Hydrographic Services and Standards Committee

Report of the S-100 Working Group

HSSC7

November 2015

Principal activities and achievements

- Develop S-100 Edition 2.0.0 (A.1)
  - Published edition 2.0.0 in June 2015
  - In the process of harmonizing the UML models for S-100
    - Initially baselined by Canada
    - Finalized by Jeppesen under contract to NOAA
  - Will be published on the IHO website after review by the S100WG

Principal activities and achievements

- Develop S-100 Edition 2.0.0 (A.1)
  - Continue to handle new proposals for clarifications, corrections and extentions
    - Inclusion of HDF-5 as an encoding format (needed for S-102 and S-111)
    - Profile of SVG elements
    - Use of Alerts and indications
- Looking to publish Ed 3.0.0 in late 2016 early 2017

Principal activities and achievements

- Develop S-100 Edition 2.0.0 (A.1)
  - Recommend that the work item be modified to Maintain and Extend S-100

Principal activities and achievements

- Investigate a suitable grid referencing system for S-100 (A.2)
  - Item has been dormant for the past five years
  - It is recommended that the work item be removed

Principal activities and achievements

- Develop a guide book for using S-100 product specifications (A.3) and Develop an S-10X product specification for Auxiliary Information Layer Integration. (A.5)
  - Developing an S-100 interoperability specification for use in navigation systems
  - Initial Scoping completed at the Test Strategy Meeting 3 in September
  - NOAA/KHOA have allocated funding for the initial draft

Principal activities and achievements

- Develop a guide book for using S-100 product specifications (A.3) and Develop an S-10X product specification for Auxiliary Information Layer Integration. (A.5)
  - It is recommended that these two items be merged into a single work item: Development of an S-100 Interoperability Specification for ECDIS

Principal activities and achievements

- Develop and maintain S-100 Portrayal component (A.4)
  - Edition 2.0.0 has included the portrayal model
  - It is recommended that this work item be removed and folded into A.1

Principal activities and achievements

- Maintain and Extend the S-99 “Operational Procedures for the Organization and Management of the S-100 GI Registry (B)
  - Action HSSC6/16 has not been completed due to other pressing S-100 registry infrastructure issues
  - It is recommended that the following item be added to the S-100 workplan and the action be carried forward another year:
    - *B.1 Update S-99 and the S-100 Registry pages for the registration of S-100 product specifications in accordance with HSSC6-05B rev1.*

Principal activities and achievements

- Maintain and extend the S-100 GI Registry (C)
- Will be addressed under HSSC7-05.1B
- It is recommended that the following sub-work items be added to the S100WG plan:
  - *C.1 Update S-100 GI Register to edition 2.0.0 and re-build the web-interfaces*
  - *C.2 Connect the S-100 Feature Catalogue Builder to the S-100 GI Register*
  - *C.3 Develop web-interfaces to propose new symbology to the S-100 Portrayal Register*

Principal activities and achievements

- Review the S-100 Master Plan Annually (D.1)
  - Circular Letter 8/2014 invited MS comments to the S-100 master plan
  - As a result the following changes are proposed:

Section Number	Changes
3	Added language that there is currently no metadata register and no plans to establish one at this time
3	Added a listing of existing register domains
3	Removed duplicate information that is already contained in S-99 regarding the management of the registry
5	Updated the S-101 Section including the general timeline
6	Amended Section 6 to discuss the S-100 Test Bed
7	General edits to section 7 to account for the need of an S-100 Interoperability Specification
All	Other minor changes

Principal activities and achievements

- Review the S-100 Master Plan Annually (D.1)
  - The MP also includes an item to liaise with the IMO in regards to the regulatory process associated with the implementation of S-100 based products and services
  - The IHB reported at HSSC6 that the need for a change in the ECDIS PS was not reflected in the E-Navigation Information Paper submitted to NCSR1

Principal activities and achievements

- It is acknowledged that timing is key when it comes to initiating change to the relevant IMO standards
- It is recommend that HSSC via the IHB and other MS should propose a new work item to execute T16 of the IMO's e-navigation SIP in order to begin the process of creating a plan to update the relevant IMO standards for the use of S-100

Principal activities and achievements

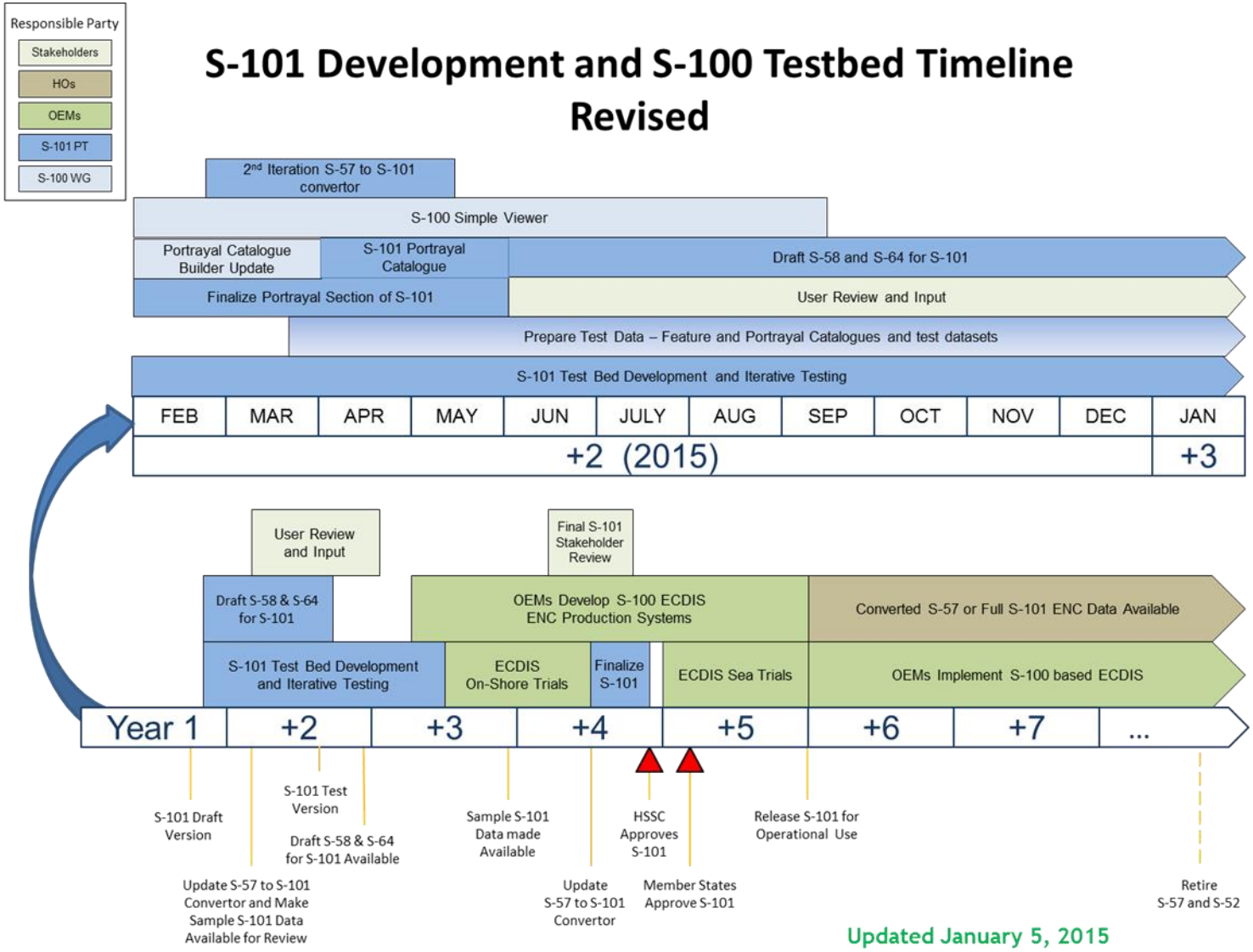
- Develop a template Product Specification for Marine Information Overlays (MIO) (D.2bis)
  - This item has been completed with the publication of S-100 edition 2.0.0
- It is recommended this item be removed from the workplan

Principal activities and achievements

- S-101 ENC Product Specification (D.3 and D.6)

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.
Data Classification and Encoding Guide	Baselined – April 2014	
8211 Annex	Testing Baseline – June 2015	Changes to the DCEG will undergo a controlled proposal process in order to manage change effectively.
Feature Catalogue	Testing Baseline – June 2015	Created using the Feature Catalogue builder that has been developed by KHOA
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.
Implementation Guidance	In Progress	Will continue to be refined during the S-101 test bed process
Validation Checks	In Progress	

Principal activities and achievements



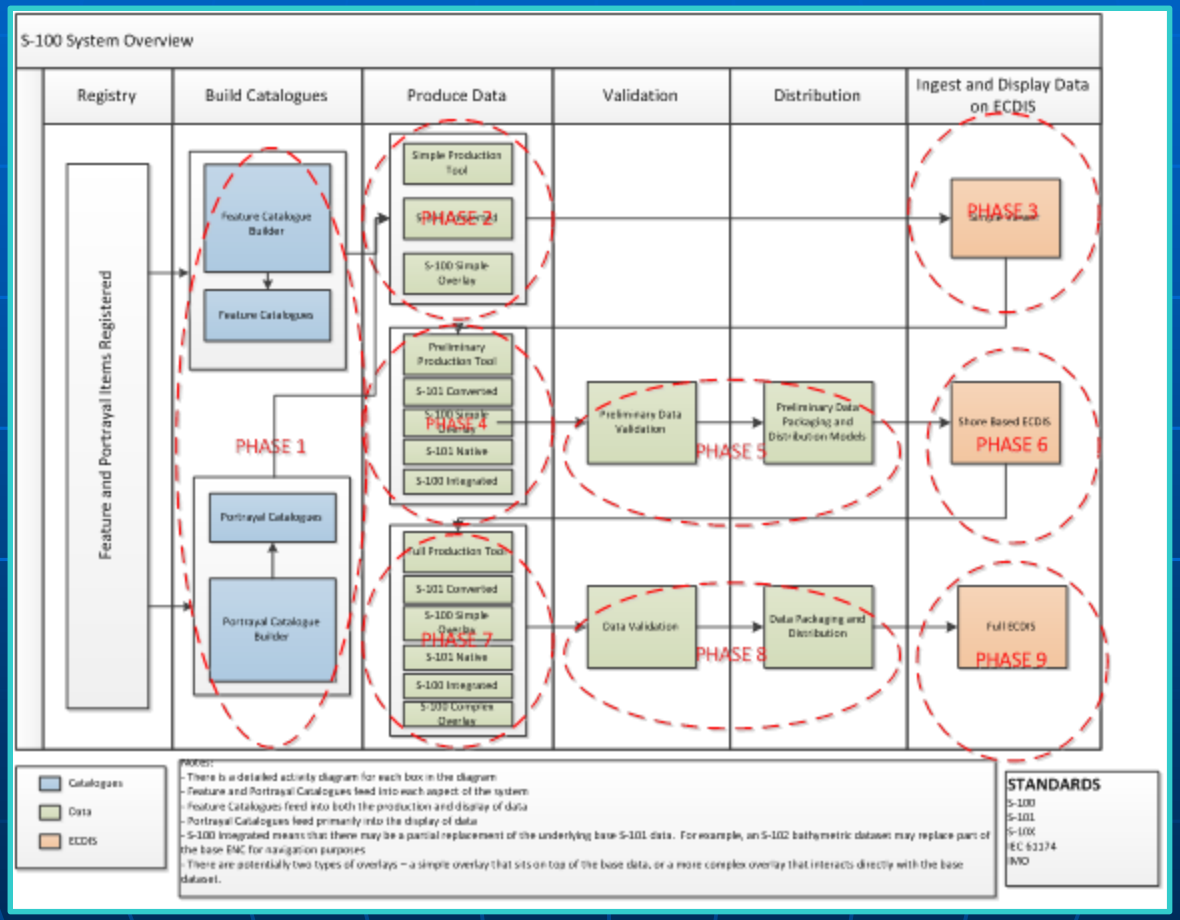
Principal activities and achievements

- S-101 ENC Product Specification (D.3 and D.6)
- It is recommended that items D.3 and D.6 be merged into a single workplan item:
  - *D.3 Finalization of S-101 ENC Product Specification*

Principal activities and achievements

- Develop an S-100/S-101 Test Strategy and Test Bed (D.5)

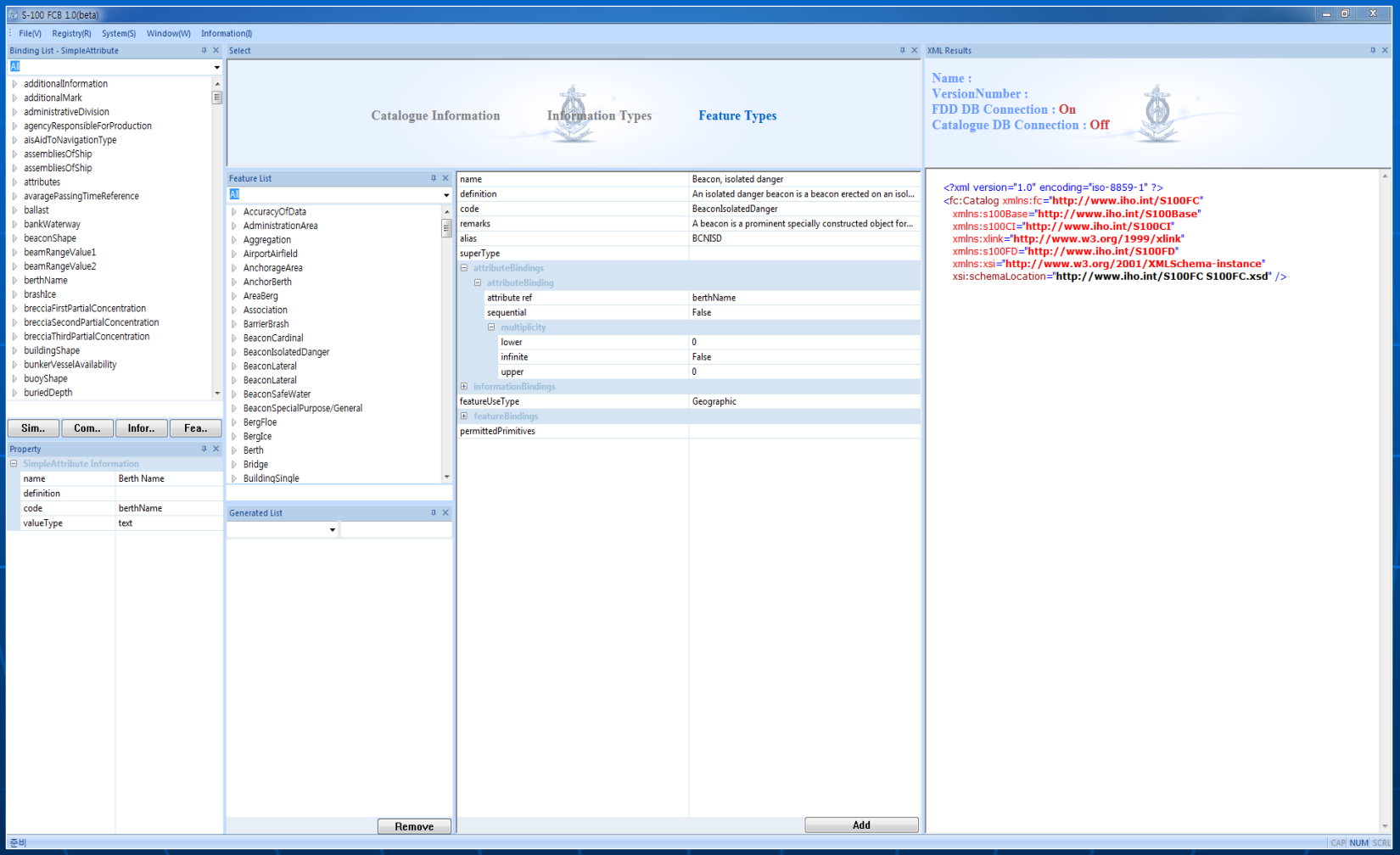
Principal activities and achievements



Principal activities and achievements

#	Phase Name	Status	Comment
1A	Feature Catalogue Builder	Completed	• Development done by KHOA • S-100 Test Cases Written
1B	Portrayal Catalogue Builder	Completed	• Developed under IHB Contract • S-100 Test Cases Written
2	Simple Production Tool	In Progress	• S-57 to S-101 Convertor • Joint NOAA/ESRI initiative
3	Simple Viewer	In Progress	• S-100 Test Cases Written • ROK Simple Viewer • SPAWAR Simple Viewer
4	Preliminary Production Tool	Not Started	• Initial Scoping Required
5	Preliminary Data Validation and Packaging	Not Started	• Initial Scoping Required
6	Shore Based ECDIS	Not Started	• Initial Scoping Required
7	Full Production Tool	Not Started	• Initial Scoping Required
8	Data Validation and Packaging	Not Started	• Initial Scoping Required
9	Full ECDIS	Not Started	• Initial Scoping Required

Principal activities and achievements



Principal activities and achievements

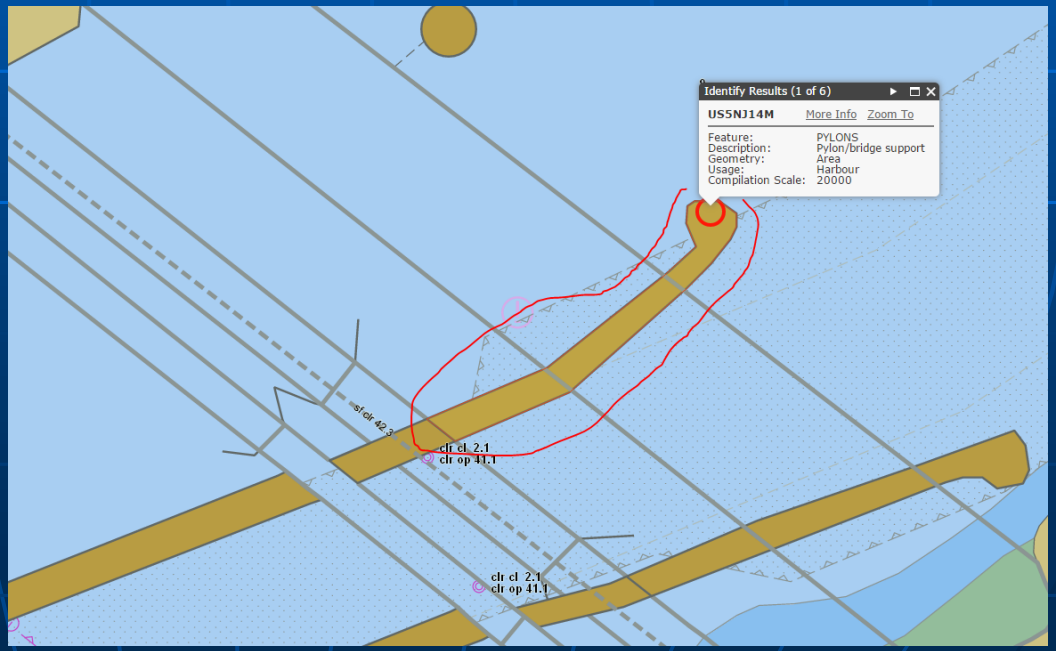
- S-100 Portrayal Catalogue Builder
  - Built under contract via the IHB
  - Waiting to install the new portrayal register model
  - Still needs to undergo testing
  - CARIS provided an initial S-101 Portrayal Catalogue for testing purposes

Principal activities and achievements

- S-57 to S-101 Convertor Status
  - Developed in partnership with NOAA/ESRI
  - Updated to the latest version of S-101
    - Calculated ECDIS system attributes
    - V-AIS modeling
    - New Bridge Model
    - New Lights Model
    - DQWG CATZOC model

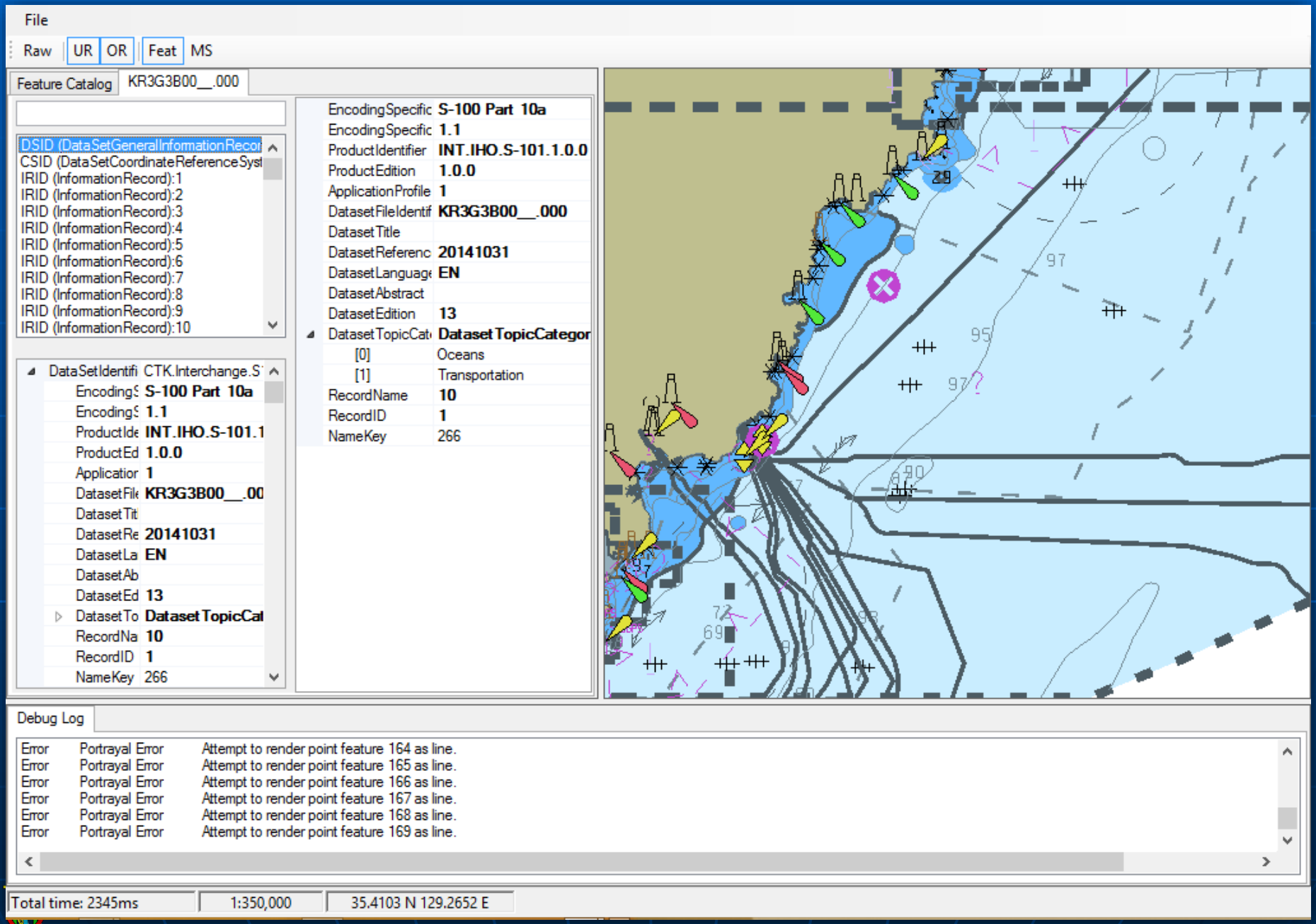
Principal activities and achievements

- Identifies issues with S-101
  - Multiple bridges sharing the same pylon
  - Will get converted as the same bridge aggregation



Principal activities and achievements

- S-100 Simple Viewers
  - Two are under development
    - KHOA
    - SPAWAR
  - Helps identify issues in S-100 based product specifications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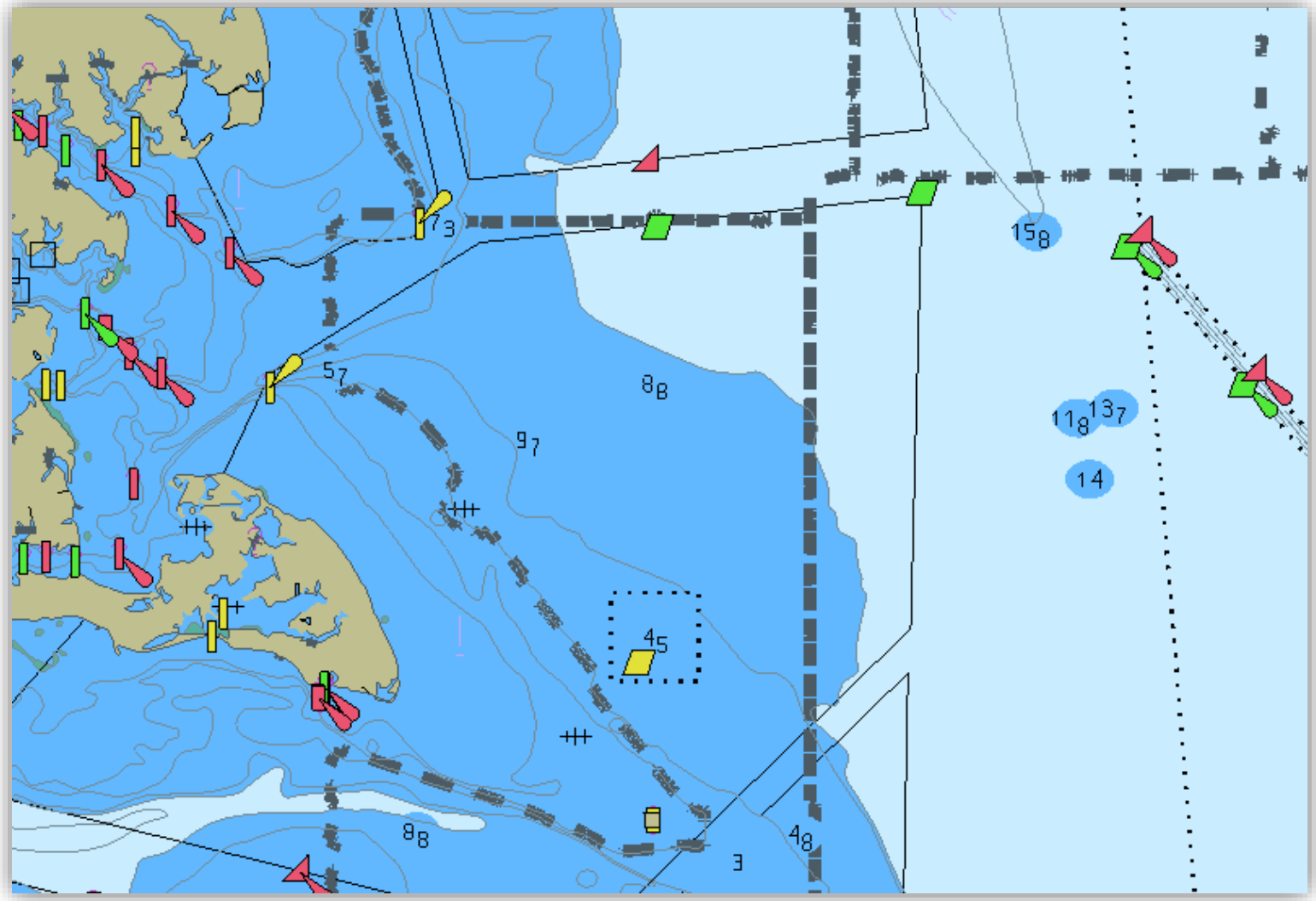
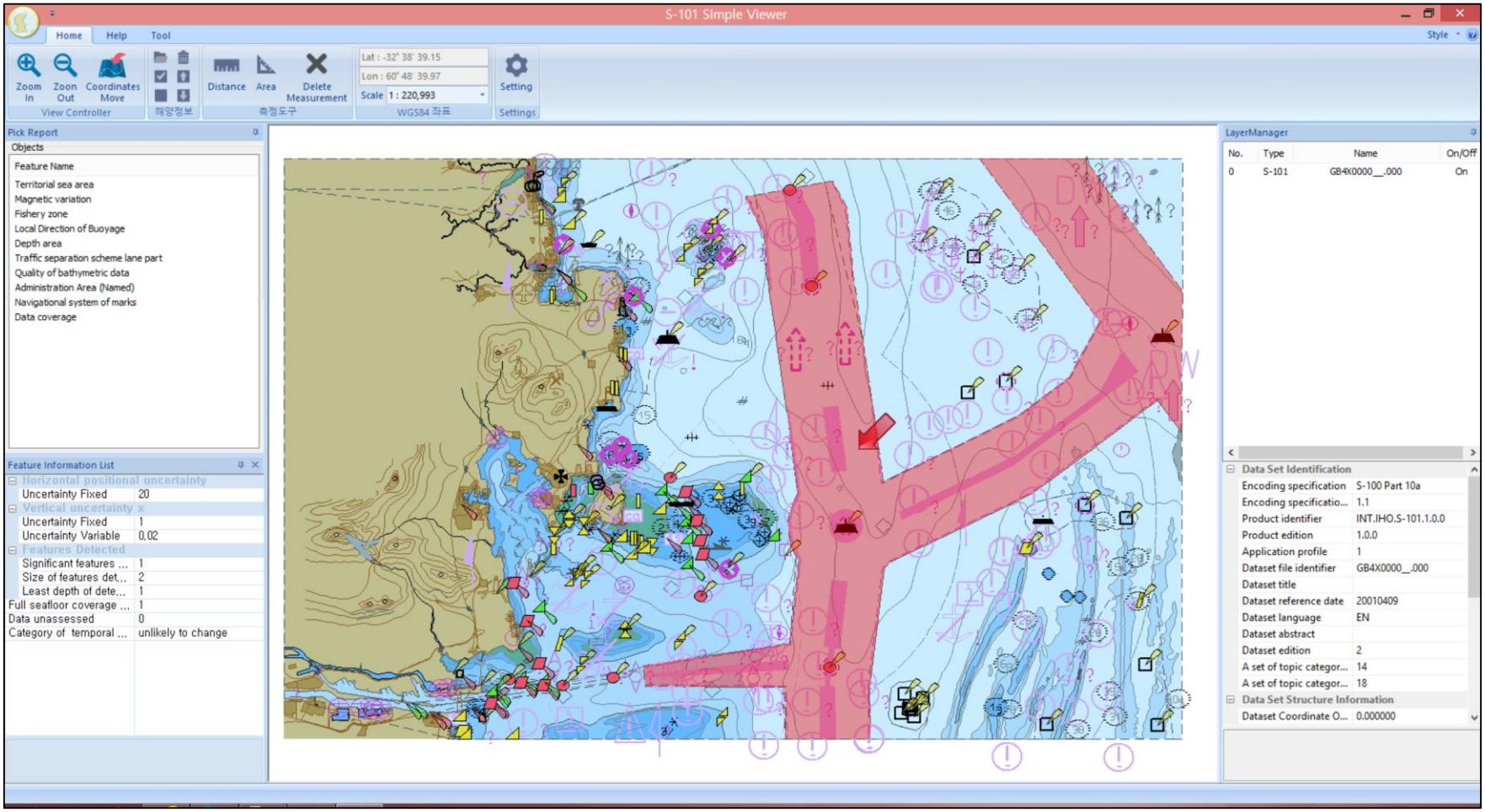


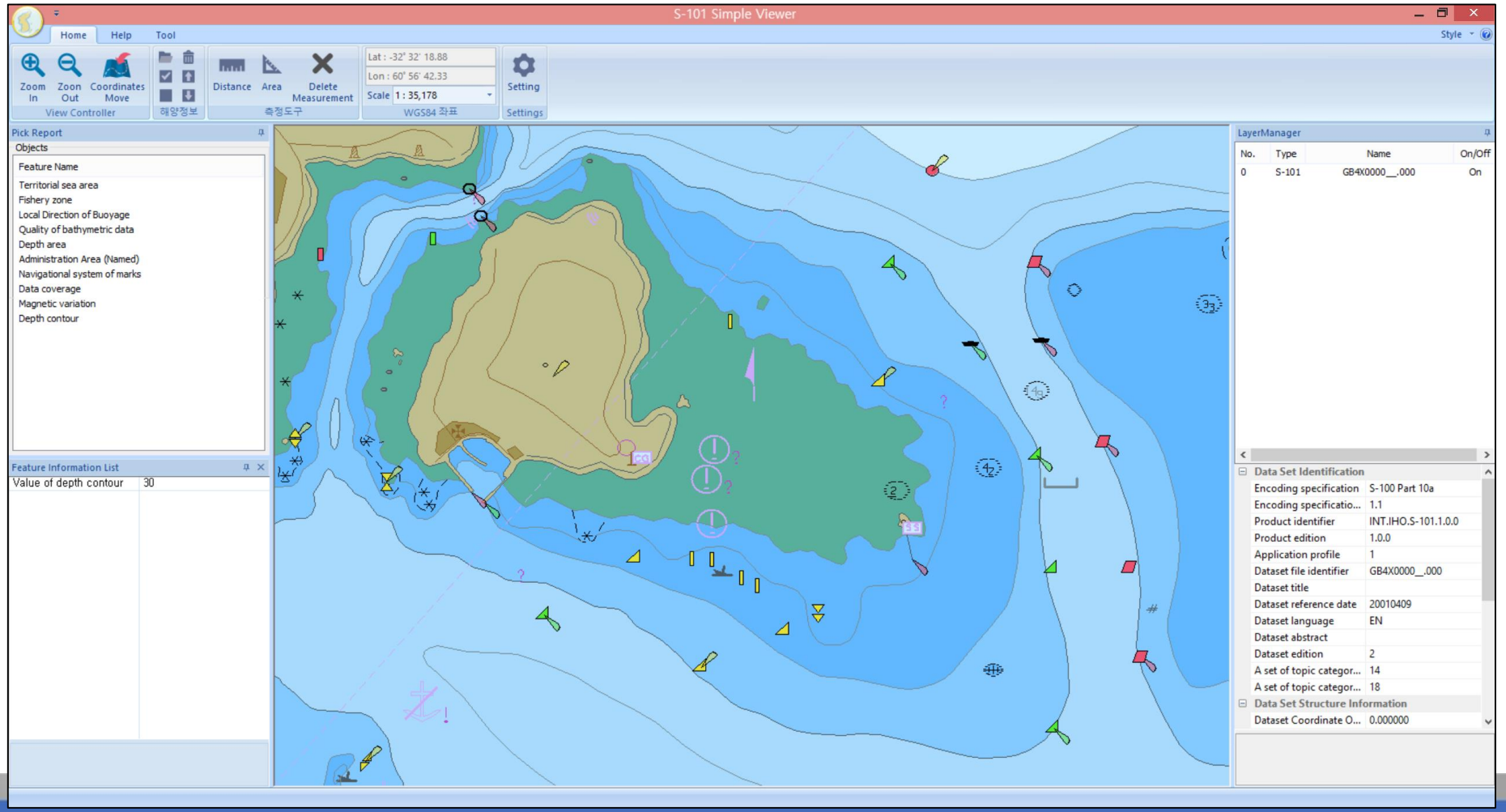
Current status of the S-100 Simple Viewer

- Status of S-100 Simple Viewer by KHOA



Current status of the S-100 Simple Viewer

- Display priority issue
  - Light and Buoy is in the same level of display priority



Principal activities and achievements

- Investigate enhancing the appearance of traditional paper chart symbols used in ECDIS by modifying their size, shape and colour (D.7)
  - This will be covered under S-101 development and this item was focused on S-52 development
- It is recommended that this item be removed from the workplan

Principal activities and achievements

- S-102 (D.8)
  - HSSC6/14: In accordance with Resolution 2/2007 as amended, TSMAD to provide relevant documentation on the impact assessment for HO's and Industry of the future edition of S-102
  - Sent out a short survey to both MS and OEMs regarding S-102
    - Majority of the respondents supported an update to S-102

Principal activities and achievements

- S-102 (D.8)
  - Established an S-102 project team to prepare an update to S-102

Principal activities and achievements

- Progress on HSSC Action Items

Agenda Item	Subject	Action No	Actions	
4.2	Implementation of transition arrangements	HSSC6/05	Chairs of S-100WG, DPSWG, HDWG to investigate the interactions between their activities and report at HSSC-7.	In Progress
4.2	Implementation of transition arrangements	HSSC6/06	S-100WG to consider the need for creating an S-101 Project Team (with contribution of ENCWG if deemed necessary).	Completed. S-101 Project Team has been established.
4.2	S-100WG TOR	HSSC6/10	S-100WG to consider whether additional business rules should be imposed (via draft amendments to S-100 Part 12).	Completed (no additional rules are needed at this time)
5.1	S-102	HSSC6/13	In accordance with Resolution 2/2007 as amended, TSMAD to provide relevant documentation on the impact assessment for HOs and Industry of the future edition of S-102.	Completed
5.1	S-99	HSSC6/16	S-100WG to implement the proposal of TSMAD related to the registration of Product Specifications and to draft the appropriate changes to the S-100 GI Registry and S-99.	In Progress
5.1 & 4.3	S-100 Registry	HSSC6/20	S-100 WG to investigate possible options for providing some redundancy/robustness in the administration of the Registry and Registers managed by the IHO in the long term.	In Progress. Established a clone server and rebuilding the interfaces
7.7	Harmonization in standards development	HSSC6/37	S-100WG to monitor and coordinate interactions with OGC and IOGP, to ensure proper harmonization in the development of standards (such as IOGP SSDM SeabedML) and facilitate the multi-use of survey data and report to HSSC.	Ongoing

Problems or outstanding issues

- Stability of the existing S-100 Registry and interfaces
  - Limits progress for the development of other S-100 based product specifications

Future work programme

- Shore up the S-100 Registry
- Maintain and extend S-100
- Continue the development of S-101
- Update S-102
- Develop the S-100 Interoperability Specification

Action requested of HSSC

- The HSSC is invited to
  - note this report and approve the continuance of the Work Plan.
  - Continue to address the need to update the relevant IMO performance standards to accommodate S-100
  - Approve the proposed changes to the S-100 master plan.