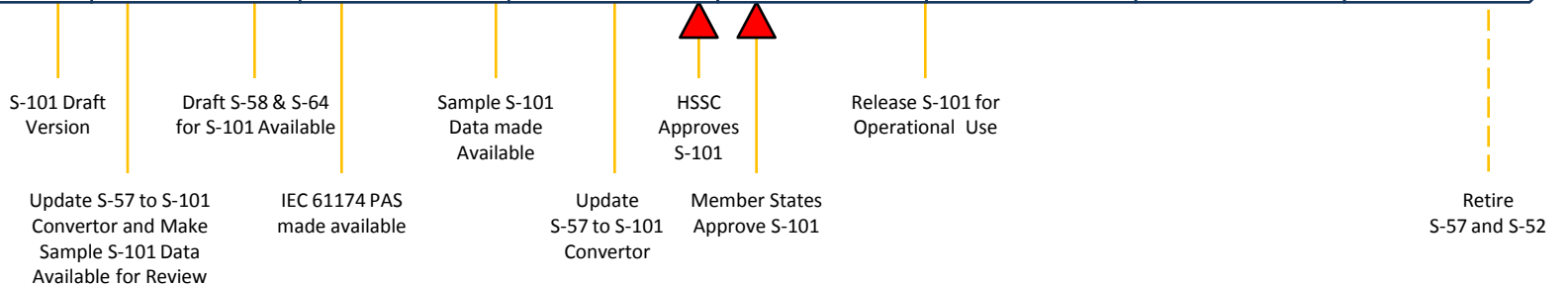
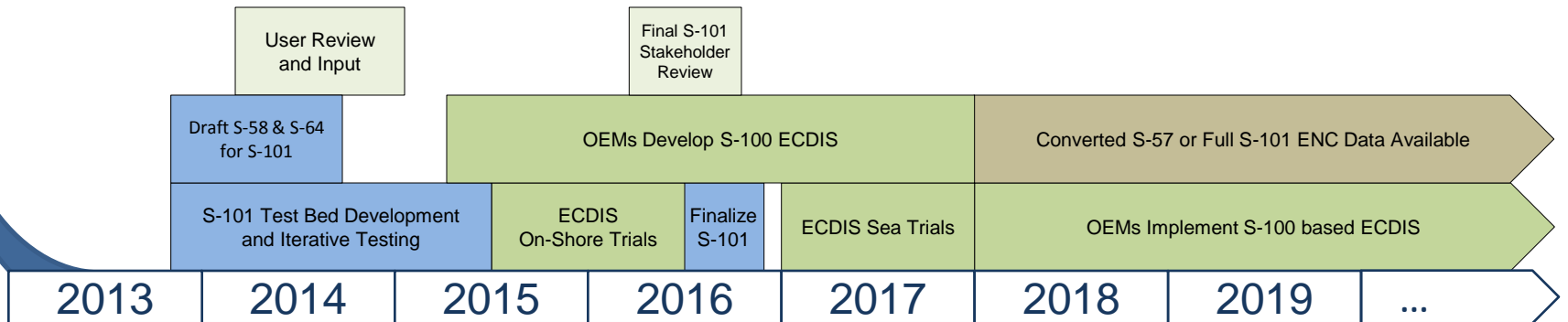
- Dynamic ENC content
  - Exchangeable Feature and Portrayal Catalogues
  - Machine Readable
    - New content will NOT take years to implement
    - New content will NOT require new type approval for ECDIS
  - Allows for real-time tidal information
  - Interoperable with other S-100 product specifications
    - Sailing Directions
  - Expanded discovery of metadata
    - High Resolution Bathymetry



# S-101 Development and S-100 Testbed Timeline



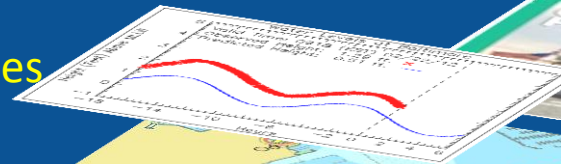
Portrayal is the major dependency



# Beyond S-100

- Multiple Product Specifications are in the works
  - Coast Pilot Information
  - Marine Protected Areas
  - Ocean Forecast
  - Surface Currents

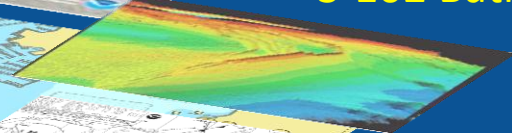
S-10X Tides



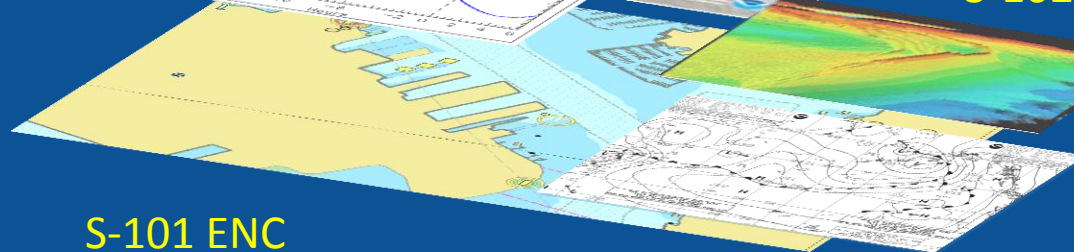
S-10X Nautical Publications



S-102 Bathymetry



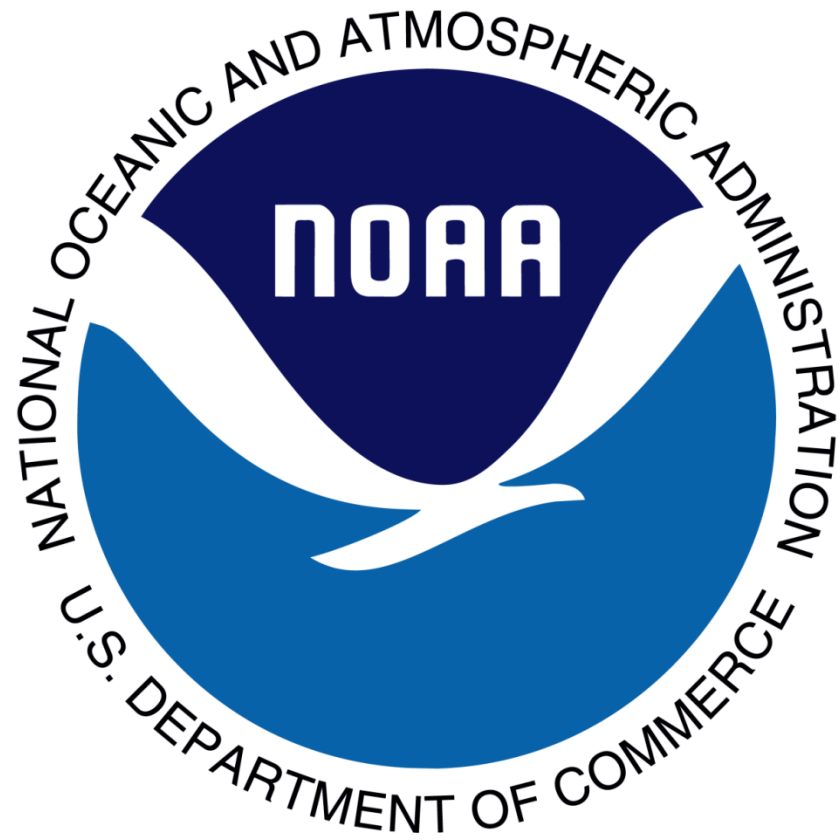
S-101 ENC



WMO – Met Ocean

# What does this all mean?

- Improved Standardization between hydrographic products
- Improved data interoperability
- Data is not just for Shipboard Navigation



# Agenda

- S-100
- S-101
- Beyond S-100
  - Nautical Publications
  - Weather
  - Ice
  - Surface Currents

