S100WG

State of the Workplan

State of the Workplan

- S-100 Edition 4.0.0
- S-100 Infrastructure
- S-100 Product Specification Development
- Bits and Pieces

S-100 Edition 4.0.0

- Consideration of 19 proposals
  - Metadata
  - Portrayal
  - HDF5
  - Online Communication Extension
  - Encryption

S-100 Edition 4.0.0 – Path to Publication

- 2018 Quarter 2 – consolidate approved proposals into a committee draft
- 2018 Quarter 3 – comment period open for Member States and Stakeholders (only for those parts that have changed)
- 2018 Quarter 3 – Utilize the Test Strategy Meeting to resolve any outstanding issues
- 2018 Quarter 4 – S-100 Edition 4.0.0 is published
  - S-102 and S-111 will also be released in conjunction with S-100
    - HDF5

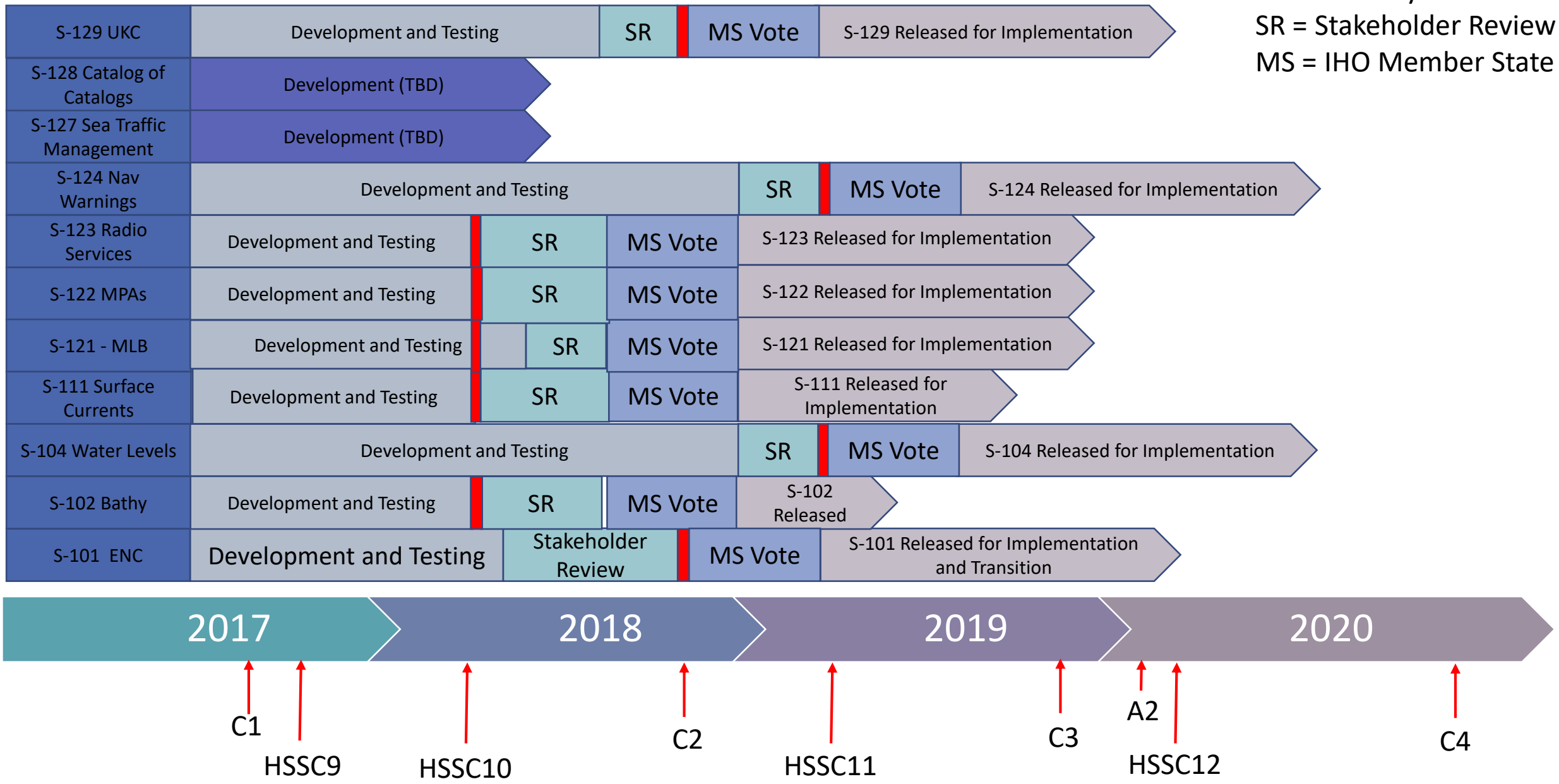
S-100 Edition 4.0.0

- Note on Encryption
  - Norway has prepared a new draft
    - Due to time constraints was not submitted as part of this meeting
  - Encryption is fairly specialized
- How to include in Edition 4.0.0 (still needs review)
  - Propose the same approach as portrayal
  - Include the draft as part of the Edition 4.0.0 draft review
  - Provides Member States and OEMs and opportunity to comment
  - Data Protection project team will hold a single day meeting in June to adjudicate any remaining issues

S-100 Infrastructure

- Tremendous progress has been made by KHOA
  - Feature Catalogue Builder
  - GI Registry
- Developed a way forward to stand up the portrayal catalog builder
  - Contract to build the S-101 Portrayal Catalog using the IHO PCB
    - Document any bugs
  - Let out a follow on contract to remediate any outstanding issues and to implement the new portrayal solution (LUA)
  - Portrayal of coverage data

C=Council
A = Assembly
SR = Stakeholder Review
MS = IHO Member State



S-100 Product Specification Development

- Scheduled for 2018 Publication
  - S-101 Edition 1.0.0
  - S-102 Edition 2.0.0
  - S-111 Edition 1.0.0
  - S-121 Edition 1.0.0
  - S-122 Edition 1.0.0
  - S-123 Edition 1.0.0

Bits and Pieces

- S-98 Interoperability Specification
- S-100 Master Plan Updates
  - Made it more general
- S-100 Product Specification Development Guidebook
- Still need to address S-100 within the context of IMO Performance Standards …

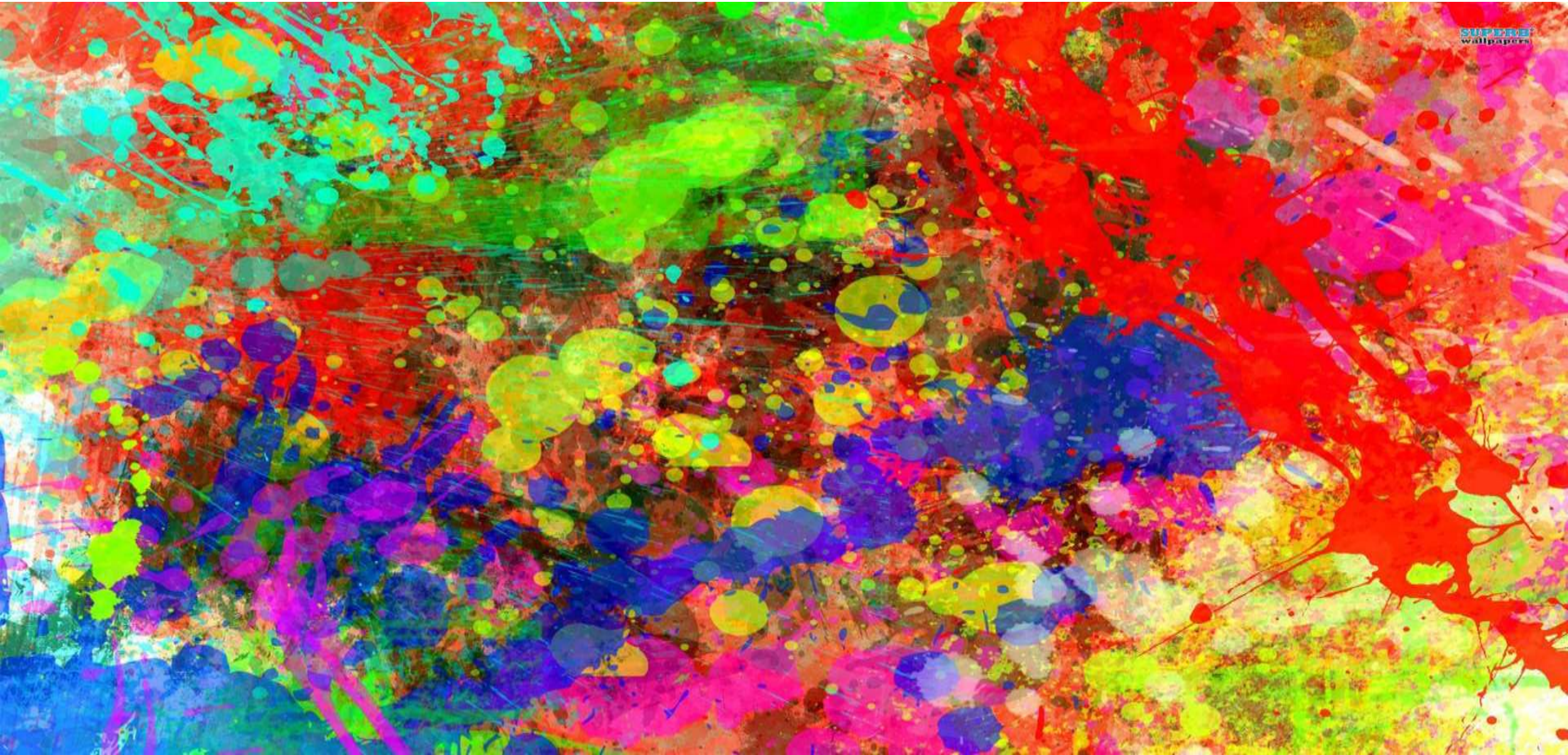
Agenda Item 5.1 –
S-100 Interoperability Specification

S-100 Interoperability Specification

- New Name – Same objective
  - S-98 Specification for Data Product Interoperability in S-100 Navigation Systems

Specification No.	Title
S-101	Electronic Navigational Chart (ENC) / Cartes électroniques de navigation
S-102	Bathymetric Surface / Surface bathymétrique
S-104	Water Level Information for Surface Navigation / Information de hauteur d'eau pour la navigation de surface
S-111	Surface currents / Courants de surface
S-122	Marine Protected Areas / Aires marines protégées
S-124	Navigational warnings / Avertissements de navigation
S-411	Sea Ice (WMO-IOC Joint Technical Commission for Oceanography and Marine Meteorology [JCOMM]) Glace de mer (Commission technique mixte OMM-COI pour l'océanographie et la météorologie marine [JCOMM])
S-412	Met-ocean forecasts (JCOMM) Prévisions météo-océanographiques (JCOMM)

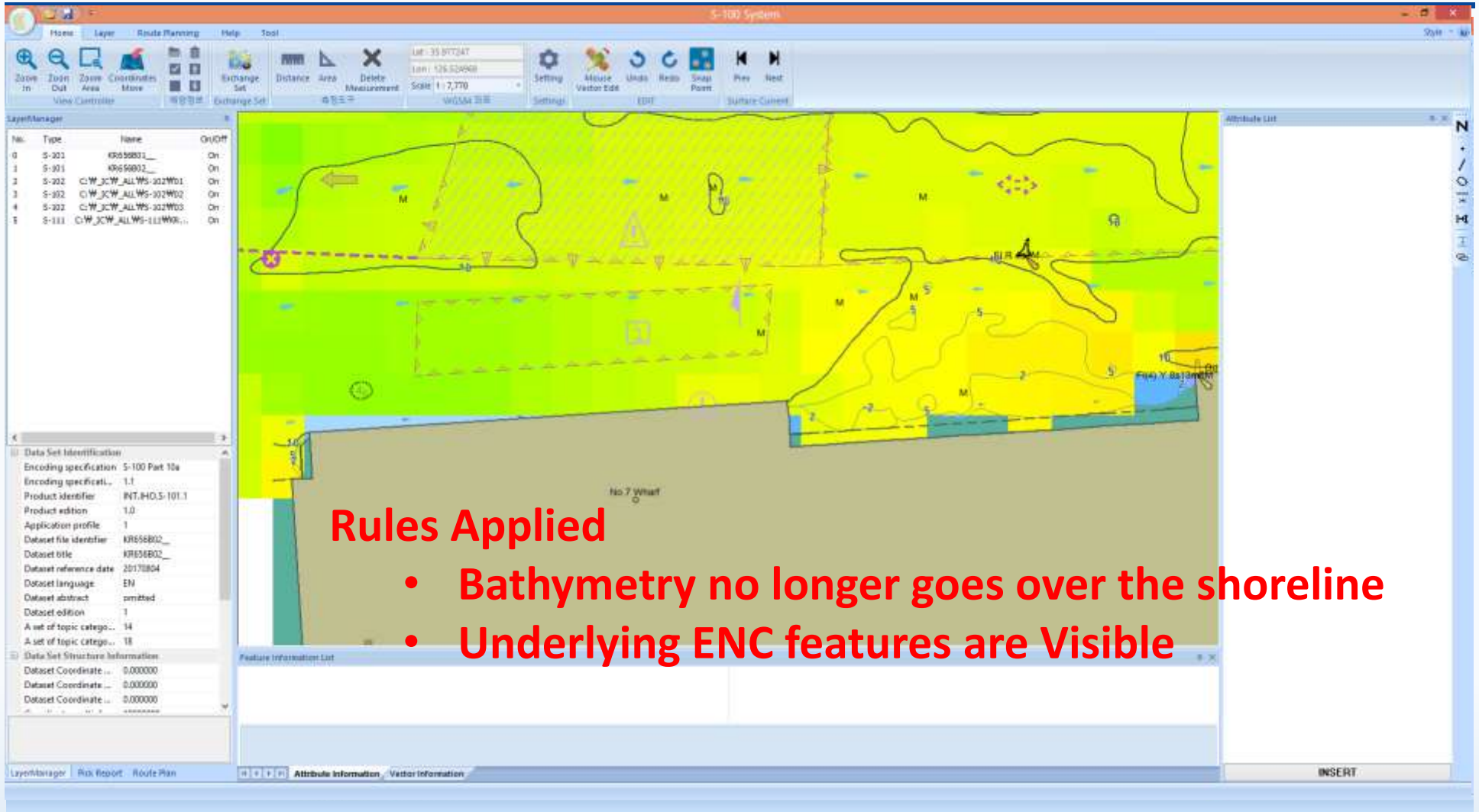
BAD Interoperability



Improved Interoperability

- Takes into account how specifications relate to each other
  - Interleaving of features between products
- Harmonizes Portrayal between products

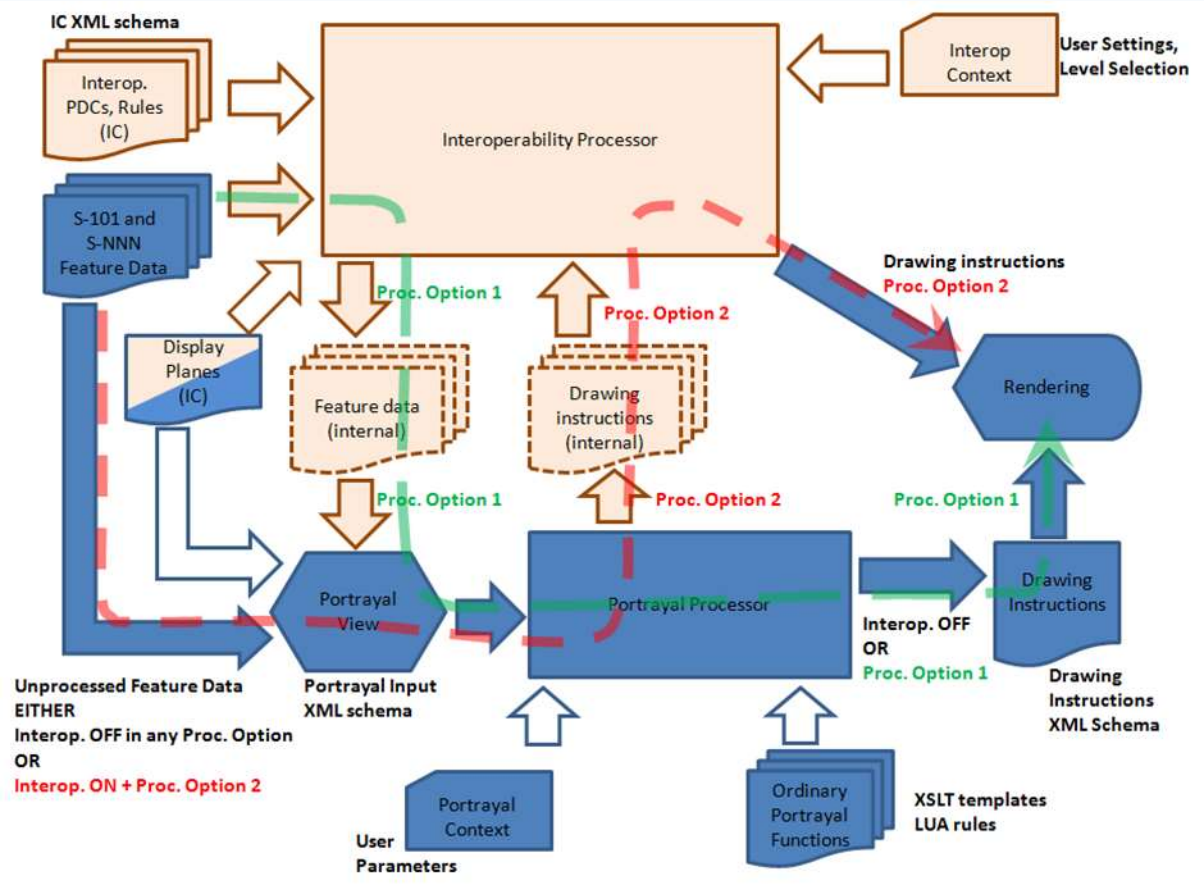
Better Interoperability



Interoperability Levels

- Level 1 – Data interleaving
  - Data is interleaved with each other based on display plane and drawing priority
- Level 2 – Type based selectivity and feature class replacement
  - Allows for the suppression of all features of a specified feature type in a specified product
- Level 3 – Feature hybridization (Currently out of scope)
- Level 4 – Spatial Operations (Currently out of scope)

Basic Interoperability Processing



Path to publication of S-98 edition 1.0.0

- December 2017 – S-98 sent to the S-100 stakeholder community for comments
  - Denmark
  - NIPWG
    - France
    - Sweden
    - USA – NGA
- Majority of the comments are editorial in nature – some were substantive that need to be addressed

NIPWG Members Input

- I would have liked to go into the review of this impressive document but when reading it I am looking first of all for the principles of the services (i.e. functionalities) than a S-100 ECDIS is intended to offer to the end-user by combining the ENC and other S-100 products.
- As I understand the S-98, it is the specification of a technical framework for the technical implementation of concepts supporting functional principles. I also understand that another considerable work for IHO would be to populate the interoperability catalogue.
- In the S-98, functional principles appear but they are mixed with the technical implementation specification. Thus, it is difficult to have a complete view of the functional principles, and so, to have a consolidated opinion on them, and on the subsequent technical concepts for their implementation.
- Regards to the principles, we are uncomfortable with some aspects (if we understand correctly), for example with the assumption that some products are "superior" to the ENC. For us, it may depend on the end-user's context and on his own decision to prefer the information from another product than ENC. It shouldn't be reduced to single the choice of a level of interoperability.
- I am wondering if a document describing the functional principles and other requirements exists. Such document should be the guidelines on which the IHO members and other stakeholders agree before the approval of the S-98. The work on the way of the technical implementation (S-98) is ongoing and seems well advanced for test-beds. S-98 will speed up developments. Thus, it seems important to elaborate guidelines to ensure that technical developments for operational solutions, including S-98, are aligned with what the IHO members want to offer to mariners within the framework of the e-navigation.

Path to publication - Recommendations

- Q2 2018 -Incorporate the editorial changes into a revised draft
- Q2 2018 -Create a red-line for any substantive comments
- Q3 2018 Review redline at the S-100 Test Strategy Meeting
  - Address the need for a strong set of functional principles for S-98 as an executive summary of the document
- Q3 2018 – Send S-98 for a second and final round of comments
- Q4 2019 – S-100 finalizes S-98 for HSSC endorsement
- Q2 2019 – HSSC Endorses S-98
- Q3 2019 – S-98 Edition 1.0.0 is published

S-100WG is requested

- Note the comments on S-98
- Discuss the comments from NIPWG
- Endorse the path to publication

S-100 Product Specification Guidebook

Agenda Item 6.3

Background

- S-100 is a framework for increased standardization
  - Difficult to decipher
  - Over 400 pages
  - 14 parts and counting

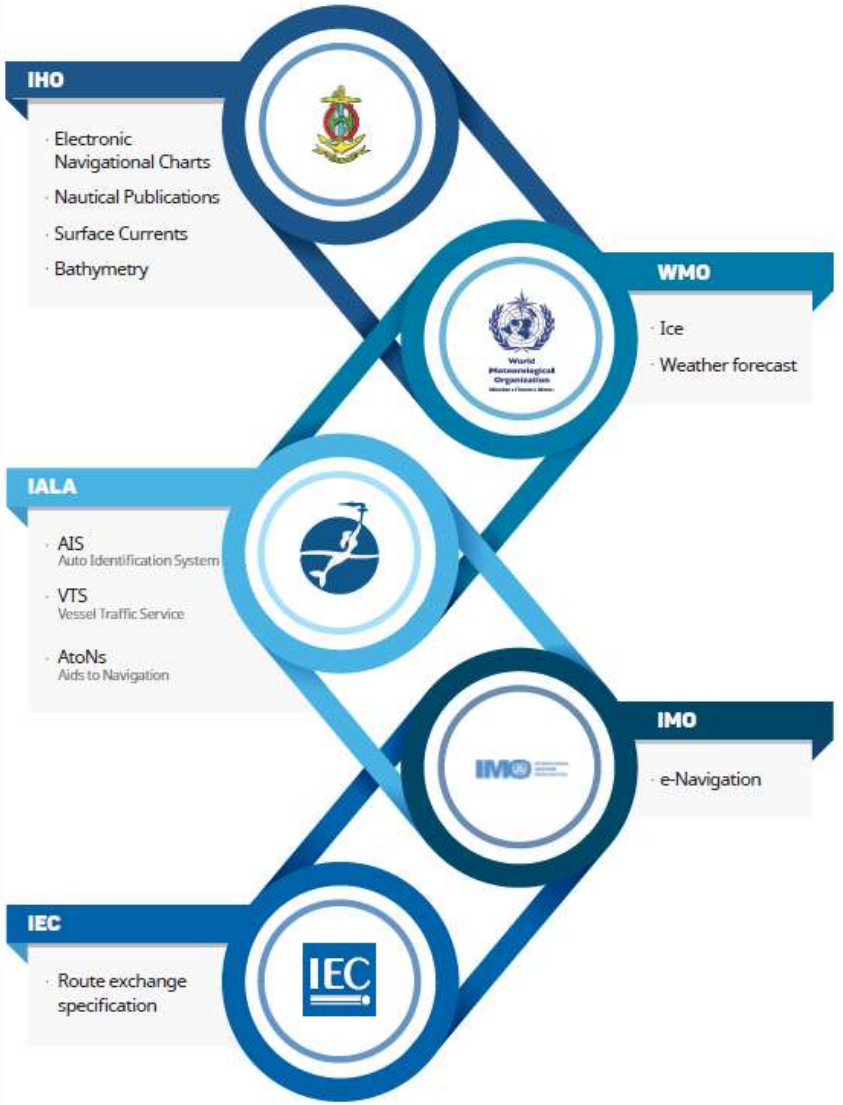
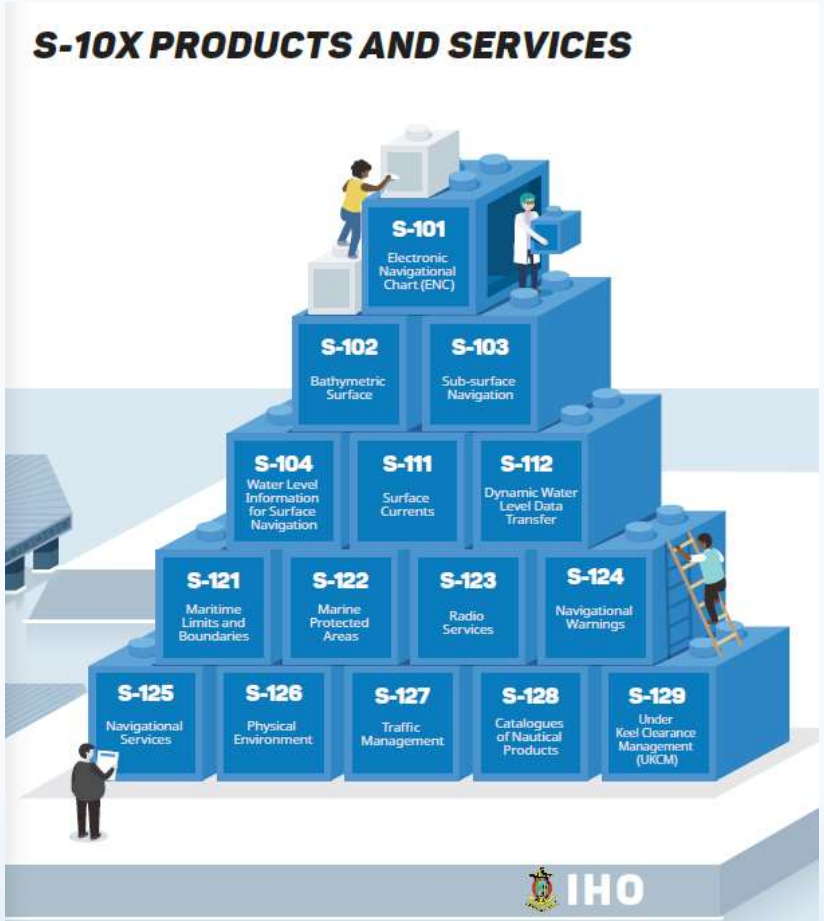


Image Credit KHOA

Background

- Need for additional guidance for developers of product specifications
- Ensures specification harmonization

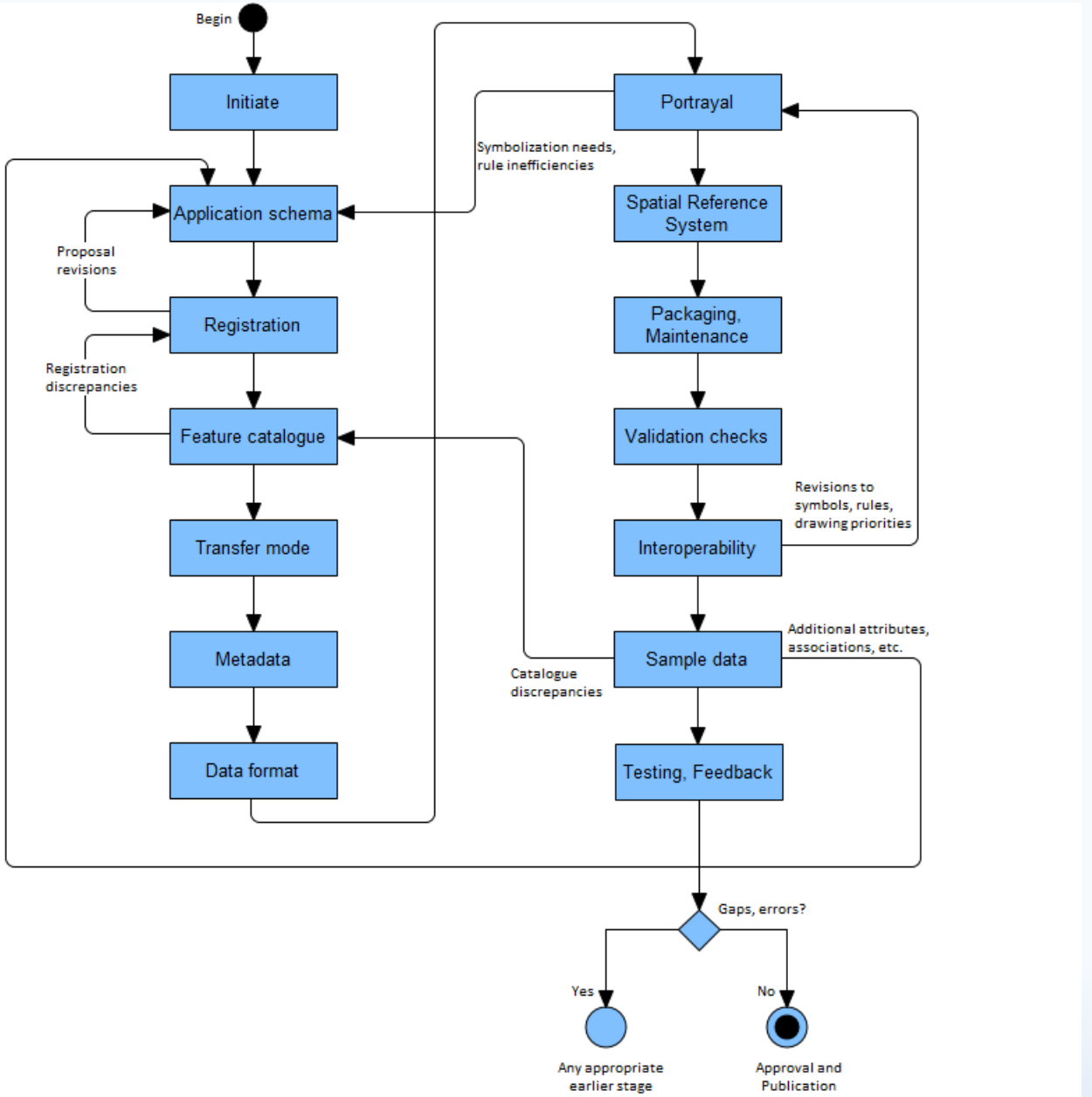


Guidance Document

- Two Parts
  - Content – defines the general content within S-100 utilizing plain language (mostly)
  - Execution – prescribes the general flow that should be followed to build a S-100 conforming product specfication

Development Process

- Initiate
- Develop Data model
- Register new items
- Build a Feature Catalog
- Define data delivery
- Metadata
- Encoding
- Portrayal
- Validation and Data Quality
- Etc…..



Next Steps

- Distribute the guidance document to various stakeholders for comment
- Reconcile Comments
- Submit to HSSC10 for publication as an official guideline

Recommendations

- The S100WG is invited to:
  - Note the initial draft of the S-100 Product Specification Developer's Guidebook
  - Invite the greater stakeholder community to provide comment and input
  - Submit the finalized Guidebook to HSSC11

S-101 – the way to publication

Agenda Item 7.4

Principal activities and achievements

Principal activities and achievements

S-101 Component	Current Status	Comment
Main Document	Testing Baseline – June 2015	• Sent out for stakeholder review in September 2014 and final comments incorporated into the testing baseline • New Items have been registered in the GI Registry. • Changes to the DCEG will undergo a controlled proposal process in order to manage change effectively.
Data Classification and Encoding Guide	Baselined – June 2016	
8211 Annex	Testing Baseline – June 2015	
Feature Catalogue	Testing Baseline – June 2015	• Awaiting the FCB connection to the GI Registry to create a new version that contains the new DCEG items.
Portrayal Catalogue	Partial Baseline – July 2015	• Caris has created a partial portrayal catalogue using the elements from S-52 in the S-100 format. • There is still more work to be done once the S-100 Register is operational. • NOAA has funded work on baselining the S-52 CSPs into XSLT 1.0 that will be part of the Portrayal Catalogue
Implementation Guidance	In Progress	Will continue to be refined during the S-101 test bed process
Validation Checks	In Progress	• Denmark has taken the lead to develop the S-101 Validation Checks

Components of an S-100 Product Specification

Main

- Specifies what is need to build a complete product
  - Feature Types
  - Geometry
  - Data formats and file size
  - Metadata

Feature Catalogue

- Features
- Attributes
- Enumerants
- Bindings
- Point, Curve or Surface

Portrayal Catalogue

- Symbols, Line Styles and Area Fills
- Rule for how the feature attribute combination must be portrayed

Validation Checks

- Minimum checks required to ensure data quality

Data Classification and Encoding Guide

- Contains the guidance for how the data should be encoded by the data producer
- Useful as a template for building the feature catalogue

Exchange Format

- Data format that is used for data exchange
  - ISO 8211 – normally used for ECDIS
  - GML – good for exchanging information outside of the ECDIS arena
  - HDF – Used for coverage based product specifciations

Change in Project Team Leadership

- Lack of time
- Position change in their home organization and does not have the time to progress S-101 forward
- ACTION REQUIRED: Member States consider nominating a new S-101 Project Team Lead
- Completed – NGA has volunteered Al Armstrong

Next Steps - 2018

- April –
  - Send out S-101 for a final round of comments
  - Build out the S-101 Portrayal Catalogue using the IHO's Portrayal Catalogue Builder
- June –
  - Hold a project team meeting (June 19-20, Monaco)
    - Adjudicate any comments
    - Face to face meeting for Validation and how new features/attributes should be portrayed
    - Shake out any large technical issues
    - Note: S-101 will utilize the Lua portrayal mechanism rather than XSLT
      - Will require an update to the PCB
      - S-100 will require an update to accommodate this methodology
- July – August
  - Finalize documentation
  - Update S-57 to S-101 convertor
- August – November
  - IHO distributes S-101 for Member State Vote
- December
  - Publish edition 1.0.0 of S-100
  - Needs to be published in conjunction with Edition 4.0.0 of S-100

Components	Edition 1.0.0 (2018)	Edition 2.0.0 (2019)	Edition 3.0.0 (2020)
Main Documentation	✓	✓	✓
Feature Catalogue	✓	✓	✓
Portrayal Catalogue	Partial	✓	✓
Validation	Partial	✓	✓
Data Classification and Encoding Guide	✓	✓	✓
Encoding Format	✓	✓	✓
Encryption		✓	✓
Alerts and Indications		✓	✓
Full Test Data Sets for Type approval		Partial	✓
Notes	Portrayal will be limited to S-52 rules translated to	Edition 2.0.0 refines all the additional rules	**Operational Edition**

The future