Hydrographic Services and Standards Committee

Report of the

Digital Information Portrayal Working Group (DIPWG)

HSSC-4, September 2012

(Briefing for HSSC4-05.3A)

Principal Activities and Achievements

DIPWG Annual Meeting

- Combined DIPWG4/ TSMAD24 Meeting
- 7-11 May 2012
- IHB, Monaco

DIPWG Staff

Chair: Colby Harmon - USA
Vice Chair: Julia Powell - USA
IHB: Michele Huet

Participating Members

Australia	Japan
Brazil	Rep of Korea
Canada	Netherlands
Denmark	Norway
Finland	Sweden
France	UK
Germany	USA

Participating Industry

CARIS - Canada
ESRI - USA
Furuno Finland - Finland
GEOMOD - France
IC-ENC - UK
IIC Technologies - Canada
Jeppesen Marine - Germany/Norway
KESTI - South Korea
NAVTOR - Norway
NG Maritime Systems - USA
SevenCs - Germany
T-Kartor - Finland
Transas Group (Russia

New DIPWG Staff

Chair: Colby Harmon - USA
Vice Chair: Thomas Mellor - UK
Secretary: Alberto Costa Neves - IHB

Progress on HSSC Actions for DIPWG

HSSC-2 Action No.	Subject	Action
20/22	Pick report	DIPWG to further develop pick report as proposed in CHRIS20-06.3A.

Status: On-Going

The paper, "Draft Specifications for Implementing the Cursor Enquiry and Pick Report in ECDIS" was presented at the April 2011 joint TSMAD22/DIPWG3 meeting. The ensuing discussion led to an action for an ad hoc committee to write a deferred amendment (for S-52 Maintenance Document 9) to specify the minimum requirements for cursor enquiry and pick reports. This will also be the basis for the specification of pick reports in S-101.

HSSC-3 Action No.	Subject	Action
10	S-52 PresLib 3.5	DIPWG Chair to include in the DIPWG work plan the following new Work Item "Revision of the S-52 Presentation Library including in relation to aspects of S-64, taking into account the comments contained in paper HSSC3-05.3B".

Status: Completed

The work item has been added to the DIPWG Work Plan.

Work Program Progress Highlights

- ✦ S-100 Portrayal Model Development
- ✦ Conditional Symbolization Procedures (CSP)
- ✦ Single Set of Aid to Navigation Symbols for S-101
- ✦ Narrative Portrayal Sections of S-100 & S-101
- ✦ New S-52 Presentation Library
- ✦ Pick-Report Standardization

Portrayal Model

- Needed to create ECDIS machine-readable symbolization instructions to portray S-101 ENC
- OEMs expressed concerns about the need for excessive XML extensions used in the model
- Much of the same functionality may be available "out-of-the-box" with other approaches
- WG discussed the use of other script languages
  - XSLT ; OGCs symbol encoding (SE) and filter encoding (FE)
- Selection of approach to be used within next 2 months
- Full model development may take until next summer

Conditional Symbolization Procedures

- Correspondence group is reviewing the awkward <u>Nassi-Shneiderman</u> diagrams used to depict Conditional Symbolization Procedures (CSPs) in S-52

- CSPs describe complex symbolization logic that cannot be represented in simple look-up table entries

- Goal: eliminate or simplify CSPs for S-101

- Analysis has also pointed out the potential need for additional attributes needed to simplify portrayal

- Simplifying CSPs will also make the creation of machine readable rules much easier

Simplified / Traditional Symbology Consolidation

✦ Defining single set of point symbols for Aids to Navigation for S-101 ENCs

✦ Goal: Take best aspects of "paper chart" and "simplified" symbol sets in S-52 and make single unified symbol set

✦ Less confusing for mariners / ECDIS training simpler

✦ Simplify implementation and maintenance of S-101

  – Eliminates 300 point symbolization look-up table entries

✦ Mariners will be consulted by through a survey regarding the proposed symbology

Narrative Portrayal Sections of S-100 & S-101

✦ Wording of Portrayal Section continues to be distilled from existing S-52 content or drafted as original text

✦ Much of S-52 content will not go forward into S-100

  – Not applicable for new S-100 design

  – Information is held in Hydro Portrayal Register

✦ Some of the content is dependent on the final composition of the portrayal model

New S-52 Presentation Library (ver 3.5)

- Unified portrayal Spec: 2 deferred amendments have been incorporated.

- More consistency among ECDIS implementations, as adopting deferred amendments is optional

- "Cleaned-up" presentation library will make preparations for portrayal in S-101 more straight forward

- It is hoped that PresLib version 3.5 may be completed by the end of 2013 and approved in 2014

PresLib Issues related to HSSC3-05.3B

✦ HSSC-3 added new DIPWG work plan item for, "revision of the S-52 Presentation Library including in relation to aspects of S-64, taking into account the comments contained in the paper [UKHO HSSC3-05.3B]."

✦ DIPWG reviewed the issues described in the paper and an accompanying slide presentation made by the UKHO at HSSC-3

– No urgent PresLib changes have been identified from HSSC3-05.3B

– Modifications will be considered along with other PresLib changes in the queue

– Seeking recommendations from WG members for ways to resolve issues

– Will work on issues that WG believes have merit and over which it has control

– As appropriate, DIPWG will assist TSMAD in updating and enhancing S-58, *Recommended ENC Validation Checks* and S-64, *IHO Test Data Sets for ECDIS*

Pick Report Standardization for S-101

- ✦ Two iterations of design concepts for a minimum specification for pick-report content were developed

- ✦ Could also be issued as deferred amendment for S-52

- ✦ It is hoped that a final set of guidance can be completed soon and implemented for S-101

- ✦ Lower priority than completing Portrayal Model

Other Items of Note

ECDIS Anomalies

+ IHO and IMO investigations of "ECDIS Anomalies" are of great interest to DIPWG

+ Effort has revealed that some deployed ECDIS systems are not displaying import features correctly

+ DIPWG is eager to clarify any portions of S-52 that may have led to inconsistent implementations

+ To date, none of the anomalies identified have been definitively linked to errors in S-52 or the PresLib, but these issues continue to be investigated.

Status of Work Items and Future Work Plan

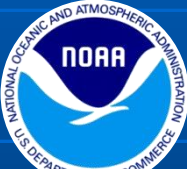| Task	Work Item	Status / Remarks
A.1	Resolve any problems or errors identified in S-52 and its Presentation Library as appropriate	**Continuing Work Item** Routine maintenance of S-52.
A.4	Issue Maintenance Document No. 9 of S-52.	**Continuing Work Item** MD #9 will consist of deferred amendment for Pick Report Standardization after new PresLib 3.5 is released
A.5	Publication of a new Presentation Library Version 3.5 Revision of the S-52 Presentation Library including in relation to aspects of S-64, taking into account the comments contained in paper HSSC3-05.3B	**Continuing Work Item** Will incorporate 2 existing maintenance documents and any new changes as appropriate. **Recommend rewording work item to read:** "Develop new Presentation Library Version 3.5 and coordinate with TSMAD for appropriate changes to S-64"
C.1	Monitor Relevant International Standards	**Continuing Work Item** Staying apprized of status of various International Standards, such as IEC 61174, IEC 62288 and the ISO 19100 series.

Task	Work Item	Status / Remarks
F.2	Maintain S-100 Portrayal	**Future Work Item** Refining initial portrayal implementation.
F.3	Assist TSMAD in identifying which aspects of S-52 should be incorporated into S-100 and S-101 Specification.	**Continuing Work Item** Editing and writing the Portrayal Sections of S-100 amd S-101.
F.4	Maintenance of S-101 Portrayal Component and Portrayal Catalogue	**Future Work Item** Refining initial portrayal implementation.
J.1	Liaise with CSPCWG	**Continuing Work Item** Review and address, as appropriate, any changes in paper chart portrayal standards.
K.2	Maintain Chart Presentation Bulletins on the DIPWG page of IHO website	**Continuing Work Item** Routine posting of CPBs on the IHO website.
K.3	Review and revise other informational pages on the DIPWG page of IHO website	**Continuing Work Item** Continual improvement of the DIPWG page on the IHO website.

Task	Work Item	Status / Remarks
L.1	Investigate enhancing the appearance of existing traditional paper chart symbols used in ECDIS by modifying their size, shape and colour.	**Continuing Work Item** Unification of traditional "paper chart" and simplified ECDIS symbology
M.1	Provide technical assistance on Portrayal for S-10x related product specifications.	**Continuing Work Item** Providing technical assistance to those developing S-100 based product specifications. Currently, DIPWG is assisting SNPWG.
N.1	Conduct the 2013 meeting of DIPWG	**Recurring Work Item** Next DIPWG meeting will be hosted by USA (NOAA) in Silver Spring, Maryland.

Next DIPWG Meeting
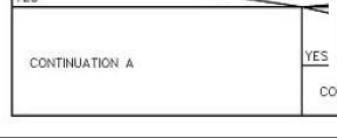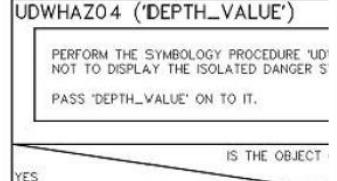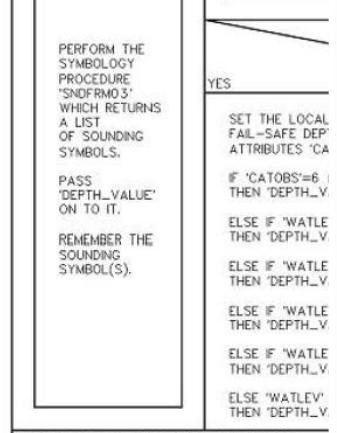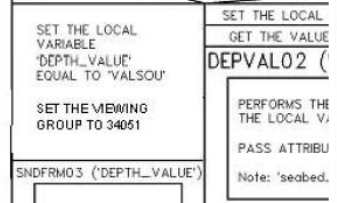
- Combined DIPWG5 / TSMAD25 Meeting

- June 2013

- Silver Spring, Maryland, USA (Greater Washington, DC Area)

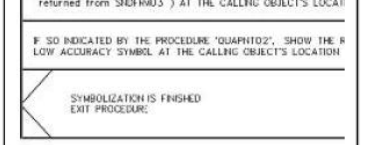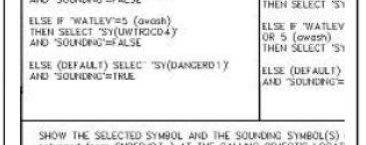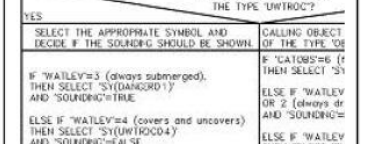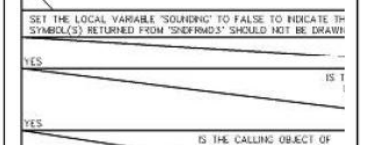- Hosted by: the National Oceanographic and Atmospheric Administration (NOAA)
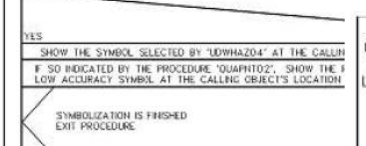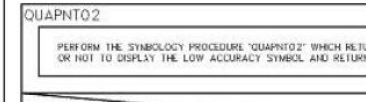
CSP For Obstructions

OBSTRN06

Conditional symbology procedure for symbolizing objects of the class obstruction (OBSTRN) and underwater rock (UWTROC).
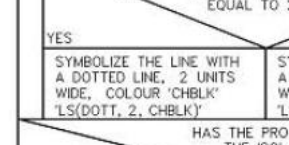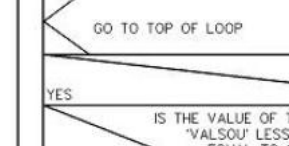
GET THE OBJECT WHICH IS CALLING THIS PROCEDURE

GET THE VALUE OF THE ATTRIBUTE 'VALSOU'

IS THE VALUE OF THE ATTRIBUTE 'VALSOU' (value of sounding) GIVEN

YES

SET THE LOCAL VARIABLE 'DEPTH_VALUE' EQUAL TO 'VALSOU'

SET THE VIEWING GROUP TO 34051

SNDFRM03 ('DEPTH_VALUE')

PERFORM THE SYMBOLOGY PROCEDURE 'SNDFRM03' WHICH RETURNS A LIST OF SOUNDING SYMBOLS.

PASS 'DEPTH_VALUE' ON TO IT.

REMEMBER THE SOUNDING SYMBOL(S).

SET THE LOCAL

GET THE VALUE

DEPVAL02 (

PERFORMS THE
THE LOCAL V

PASS ATTRIBU

Note: 'seabed.

YES

SET THE LOCAL
FAIL—SAFE DEP
ATTRIBUTES 'CA

IF 'CATOBS'=6
THEN 'DEPTH_V

ELSE IF 'WATLE
THEN 'DEPTH_V

ELSE IF 'WATLE
THEN 'DEPTH_V

ELSE IF 'WATLE
THEN 'DEPTH_V

ELSE IF 'WATLE
THEN 'DEPTH_V

ELSE 'WATLEV'
THEN 'DEPTH_V

UDWHAZ04 ('DEPTH_VALUE')

PERFORM THE SYMBOLOGY PROCEDURE 'UD'
NOT TO DISPLAY THE ISOLATED DANGER S

PASS 'DEPTH_VALUE' ON TO IT.

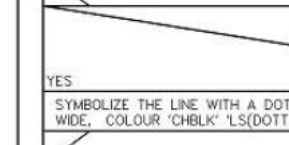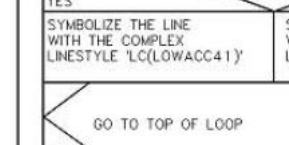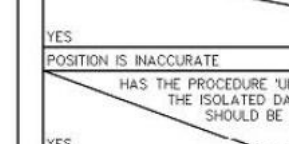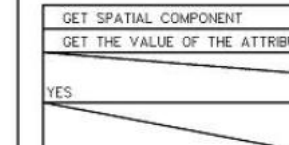IS THE OBJECT

YES

CONTINUATION A

YES

CONTINUATION B

OBSTRN06 Continuation A

Point objects, underwater rocks (UWTROC) and obstructions (OBSTRN)

QUAPNTO2

PERFORM THE SYMBOLOGY PROCEDURE 'QUAPNTO2' WHICH RETURNS A FLAG INDICATING WHETHER OR NOT TO DISPLAY THE LOW ACCURACY SYMBOL AND RETURNS THE SELECTED SYMBOL

HAS THE PROCEDURE 'UDWHAZO4' INDICATED

YES

SHOW THE SYMBOL SELECTED BY 'UDWHAZO4' AT THE CALLIN

IF SO INDICATED BY THE PROCEDURE 'QUAPNTO2', SHOW THE F
LOW ACCURACY SYMBOL AT THE CALLING OBJECT'S LOCATION

SYMBOLIZATION IS FINISHED
EXIT PROCEDURE

YES

SET THE LOCAL VARIABLE 'SOUNDING' TO FALSE TO INDICATE TH
SYMBOL(S) RETURNED FROM 'SNDFRMO3' SHOULD NOT BE DRAWN

YES

IS T

YES

IS THE CALLING OBJECT OF
THE TYPE 'UWTROC'?

YES

SELECT THE APPROPRIATE SYMBOL AND
DECIDE IF THE SOUNDING SHOULD BE SHOWN.

IF 'WATLEV'=3 (always submerged),
THEN SELECT 'SY(DANGER01)'
AND 'SOUNDING'=TRUE

ELSE IF 'WATLEV'=4 (covers and uncovers)
THEN SELECT 'SY(UWTROC04)'
AND 'SOUNDING'=FALSE

ELSE IF 'WATLEV'=5 (awash)
THEN SELECT 'SY(UWTROC04)'
AND 'SOUNDING'=FALSE

ELSE (DEFAULT) SELECT 'SY(DANGER01)'
AND 'SOUNDING'=TRUE

CALLING OBJECT
OF THE TYPE 'OB

IF 'CATOBS'=6 (f
THEN SELECT 'SY

ELSE IF 'WATLEV
OR 2 (always dr
AND 'SOUNDING'=

ELSE IF 'WATLEV
THEN SELECT 'SY

ELSE IF 'WATLEV
OR 5 (awash)
THEN SELECT 'SY

ELSE (DEFAULT)
AND 'SOUNDING'=

SHOW THE SELECTED SYMBOL AND THE SOUNDING SYMBOL(S)
returned from SNDFRMO3) AT THE CALLING OBJECT'S LOCAT

IF SO INDICATED BY THE PROCEDURE 'QUAPNTO2', SHOW THE F
LOW ACCURACY SYMBOL AT THE CALLING OBJECT'S LOCATION

SYMBOLIZATION IS FINISHED
EXIT PROCEDURE

CONTINUATION C

OBSTRN06 Continuation B

Line objects, obstructions (OBSTRN)

FOR EACH SPATIAL COMPONENT OF THE OBJECT

GET SPATIAL COMPONENT

GET THE VALUE OF THE ATTRIBUTE 'C

YES

POSITION IS INACCURATE

HAS THE PROCEDURE 'UDWHA
THE ISOLATED DANGER
SHOULD BE SHOW

YES

SYMBOLIZE THE LINE
WITH THE COMPLEX
LINESTYLE 'LC(LOWACC41)'

SYMBO
WITH T
LINEST

GO TO TOP OF LOOP

YES

SYMBOLIZE THE LINE WITH A DOTTED L
WIDE, COLOUR 'CHBLK' 'LS(DOTT, 2, CI

GO TO TOP OF LOOP

YES

IS THE VALUE OF THE A
'VALSOU' LESS THAN
EQUAL TO 20 m

YES

SYMBOLIZE THE LINE WITH
A DOTTED LINE, 2 UNITS
WIDE, COLOUR 'CHBLK'
'LS(DOTT, 2, CHBLK)'

SYMBOL
A DASH
WIDE, (
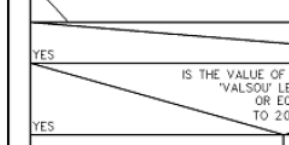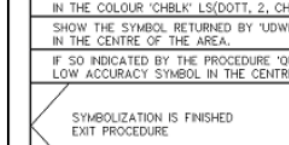'LS(DAS

HAS THE PROCEDUR
THE ISOLATED
SHOULD BE

YES

OBSTRN06 Continuation C

Area objects, obstructions (OBSTRN)

QUAPNTO2

PERFORM THE SYMBOLOGY PROCEDURE 'QUAPNTO2' WHICH RETURNS A FLAG INDICATING
WHETHER OR NOT TO DISPLAY THE LOW ACCURACY SYMBOL AND RETURNS THE SELECTED SYMBOL

HAS THE PROCEDURE 'UDWHAZO4' INDICATED
THAT THE ISOLATED DANGER SYMBOL
SHOULD BE SHOWN ?

YES   NO

PRESENT THE AREA OBJECT WITH AN OPAQUE COLOUR FILL WITH
THE COLOUR 'DEPVS', AND THE AREA PATTERN 'FOULARO1'

SYMBOLIZE THE AREA BOUNDARY AS A DOTTED LINE, 2 UNITS WIDE,
IN THE COLOUR 'CHBLK' LS(DOTT, 2, CHBLK)

SHOW THE SYMBOL RETURNED BY 'UDWHAZO4'
IN THE CENTRE OF THE AREA.

IF SO INDICATED BY THE PROCEDURE 'QUAPNTO2', SHOW THE RETURNED
LOW ACCURACY SYMBOL IN THE CENTRE OF THE AREA

DO
NOTHING
HERE

SYMBOLIZATION IS FINISHED
EXIT PROCEDURE

IS THE VALUE OF THE ATTRIBUTE
'VALSOU' GIVEN ?

YES   NO

IS THE VALUE OF THE ATTRIBUTE
'VALSOU' LESS THAN
OR EQUAL
TO 20m.?

YES   NO

SYMBOLIZE THE AREA BOUNDARY WITH
A DOTTED LINE, 2 UNITS WIDE,
COLOUR 'CHBLK'
'LS(DOTT, 2, CHBLK)'

SYMBOLIZE THE AREA BOUNDARY AS
LS(DASH, 2, CHGRD)

SELECT THE APPROPRIATE SYMBOL
AS THE DEFAULT SYMBOLIZATION

IF 'CATOBS'=6 (foul area),
THEN SELECT 'AP(FOULARO1);LS(DOTT, 2, CHBLK)'

ELSE IF 'WATLEV'=1 (partly submerged at HW)
THEN SELECT 'AC(CHBRN);LS(SOLD, 2, CSTLN)'

ELSE IF 'WATLEV'=2 (always dry)
THEN SELECT 'AC(CHBRN);LS(SOLD, 2, CSTLN)'

ELSE IF 'WATLEV'=4 (covers and uncovers)
THEN SELECT 'AC(DEPIT);LS(DASH , 2, CSTLN)'

ELSE IF 'WATLEV'=5 (awash)
THEN SELECT 'AC(DEPVS);LS(DOTT, 2, CHBLK)'

ELSE IF 'WATLEV'=3 (always submerged)
THEN SELECT 'AC(DEPVS);LS(DOTT, 2, CHBLK)'

ELSE (DEFAULT) SELECT
'AC(DEPVS);LS(DOTT, 2, CHBLK)'

SHOW THE SOUNDING SYMBOL(S) RETURNED FROM
'SNDFRMO3' IN THE CENTRE OF THE AREA.

IF SO INDICATED BY THE PROCEDURE 'QUAPNTO2', SHOW THE RETURNED
LOW ACCURACY SYMBOL AT THE CENTRE OF THE AREA

SYMBOLIZATION IS FINISHED
EXIT PROCEDURE

Problems or outstanding issues

- Delay in developing portrayal model
- Funding for necessary contract work

Action required of HSSC