

HSSC WORK PLAN 2021-22

Version 31 August 2021

Notes:

a/ This consolidated work plan (WP) has been compiled from the reports submitted to HSSC-13 and following exchanges with HSSC WGs Chairs.

b/ The IHO Task numbers in every WG Work Plan refer to the IHO Work Programme 2 for 2021. They have not been checked against the IHO Work Programme 2022 as it has not been approved by C-5 yet.

c/ Quick links:

§3. S-100WG Work Plan	§4. NIPWG Work Plan	§5. ENCWG Work Plan
§6. HSWG Work Plan	§7. TWCWG Work Plan	§8. NCWG Work Plan
§9. DQWG Work Plan	§10. HDWG Work Plan	§11. ABLOS Work Plan
§12. COORD Work Plan	§13. MASS PT Work Plan	§10. S-130 PT Work Plan

Objective:

This work plan aims at ensuring efficient project resource management and alignment, progress monitoring and to provide a communication utility with internal and external parties.

Procedure:

The HSSC work plan covers a rolling two year period and is revised annually. Each subordinate body proposes in its report to the annual meeting of HSSC a revised work plan for the next biennium. Completed work items should be removed from work plans after they have been reported at a subsequent HSSC meeting. The Chairs of the subordinate bodies, along with the HSSC Chair, will meet prior to each HSSC meeting to review progress, and to harmonize the proposed work plans. The proposed work plans for the next biennium will be considered by the plenary with the report of each subordinate body. The draft consolidated HSSC work plan for the next biennium will be reviewed on the last day of the HSSC meeting, incorporating the agreed changes discussed during that meeting. A revised consolidated HSSC work plan incorporating all approved additional work items will be circulated to participants of the meeting for final comment at the same time as the draft minutes of the meeting. HSSC Chair could seek committee members' interim approval for emerging issues between meetings.

Communications:

The HSSC Work Plan will be posted on the IHO website, and a progress summary will be provided at IHO Assemblies.

Monitoring:

In accordance with Decision No. 1 of the 1st Session of the IHO Assembly, the Council evaluates by correspondence the accomplishment of the preceding year's work programme and report to MS through the IHO Annual Report.

Project Numbering:

Each task will be given a sequential number independent of related subordinate body. The related IHO Work Programme Element number and the specific HSSC meeting that approved the inclusion of the task will be identified in the HSSC Work Plan summary. Each sub task will be numbered using an alphanumeric sequence, "An, Bn, Cn.."

Priorities:

Three Levels of Priorities (H, M, and L) will be assigned by HSSC using the "Guidelines for the Evaluation of Proposed New Work Items for HSSC and its Subordinate Bodies" (see section 1 hereafter).

1. GUIDELINES FOR THE EVALUATION OF PROPOSED NEW WORK ITEMS FOR HSSC AND ITS SUBSIDIARY BODIES

Introduction

- 1.1 In order to best use the limited resources available to HSSC and its subordinate bodies, it is necessary to evaluate and prioritise proposed new work items. These guidelines are based on the principles originally agreed at CHRIS/13 and CHRIS/15 and revised and enhanced at CHRIS/18. They are intended to provide a uniform basis for evaluation and prioritisation.
- 1.2 Evaluation should be done as a two-stage process:
- a. general consideration leading to acceptance or rejection; and if accepted,
 - b. establishment of priorities.

General acceptance

- 1.3 Before deciding to include a new item in the work plan of HSSC and its subordinate bodies, the following factors should be taken into account:
- a. is the subject addressed by a proposal considered to be within:
 - (1) the scope of IHO objectives?
 - (2) the current IHO work programme?
 - b. has a need for the measure proposed been identified (for example, client demand, internal improvements)?
 - c. do adequate industry standards or solutions exist or are they being developed thereby reducing the need for action through HSSC and its subordinate bodies?
 - d. is the objective achievable in the existing HSSC and its subordinate bodies' work plan taking into account a realistic estimates of resources needed and available?
 - e. what are the envisaged deliverables?

Establishment of priorities

- 1.4 Priorities for accepted work items should normally be assigned based on consideration of the following factors:
- a. measures aimed at substantially preventing maritime casualties, marine pollution incidents or enhancing maritime security
 - b. measures to overcome identified deficiencies in existing IHO standards and technical resolutions;
 - c. measures needed to align IHO standards and resolutions with those of other relevant international standards and recommendations;
 - d. measures required to take into account the introduction of new technologies and methods in maritime operations;
 - e. measures required to take into account new techniques in data acquisition, processing and management, and production techniques in hydrography;
 - f. measures leading to increased Hydrographic Office efficiency.
- 1.5 Follow up actions in response to specific requests from the International Hydrographic Conference/Assembly or other international and intergovernmental organisations should be evaluated in light of paragraph 1.4 above unless specifically identified as urgent matters.

General remarks

- 1.6 When setting priorities, certain flexibility should be provided to allow for initiatives that could not be foreseen.
- 1.7 Once a decision has been made on the basis of the above for a new work item to be included in the work plan of HSSC and its subordinate bodies, an appropriate target completion date should be established, taking into

account the urgency of the matter concerned.

- 1.8 In general, proposals for new work items as well as the revised work plans presented by Chairs of subordinate bodies as part of their annual reports should include a proposed priority for each work item, based on the guidelines above.
- 1.9 Wherever possible, proposed priorities for work items will be considered ahead of a meeting by a “Chair Group” comprising Chair, Vice-Chair, Secretary and all available Chairs of subordinate bodies. Final endorsement of work item priorities will rest with HSSC and be considered at the respective meeting.

2. HSSC RELEVANT ELEMENTS OF IHO WORK PROGRAMME 2020-2021

See Programme 2 in the [IHO Work Programme 2021](#) and IHO Proposed IHO Work Programme 2022.

3. S-100WG WORK PLAN 2021-2022

Tasks

A	Maintain and extend S-100 "IHO Universal Hydrographic Data Model" (IHO Task 2.3.2)
B	Maintain and extend S-99 "Operational Procedures for the Organization and Management of the S-100 Geospatial Information Registry" (IHO Task 2.3.3)
C	Maintain and extend the S-100 GI Registry (IHO Task 2.3.1)
D	Supervise/Advise and support the development and maintenance of S-100-based product specifications (IHO Task 2.3.5)
E	Monitor the development of other related international standards (IHO Task 2.1)
F	Provide outreach and technical assistance regarding the implementation of S-100 (IHO Task 2.3.5)
G	Maintain the S-100 section of the IHO website (IHO Task 2.3)
H	Conduct the 2021 and 2022 meetings of the S-100WG and its sub-group(s) and project team(s) (IHO Task 2.1)

Work items

Work item	Title	Priority H-high M-medium L-low	Next milestone	Start Date	End Date	Status P-planned O-ongoing C-completed S-Superseded	Contact Person(s)	Related Pubs / Standard	Remarks
A.1	Maintain and Extend S-100	H	HSSC 14	2010	Permanent	O	Julia Powell (NOAA)	S-100	Edition 5.0.0 at HSSC13/14
A.2	Develop and Extend of S-98 Interoperability Specification	H	HSSC14	2015	Permanent	O	Julia Powell (NOAA)		Draft Edition 1.0.0 to be submitted at HSSC-14 in May 2022
A.3	Develop and Monitor the protection scheme (S-63 equivalent component, S-100 Part 14) of S-100 based-products	M		2016	Permanent	O	Jonathan Pritchard (IIC) Robert Sandvik (Primar)		Protection scheme workshop in 2022
A.4	Develop and Extend S-97 Guidebook for developing S-100 Product Specifications	M		2018	Permanent	O	Julia Powell		
A.5	Develop and Maintain S-164 Test Data Sets for S-100 and ECDIS Type Approval	H	HSSC14	2020	Permanent	P	Julia Powell (NOAA)	S-100/S-1xx	Edition 1.0.0 targeted for HSSC14 (2022)
B.2	Establish and maintain expert group for the hydro domain: -	M		2016	Permanent	P	Julia Powell (US)		Action HSSC8/14 (membership and TORs)

Work item	Title	Priority H-high M-medium L-low	Next milestone	Start Date	End Date	Status P-planned O-ongoing C-completed S-Superseded	Contact Person(s)	Related Pubs / Standard	Remarks
C.1	Maintain and Extend the S-100 GI Register in alignment with S-100 (includes Portrayal)	H		2015	Permanent	O	Yong Baek (IHO Sec.) Iji Kim (KHOA)		Improvement to be aligned with S-100 Ed.5.0.0
C.2	Develop and Maintain the S-100 Feature Catalogue Builder	H		2015	Permanent	O	Yong Baek (IHO Sec.) Iji Kim (KHOA)		Improvement to be aligned with S-100 Ed.5.0.0
C.3	Develop and Maintain the S-100 Portrayal Catalogue Builder	H		2015	Permanent	O	Yong Baek (IHO Sec.) Iji Kim (KHOA)		Improvement to be aligned with S-100 Ed.5.0.0
D.3	Develop Edition 2.0.0 of S-101	H		2015	2023/2024	O	Tom Richardson (IC-ENC)		Operational Edition of S-101 will be at 2.0.0

Work item	Title	Priority H-high M-medium L-low	Next milestone	Start Date	End Date	Status P-planned O-ongoing C-completed S-Superseded	Contact Person(s)	Related Pubs / Standard	Remarks
D.4	Monitor the implementation of the S-101 ENC product specification (post Edition 2.0.0)	H		2015		P	Julia Powell (NOAA)		Action HSSC8/19 (Impact on IMO Performance Standards) Participate in IMO NCSR revision of MSC 232(82) - Performance Standards for ECDIS expected to commence in 2022
D.5	Develop and Maintain an S-100/S-101 Test Strategy and Test Bed	H		2013	Permanent	O	Julia Powell (NOAA)		
D.6	Develop and Maintain S-102 Bathymetric Content Specification.	H		2014	2023	P	Lawrence Haselmaier (NGA)		Edition 3.0.0 will be the operational Edition
D.7	Develop and maintain S-129 Product Specification for Underkeel Clearance Management (UKCM) Information.	M		2016	2023	P	Jason Rhee (OMC)		Decision HSSC8/17 Edition 2.0.0 will be the operational edition
D.8	Develop S-121 Product Specification for Maritime Limits and Boundaries	M		2016	2022	O	Mark Alcock (Geoscience Australia)		Edition 1.0.0 published in October 2019. Currently in the testing phase.
D.9	Develop Dual Fuel concept of S-100 ECDIS	H		2020	2023	O	Julia Powell(NOAA)		

Work item	Title	Priority H-high M-medium L-low	Next milestone	Start Date	End Date	Status P-planned O-ongoing C-completed S-Superseded	Contact Person(s)	Related Pubs / Standard	Remarks
E.1	Monitor the development of other related international standards and other S-100 based products out of the IHO remit	M			Permanent	O	Julia Powell (NOAA)		
E.2	Monitor and coordinate interactions with OGC and IOGP, to ensure proper harmonization in the development of standards.	M		2016	Permanent	P			Standards such as IOGP SSDM SeabedML (Action HSSC6/37)
E.3	Monitor the development of the IMO guidance on maritime cyber security and advice on possible future actions	L		2016	Permanent	P	Hannu Peipponen (IEC)		
F.1	Liaise with IHO subsidiary bodies and subordinate organs, e.g. WWNWS-SC, NIPWG, ENCWG, SCUFN, etc.	H			Permanent	O	Julia Powell (NOAA)		Establish joint project teams as required

Work item	Title	Priority H-high M-medium L-low	Next milestone	Start Date	End Date	Status P-planned O-ongoing C-completed S-Superseded	Contact Person(s)	Related Pubs / Standard	Remarks
F.2	Liaise with non-IHO constituents, e.g. IALA E-nav Committee, IEHC, JCOMM Expert Teams, DGIWG, ISO, ICPC, marine navigation and GIS industry, etc.	H		2004	Permanent	O	Julia Powell (NOAA)		Clarification of the relations between IALA and IHO product specifications (e.g. sector lights modelling, encoding and portrayal in S-101 and S-201) Actions HSSC8/58, HSSC8/66
G.1	Maintain the S-100 section of the IHO website	H		2003	Permanent	O	Yong Baek (IHO Sec.)		

Meetings (Task H)

Date	Location	Activity
March 2020	Taunton, United Kingdom	S-100WG-5
March 2021	Monaco	S-100 TSM-8
January 2022	Monaco	S-100WG-6

Chair: Julia Powell, US (NOAA)
Vice Chair: Elizabeth Hahessy (Denmark)
Secretary: Yong Baek, IHO Secretariat

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4. NIPWG WORK PLAN 2021-22

Tasks

D	Maintain Publication S-12 “Standardization of List of Lights and Fog Signals” (IHO Task 2.8.1)
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F	Establish and monitor, in liaison with the S-100WG, the project teams required to specify and develop nautical information layers for use in ECDIS (IHO Task 2.3)
G	Develop high level specifications for a maritime services as defined by IMO in the context of e-navigation covering the provision of hydrographic services to mariners in accordance with the IMO e-navigation strategy implementation plan (IHO Task 2.5.2)
H	Develop a test and implementation plan for the development of the maritime services as defined by IMO (IHO Task 2.5.2)
I	Maintain IHO Resolutions in M-3 relating to Nautical Publications as required (IHO Task 2.1)
J	Liaise with other HSSC WGs and other IHO and international bodies (IHO Task 2.1.8)
K	Conduct the 2021 and 2022 meetings of the NIPWG and its sub-group(s) and project team(s) (IHO Task 2.1)

Work items

Work item	Title	Priority H-high M-medium L-low	Next Milestone	Start Date	End Date	Status P-Planned O-Ongoing C-Completed S-superseded	Contact Person(s)	Related Pubs / Standard	Remarks
D.1	Monitor and assess proposals for amending S- 12	M	Next meeting	2014	Permanent	O		S-12	In close liaison with IALA; see J.5.1

Work item	Title	Priority H-high M-medium L-low	Next Milestone	Start Date	End Date	Status P-Planned O-Ongoing C-Completed S-superseded	Contact Person(s)	Related Pubs / Standard	Remarks
F.1	Assess the progress and perspectives of developing S-100 product specifications for NP data and propose the way forward for consideration by HSSC	H		2015	Permanent	O			To be considered in the context of the IMO e-navigation strategy implementation. NIPWG to consider establishing one or more project team(s) in liaison with S-100WG as required (see J.2), in particular to continue the development of Product Specifications currently assigned to the NIPWG.
F.2	Investigate the interaction between Marine Protected Area Product and ENC in ECDIS	H	Next meeting	2015	Permanent	O	Chair/Sec		In close liaison with the S-100 WG
F.3	Model the NP data where required.	H	Next meeting	2004	Permanent	O	Chair/Sec		S-100 related. To be included in Hydro domain of the FCD Register.
F.4	Review of objects and attributes Propose amendments to HYDRO domain of the FCD Register	H	Next meeting	2004	Permanent	O	Chair/Sec		S-100 related. Incorporate in FCD Register if appropriate.

Work item	Title	Priority H-high M-medium L-low	Next Milestone	Start Date	End Date	Status P-Planned O-Ongoing C-Completed S-superseded	Contact Person(s)	Related Pubs / Standard	Remarks
F.8.1	Develop S-1xx Nautical Information Product Specification								
F.8.1.2	For Marine Navigational Services	L	next meeting	2013		O	Chair/Sec	S-125	In progress IALA offers to develop draft, NIPWG, see J.5.1
F.8.1.4	For Marine Physical Environment	L	next meeting	2013	2026	O	Chair/Sec	S-126	
F.8.1.5	Catalog of nautical products	H	next meeting	2016	2023	O	Chair/Sec	S-128	Development continued by KHOA, in progress
F.8.1.6	Marine Harbour Infrastructure	H	next meeting	2020	2022	O	Chair/Sec	S-131	Contracted, delivery date Q2/2022 dependent on S-100 Ed 5 progress
F.8.2	Draft Data Classification and Encoding Guides								Document for NPs similar to Use of the Object Catalog
F.8.2.1	For Marine Navigational Services	M		-		O	Chair/Sec	S-125	In close liaison with IALA, see J.5.1
F.8.2.2	For Physical Environment	M	Next meeting	-	-	P	Chair/Sec	S-126	
F.8.2.3	For Digital Catalogue of Nautical Product	H	Next meeting	2016	2023	O	Chair/Sec	S-128	In progress
F.8.2.4	For Marine Harbour Infrastructure	H	Next meeting	2020	2022	O	Chair/Sec	S-131	
F.8.3	Monitor and Maintain NIPWG Product Specification	H	Next meeting	2019		O	Chair/Sec		S-122, S-123 and S-127 under 2 year revision cycle
G.1	Monitor the requirements for, and provision of, nautical information in e-navigation test-beds Produce NP1 sample					O			According to the tasks assigned by HSSC4. Collection of information to be modelled

Work item	Title	Priority H-high M-medium L-low	Next Milestone	Start Date	End Date	Status P-Planned O-Ongoing C-Completed S-superseded	Contact Person(s)	Related Pubs / Standard	Remarks
	data sets								
G.3	Rules and guidelines for displaying nautical information in ECDIS and in maritime services as defined by IMO								
G.3.1	Develop basic display principles for NP data intended for use in ECDIS (NP3)	M		2008		O	Chair/Sec		Close co-operation with NCWG and S-100WG required. Interoperability Spec to be considered.
G.3.2	Monitor and contribute to the development of IMO guidelines showing how navigation information received by communications equipment can be displayed in a harmonized way and what equipment functionality is necessary.	M		2015		O			e-nav IMO Strategy Implementation Plan, Task T13 (HSSC6-07.1A refers) Output number 5.2.6.2 of NCSR biennial agenda 2016-17 Completion date is unknown and dependent on the maturity of interoperability and portrayal frameworks For HSSC consideration
I.1	Maintain and extend resolutions in M-3 relating to Nautical Publications	M	Next meeting	2012	Permanent	O	Chair/Sec NIPWG	M-3	A review is required due for the harmonization of M-3 information and potential ProdSpecs content
J.3	Liaise with other HSSC WG	M		2004	Permanent	O	Chair/Sec NIPWG		
J.3.1	Liaise with the NCWG	M			Permanent	O	Chair/Sec NIPWG		Establish joint project teams as required and endorsed by HSSC.
J.3.2	Liaise with the ENCWG	M			Permanent	O	Chair/Sec NIPWG		

Work item	Title	Priority H-high M-medium L-low	Next Milestone	Start Date	End Date	Status P-Planned O-Ongoing C-Completed S-superseded	Contact Person(s)	Related Pubs / Standard	Remarks
J.3.3	Liaise with the S-100WG	H			Permanent	O	Chair/Sec NIPWG		Establish joint project teams as required and endorsed by HSSC.
J.4	Liaise with IRCC								
J.4.1	Liaise with WWNWS Sub-Committee							S-124	Monitor developments of S-124 Correspondence Group
J.5	Liaise with other international bodies which contribute to nautical information	H		2015	Permanent	O	Chair/Sec NIPWG		
J.5.1	Liaise with IALA	H		2013	Permanent	O	Chair/Sec NIPWG		
J.5.2	Liaise with International Harbor Masters' Association (IHMA)	L		2015	Permanent	O	Chair/Sec NIPWG		
J.5.3	Liaise with International Cable Protection Committee (ICPC)	L		2016	Permanent	O	Chair/Sec NIPWG		

Meetings (Task K)

Date	Location	Activity
July, August, September 2020	Video Conferences	
March 2021	Virtually, hybrid or Monaco	NIPWG8
Sept 2022	Niteroi, Brazil (invitation confirmed)	NIPWG9
Sept 2023	Monaco	NIPWG10

Chair: Eivind Mong, Canadian Coast Guard, CA

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Secretary: Thomas Loeper, NOAA, USA

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Top three work items:

- Initiate prototype implementation of existing S-1xx products in an S-100 based environment to explore governance architecture and service delivery mechanism
- Develop S-1xx nautical information Product Specifications
- Coordinate the IHO contributions to the definition and harmonisation of maritime services as defined by IMO within the remit of IHO

5. ENCWG WORK PLAN 2021-22

Tasks

A	Maintain S-52 “Specifications for Chart Content and Display Aspects of ECDIS” and its associated “Presentation Library” (IHO Task 2.4.1)
B	Maintain S-57 “IHO Transfer Standard for Digital Hydrographic Data”, including ENC Product Specification (IHO Task 2.4.2)
C	Maintain S-58 “Recommended ENC validation checks” (IHO Task 2.4.3)
D	Maintain S-61 “Product Specification for Raster Navigational Charts” (IHO Task 2.4.4)
E	Maintain S-64 “IHO Test Data Sets for ECDIS” (IHO Task 2.4.6)
F	Maintain S-65 “ENC Production, Maintenance and Distribution Guidance” (IHO Task 2.4.7)
G	Assess the impact of other IHO standards on S-52 display specifications (IHO Task 2.4.1)
H	Liaise with the NIPWG and the NCWG (IHO Task 2.1)
I	Maintain the ENC production and portrayal sections of the IHO website (IHO Task 2.4)
J	Conduct the 2021 and 2022 meetings of ENCWG and its sub-group(s) and project team(s) (IHO Task 2.1)
K	Maintain S-66 “Facts about electronic charts and carriage requirements – (IHO Task 2.4.8)
L	Consider the development of high density contour lines related to ENCs (IHO Task 2.4)
M	Maintain and monitor the existing S-63 standard (IHO Task 2.4.5)

Work items

Work item	Title	Priority H-high M-medium L-low	Next milestone	Start Date	End Date	Status P-planned O-ongoing C-completed S-Superseded	Contact Person(s)	Related Pubs / Standard	Remarks
A.1	Maintain S-52 - Specifications for Chart Content and Display Aspects of ECDIS	H	Next meeting		Permanent	O	Chair/Sec ENCWG	S-57	
A.2	Resolve any problems or errors identified in the current editions of S-52 Presentation Library and S-64 ENC Test Datasets	H			Permanent	O	Chair/Sec ENCWG	S-57, S-64	Generally OEMs going through type approval with ECDIS will identify areas for clarification or correction
B.1	Maintain S-57 "IHO Transfer Standard for Digital Hydrographic Data, including ENC Product Specification"	H			Permanent	O	Chair/Sec ENCWG	S-52, S-58	
B.2	Resolve any problems or errors identified in the current edition of S-57	H			Permanent	O	Chair ENCWG	S-57	
B.4	Maintain the ENC portrayal sections of the IHO website.	M			Permanent	O	Chair/Sec ENCWG		

Work item	Title	Priority H-high M-medium L-low	Next milestone	Start Date	End Date	Status P-planned O-ongoing C-completed S-Superseded	Contact Person(s)	Related Pubs / Standard	Remarks
B.5	S-57 to S-101 Conversion. Improving encoding rules with additional attribution to support automated conversion tools	H		Oct 2020		O	Christian Mouden Jonathan Pritchard	S-57 UOC	New work item added, approved by HSSC 12
C.1	Resolve any problems or errors identified in the current edition of S-58	H			Permanent	O	Richard Fowle		
C.2	Monitor the implementation of the new edition of S-58 and keep the recommended checks up to date	H		Oct-2020		O	Richard Fowle	S-57	New work item, HSSC 12 approved NE of S-58
E.1	Resolve any problems or errors identified in the current edition of S-64	H			Permanent	O	Chair/Sec ENCWG		
F.1	Monitor and assess proposals for amending S-65	L			Permanent	O	Chair/Sec ENCWG		
G.1	Liaise with IEC TC80 to ensure that future editions of IEC 61174 are compatible with standards maintained by ENCWG	M			Permanent	O	Chair/Sec ENCWG	S-52, IEC 61174	

Work item	Title	Priority H-high M-medium L-low	Next milestone	Start Date	End Date	Status P-planned O-ongoing C-completed S-Superseded	Contact Person(s)	Related Pubs / Standard	Remarks
H.1	Liaise with the NIPWG and the NCWG	H			Permanent	O			
I.1	Maintain the ENC production and portrayal sections of the IHO website, and support FAQ and Encoding Bulletins	H			Permanent	O	Chair / IHO Sec		
K.1	Maintain S-66 Publication				Permanent	O	Chair / IHO Sec		
M.1	Maintain and monitor the existing S-63 Data Protection Scheme	M		2016	Permanent	O	Chair, RENCs, Industry and IHO Sec.	S-63	
M.2	Assessment of S-63 impact study and potential production of a new edition of S-63.	H		2019	2021	O	Chair, RENCs, Industry and IHO Sec.	S-63	

Meetings (Task J)

Date	Location	Activity
10-12 June 2019	Monaco	ENCWG-4
15 - 16 July 2020	VTC	ENCWG-5

Chair: Thomas Mellor, UK
Vice Chair: Richard Fowle, DK
Secretary: Yong Baek, IHO Sec.

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6. HYDROGRAPHIC SURVEYS WORKING GROUP WORK PLAN 2021-22

A	Conduct at least annual meetings of HSWG and its sub-group(s) and project team(s) (IHO Tasks 2.1.2.9).
B	Maintain and promote IHO publication S-44 – <i>Standards for Hydrographic Surveys</i> – preparing and proposing revisions and amendments to reflect changes in the demands of hydrographic data users, particularly those pertaining to data quality and standards.
C	Update, maintain, and promote IHO publication C-13 – <i>IHO Manual on Hydrography</i> – to reflect current techniques, methodologies and survey systems, in particular to ensure harmonization with the standards articulated in S-44.
D	Develop and promote Satellite Derived Bathymetry (SDB) best practice and identify future development priorities.
E	Maintain close liaison with other HSSC and IRCC working groups, in particular the work of the Data Quality Working Group (DQWG) to meet the presentation/visualization requirements of nautical data to the maritime customer, and the CBSC to support the educational and best practice elements.
F	Identify new systems, technologies and methodologies and exchange experiences, best practice and challenges amongst member states in line with the IHO objectives.
G	Act as a focal point for hydrographic surveys industry engagement with the IHO.
H	Liaise with other relevant IHO Working Groups to promote harmonization across IHO standards.

Work items

Work item	Title	Priority H-high M-medium L-low	Next milestone	Start Date	End Date	Status P-planned O-ongoing C-completed S-Superseded	Contact Person(s)	Related Pubs /Standard	Remarks
A-1	Organise and conduct HSWG1meeting	H		April 2021	July 2021	C	Chair HSWGSec		
A-2	Organise and conduct HSWG2meeting	H		July 2021	April 2022	P	Chair HSWGSec		

B-1	Review S-44 Edition 6.0.0	M	Identify review cycle	2021	2022	P	All		Chair team to develop proposal for WG to review
B-2	Prepare next S-44 edition	M	Establish editorial board	April 2021	On going	O	S-44 editorial board		Dependencies: IHO website metrics available Next task: editorial board propose change recommendations
B-3	Develop S-44 promotional material	H	Consolidate and share material	April 2021	On going	O	All		
B-4	Develop S-44 education material	H	Consolidate and share material	April 2021	On going	O	All		
B-5	Identify translation opportunities for S-44	L	Supply translated material to IHO	April 2021	On going	O	Chair group		Dependency: Member states to supply translated documents
B-6	Monitor S-44 uptake worldwide	H	IHO Secretariat accept action to set up IHO download monitoring system	2021	On going	P	IHO		IHO Strategic Plan 2021-2026 (Goal2 – Target 2.2.2 – page 7) Dependencies: -IHO website metrics available -New edition of S-44 available
C-1	Review C-13 Edition 1.0.0	H	Initial meeting of project team (MHPT)	July 2021	December 2021	P	MHPT		PT to develop work plan and establish leadership mechanism by 1 August 2021
C-2	Prepare next C-13 edition	H	Compile updates and change recommendations	January 2022	December 2022	P	MHPT		Dependency: Format to be agreed by entire HSWG.
C-3	Develop C-13 promotional material	L	Consolidate and share material	July 2022	On going	P			
C-4	Develop C-13 education material	L	Consolidate and share material	July 2022	On going	P			
C-5	Identify translation opportunities for C-13	L	Supply translated material to	2023	On going	P			

			IHO						
D-1	Develop SDB best practice guidelines	M	SDBPT to draft best practice guidelines	July 2021	July 2022	P	Knut Hartmann		HSWG established SDBPT and its governance structure
D-2	Identify future development priorities	L	Develop secondary work plan	July 2022	October 2022	P	Knut Hartmann		
E	Maintain liaison with HSSC and IRCC subordinate bodies – DQWG, HDWG, TWCWG, S100WG	H	Initial meetings with WGs.	July 2021	On going	P	Chair group to facilitate		Liaison for each WG established at HSWG1
F-1	Attend relevant industry events	M	Share event dates	2021	On going	P	All		Send IHO event dates
F-2	Develop new system/technology presentation material and supporting documents	M	Provide briefings to HSWG	2021	On going	P	All		
G	Attend and represent HSWG at relevant industry fora	M	Provide briefings to HSWG	2021	On going	P	All		
H	Identify areas of overlap and potential conflicts across standards	H	Provide a list of potential standards conflicts	July 2021	On going	O	Chair group		

Meetings

Date	Location	Activity
29 June – 1 July	virtual	HSWG1
TBD	TBD	HSWG2

HSWG Chair: David Parker
 HSWG Vice-Chair: Megan Greenaway
 HSWG Secretary: Carlos Videira Marques

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 Email: Megan.Greenaway@noaa.gov
 Email: Videira.Marques@hidrografico.pt

7. TWCWG WORK PLAN 2021-22

Objective

- a) To monitor developments related to tidal and water level observation, analysis and prediction and other related information including vertical and horizontal datums;
- b) To develop and maintain the relevant IHO standards, specifications and publications for which it is responsible in liaison with the relevant IHO bodies and non-IHO entities;
- c) To develop standards for the delivery and presentation of navigationally relevant current information; and
- d) To provide technical advice and coordination on matters related to tides, water levels, currents and vertical datum.

Tasks

A	Maintain the list of standard tidal constituents (IHO Task 2.8.4)
B	Compare the tidal predictions generated as a result of analysis of a common data set using different analysis software
C	<i>Left intentionally blank</i>
D	Develop, maintain and extend a Product Specification for dynamic surface currents in ECDIS (S-111) (IHO Task 2.3.4)
E	Develop, maintain and extend a Product specification for dynamic water level in ECDIS (S-104) (IHO Task 2.3.4)
F	Liaise with S-100WG on water level and current matters relevant to ECDIS applications (IHO Task 2.3.5)
G	Liaise with industry experts on the development of product specifications for water level and currents
H	Prepare and maintain an inventory of water level gauges and current meters used by Member States and publish it on the IHO/TWCWG web site (IHO Task 2.8.5)
I	Review and maintain the Actual Tides and Currents On-Line links as published on the IHO TWCWG website
J	Maintain and extend the relevant IHO standards, specifications and publications as required (IHO Tasks 2.8.4 and 2.1.8)
K	Conduct the at least annual meetings of TWCWG and its sub-group(s) and project team(s) (IHO Tasks 2.1.2.7)
L	Develop and maintain material for course on Tides, Water Levels and Currents

Work items

Work item	Title	Priority H-high M-medium L-low	Next milestone	Start Date	End Date	Status P-planned O-ongoing C-completed S-Superseded	Contact Person(s)	Related Pubs / Standard	Remarks
A.1	Maintain the list of standard tidal constituents	M		-	Permanent	O	Chris Jones* All		Review current list of published tidal constituents
B.1	Compare the tidal predictions generated as a result of analysis of a common data set using different analysis software.	M		-	Permanent	O	Hilde Sande Borck * All		Select Common data set Analyse using different software Predict common set of tides Compare results
D.1	Develop and maintain a product specification for dynamic application of surface currents in ECDIS (S-111)	H H	Issue Edition 1.0.0 Issue Edition 2.0.0	2013 2019	2017 2018 2019 2022	QC O	See report TWCWG4: List of involved and active members: Neil Weston* Erin Nagel, Stephan Dick, Luis Becker, Gwenaële Jan, Japan, Ronald Kuilman, Raphael Malyankar		Joint project team is established as required. Liaise with S-100WG (see F.1) Liaise with industry experts (see G.1)

Work item	Title	Priority H-high M-medium L-low	Next milestone	Start Date	End Date	Status P-planned O-ongoing C-completed S-Superseded	Contact Person(s)	Related Pubs / Standard	Remarks
E.1	Develop and maintain a product specification for dynamic application of water levels in ECDIS	H	Develop draft Product Specifications (S-104) for water level information for surface navigation in S-100	2009	2017 2018 2019 2020	O	Zarina Jayaswal* Glen Rowe, Jimin Ko, Raphael Malyankar See TWCWG4 report list of MS involved		Joint project team is established as required. Liaise with S-100WG (see F.1) Liaise with industry experts (see G.1)
		H	Issue Edition 1.0.0	2019	2021	P			
		H	Issue Edition 2.0.0	2021	2024	P			
F.1	Liaise with S-100WG on water level and current matters relevant to ECDIS applications	H		-	Permanent	O	Gwenaële Jan Neil Weston Zarina Jayaswal		Joint project team is established as required.
G.1	Liaise with industry experts on the development of product specifications for water levels and currents	H		-	Permanent	O	All		
H.1	Maintain an inventory of water level gauges and current meters used by Member States and publish it on the IHO/TWCWG web site.	H		-	Permanent	O	David Wyatt* All		Initial inventory from TWCWG members available on IHO web site.
I.1	Review and maintain the Actual Tides and Currents On-Line links as published on the IHO/TWCWG website	L		-	Permanent	O	David Wyatt* All		

Work item	Title	Priority H-high M-medium L-low	Next milestone	Start Date	End Date	Status P-planned O-ongoing C-completed S-Superseded	Contact Person(s)	Related Pubs / Standard	Remarks
J.1	Maintain and extend the relevant IHO standards, specifications and publications	M		-	Permanent	O	Gwenaële Jan* Peter Stone All	S-60 User's Handbook on Datum Transformations involving WGS 84	See IHO CL10/2017 dated 1/02/2017
J.2	Maintain IHO resolutions	H		2019	2020 2021	O	Ruth Farre*All	IHO Resolutions in M-3	
L.1	Develop and maintain material for CB course on Tides and Tide gauges	H	Complete translate of course material into Spanish and Portuguese by 2018 in liaison with Regional CB Coordinator requirements	-	Permanent	O	Ruth Farre* Peter Stone Zarina Jayaswal Gwenaële Jan Cesar Borba José Ramón Torres García		Adapt currently available course material to create a course suitable for delivery in support of CBSC requests

Meetings (Task N)

Date	Location	Activity
8-12 April 2019	Busan, Republic of Korea	TWCWG-4
19-23 April 2021	Remote VTC	TWCWG-5
tbc	Cape Town, South Africa	TWCWG-6

Chair: Chris Jones (UK)

Vice Chair: Ruth Farre (South Africa)

Secretary: David Wyatt (IHO Sec.)

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8. NCWG WORK PLAN 2021-22

Tasks

A	Maintain and extend Publication S-4 'Chart Specifications of the IHO & Regulations of the IHO for INT Charts' (IHO Task 2.2.1)
B	Maintain and extend Publication S-11 Part A 'Guidance for the Preparation and Maintenance of INT Chart schemes' (IHO Task 2.2.2)
D	Development of new (and revised) symbology (IHO Task 2.2.1)
E	Maintenance of S-4 supplementary publications INT 1, 2 & 3 (IHO Task 2.2.1)
G	Conduct meetings of NCWG (IHO Task 2.1)
H	Provide technical assistance to other IHO working groups and support regarding the implementation of S-100 (IHO Task 2.3)

Work items

* Allowing for approval via HSSC (in accordance with Resolution 2/2007) before MS and publication.

No	Work item	Priority H-high M-medium L-low	Next Milestone	Start Date	End Date	Status P-Planned O-Ongoing C-Completed	Contact Person(s)	Affected Pubs/Standard	Remarks
A26	Portrayal subWG	H	Agree protocol for seeking advice from NCWG	2016		O	Chair NCWG		HSSC7 Action 18 NCWG2 Actions 5, 22, 30-32 Attendance at NIPWG Visualization workshop May 2017. NCWG3 Action 15
A28	Future of S-4	H	NCWG6 – discuss future of S-4 and agree work tasks	2020	2022	O	Chair NCWG	S-4	NCWG3 Agenda 7.4: waiting on progress with A16
E1	Maintain official INT 1s		UK to take over English INT 1 from DE and publish new edition			O	UK: Sam Lerigo FR: S Guillou ES: J. Bustamante	INT 1	DE INT 1 edition 9 published August 2018 ES INT 1 edition 6 published April 2018 FR INT 1 edition 7 published in 2019 UKHO have taken over responsibility for English INT 1 from DE and published edition 8 in 2020
E9	Develop new section V for INT1 for 'data quality'	M	Draft under consideration by INT1 subWG	2014	2021	O	Chair NCWG INT1 subWG	INT1	CSPCWG10 Action 35 NCWG3 Agenda 11.2: Transferred to UK NCWG4 – Action 4/18 ongoing
E10	Symbol library	L	UK to confirm freedom to use UK's symbol set	2016		O	UK (N Rodwell) US (C Harmon)	S-4, INT1	NCWG Actions 45, 46 NCWG3 Agenda 3: Not required to progress at this time.
E11	Develop baseline symbology to support automated chart production	H	NCWG6 – discuss and agree work tasks	2020		P		INT1, S-4	New proposal by NCWG at HSSC12 VTC Meeting held 1 March 2021 – recommendation to formally establish a Project Team.

Meetings (Task G)

Date	Location	Activity
5-8 November 2019	Stockholm, Sweden	NCWG5
3-4 November 2020	Virtual Event	NCWG6
9-12 November 2021	Cadiz, Spain (hybrid tbc)	NCWG7
2022	Wollogong, Australia (tbc)	NCWG8

Chairman: Mikko Hovi (FI) Email: mikko.hovi@traficom.fi
Vice Chairman: Nick Rodwell (UK) Email: Nick.Rodwell@UKHO.gov.uk
Secretary: Edward Hanks (NO) Email: Edward.Hands@kartverket.no

9. DQWG WORK PLAN 2021-22

Tasks

- A. Develop and maintain a data quality checklist for product specification developers (IHO Task 2.8)
- B. Periodically review S-100 based product specifications to ensure the data quality aspects have been taken into consideration and provide input papers for WGs and PTs consideration if deemed necessary (IHO Task 2.3)
- C. Monitor periodically developments of ISO and other international standards regarding quality information, and advise accordingly (IHO Task 2.8)
- D. Provide guidance on data quality aspects to hydrographic offices, in particular to ensure harmonized implementation (IHO Task 2.1 and 2.5.1)
- E. Provide data quality educational material for the use of mariners (IHO Task 2.4.9)
- F. Review appropriate methodology for the display of quality information to product specification developers (IHO Task 2.1)
- G. Propose new data quality topics for consideration by HSSC (IHO Task 2.8)

Work Items

Task	Work Item	Priority H=High M= Medium L=Low	Milestones	Start Date	End Date	Status P=planned O=Ongoing C=Completed	Contact Person	Affected Pubs/ Standards	Remarks
B.2	Development of a minimum standard for Data Validation in S-1xx based products.	M	S-101 Ed.2.0.0	2018	2024	P	Chair	S-1xx	None
B.3	Review S-1xx based PS (Ed.1.0.0 or higher)	H	DQWG17	2021	2022	P	Chair	S-1xx	None
B.4	Review S-1xx Feature Catalogues	M	S-101 Ed.1.1.0	2021	2023	P	Chair	S-1xx	None
C.1	Review S-100 Section 4C.	L	S-100 Ed 5.0.0	2022	2024	P	Chair	S-100	DQWG15-04.4B
D.2	Provide guidance documentation how to populate CATZOC values.	H	DQWG17	2021	2022	O	Chair	S-101 DCEG	None
G.1	Monitor development of autonomous shipping by the industry	M	DQWG17	2020	2022	O	Chair	S-101, S-102, S-104	None

Meetings

Date	Location	Activity
4-7 February 2020	IHO Secretariat, Monaco	DQWG15
9-10 February 2021	Online meeting	DQWG16

8-11 February 2022	To be decided	DQWG17
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Chair: Edward Hands (Norway) Email: Edward.Hands@kartverket.no
Vice-Chair: Lingzhi Wu (China) Email: 3511431@qq.com
Secretary: Vacant Email:

10. HDWG WORK PLAN 2021-22

Tasks

A	Maintain and extend the definitions in the IHO S-32 Hydrographic Dictionary Registry (IHO Task 2.8.2)
B	Liaise with other IHO bodies preparing publications containing glossaries (IHO Task 2.8.2)
C	Liaise with other organizations developing dictionaries and/or glossaries (IHO Task 2.8.2)
D	Develop a digital structure and database application to support the IHO S-32 Hydrographic Dictionary Registry on-line version(IHO Task 2.8.2)

Work items

Task	Work item	Priority H-high M-medium L-low	Next milestone	Start Date	End Date	Status P-planned O-ongoing C-completed	Contact Person(s) * indicates leader	Related Pubs / Standard	Remarks
A.1	Review all terms currently included in S-32 for their relevance in accordance with the S-32 Business Rules and propose which definitions should be removed from S-32	M	a. Terms a – d b. Terms e – l c. Terms m – r d. Terms s – z	2018 2018 2018 2018	2020 2020 2021 2021	C P P P	J. Laporte	S-32	<ul style="list-style-type: none"> The first milestone (a) achieved by the Chairman has required over 170 working hours. Further tasks to be discussed and eventually distributed amongst HDWG members accordingly
A.2	Complete the HD Arabic national version	H		2018	2021	O	Juma al Busaidi	S-32	
A.3	Complete the HD Korean national version	H		2021	2022	O	Aeri Yu	S-32	
A.4	Complete the French version and use it as a template to assess the amount of work needed for updating other national versions	M		2020	2020-2021	P	J. Laporte	S-32	<ul style="list-style-type: none"> Ongoing. In liaison with Canada and French HOs Terms a – d completed at an average speed of 8 words per hour

Task	Work item	Priority H-high M-medium L-low	Next milestone	Start Date	End Date	Status P-planned O-ongoing C-completed	Contact Person(s) * indicates leader	Related Pubs / Standard	Remarks
B	Japanese and Korean HD national version	H		2020	2020	O	David Wyatt		Identify Japan HD representatives
C	Liaise with the IOC to examine commonality between HD and Oceanography Dictionary	M		2020	2021	P	J. Laporte	S-32	First contact established
D.1	Develop structure and database application to support the on-line dictionary	H		2017	2020	C	Armstrong	S-32	Completed by Vice-Chair Lady in liaison with Yong Baek. Tests still ongoing
D.2	Harmonize the S-32 IHO Hydrographic Dictionary database with the IHO GI Registry through the Concept Registry Domain Control Body	H		2020	2020-2021	O	Susie Lyu Yuxiao	S-32	First draft version completed, in liaison with Jeff Wooton, the S-100 GI Registry Manager. Tests still ongoing. Pending development of conceptual data interface by RoK,

Meetings (IHO WP task 3.1.8)

Date	Location	Activity
25-26 July 2017	London, UK	HDWG1
27-28 November 2018	IHO, Monaco	HDWG2
10 - 12 November 2020 (postponed)	China MSA, Guangzhou/Canton (postponed)	HDWG3
2021 (yet to be defined)	China MSA, Guangzhou	HDWG3

Chair: Jean LAPORTE, France
Vice-Chair: “Susie” Lyu Yu Xiao, China
Secretary: David WYATT, IHO Sec.

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11. ABLOS WORK PLAN 2021-22

Tasks

A	Organise the 11 th ABLOS Conference in 2022 (IHO Task 2.7.1)
B	Maintain IHO Publication C-51 “Technical Aspects of the Law of the Sea (TALOS) Manual” (IHO Task 2.7.2)
C	Deliver a standard training program on the hydrographic aspects of maritime delimitation (IHO Task 3.3.11)
D	Provide advice and guidance on the technical aspect of the Law of the Sea to relevant organizations, bodies and Member States (IHO Task 2.7.2)
E	Organize and prepare ABLOS business meetings in 2021 and 2022 (IHO Task 2.1.2.8)

Work items

Task	Work item	Priority H-high M-medium L-low	Next milestone	Start Date	End Date	Status P-planned O-ongoing C-completed	Contact Person(s) * indicates leader	Related Pubs / Standard	Remarks
A1	Organise 11 th ABLOS Conference	H	Begin advertising Identify and invite key note speaker Confirm conference title Attract presentation abstracts	2019 2019 2019 2019	2022 2021 2021 2022	O O O PO	All members of ABLOS through Committee	N/A	
A2	Conference support and outreach	H	Develop and maintain ABLOS website	2019	On going	P	Niels Andersen		
B1	Prepare draft 6 th Edition of C-51 (TALOS Manual) for adoption by Member States	M	Review initial Spanish translation and propose amendments	2018	2020	O	Juan Carlos Báez Soto*	IHO Publication C-51	

Task	Work item	Priority H-high M-medium L-low	Next milestone	Start Date	End Date	Status P-planned O-ongoing C-completed	Contact Person(s) * indicates leader	Related Pubs / Standard	Remarks	
B2	Commence 7 th Edition	H	Confirm Format and Content	2019	2020 2021	O	Grant Boyes*	IHO Publication C-51		
		H	Review contents of chapters and identify areas requiring revision	2020	2021	P	Grant Boyes*			
		M	Develop draft revised chapters and seek ABLOS consensus	2021	2023	P	Grant Boyes*			
		M	Submit to HSSC for endorsement and circulation to IHO MS and AIG EC for approval and adoption	2023	2024	P	ABLOS Chair			IHO Res. 2/2007, as amended
		M	Progress French and Spanish translations	2023	2024	P	Marie-Françoise Lequentrec-Lalancette*/ Juan Carlos Báez Soto*			
C1	Deliver standard training programmes for the CBSC	H	Develop and maintain core training material	2011	Continuous	O	Hyunsoo Kim* Isabel King Jeck Fiona Bloor Juan Carlos Báez Soto	IHO Publication C-51	No workshops planned in 2021 in the CBSC Work Plan.	
D1	Provide advice and guidance on the technical aspect of the Law of the Sea	H		Continuous		O	All members of ABLOS through the Chair			

Meetings (Tasks A & E)

Date	Location	Activity
22 – 25 October 2018	Qatar	ABLOS 25
6 - 8 October 2020	Remote VTC	ABLOS 27
4 - 6 October 2021	IHO, Monaco	ABLOS 28 and Webinar
3 - 6 October 2022	IHO, Monaco	ABLOS 29 and 11 th ABLOS Conference

Chair: Izabel King Jeck Email: izabel@marinha.mil.br

Vice-Chair: Juan Carlos Báez Soto Email: jcbaez@dgf.uchile.cl

Secretary: David Wyatt Email: adso@iho.int

12. COORDINATION WORK PLAN 2021-22

Tasks

A	As required, establish Working Groups to fulfil the Committee Work Plan, monitor their work and review annually the continuing need for each Working Group previously established by the Committee (HSSC TOR)
B	Support the IHO Secretariat to implement the planning mechanism annually and at the end of each 3-year cycle (including preparation of next session of the IHO Assembly)
C	Organize, prepare and report meetings of HSSC working groups (IHO Task 2.1.2)
D	Conduct the 2021 and 2022 meetings of HSSC (IHO Task 2.1.1)

Work items

Work item	Task	Priority H-high M-medium L-low	Next milestone	Start Date	End Date	Status P-planned O-ongoing C-completed S-Superseded	Contact Person(s)	Related Pubs / Standard	Remarks
A3	Establish the MASS Project Team	M	HSSC-14		HSSC-15	O			IHO CL 23/2021 refers
A4	Establish the S-130 Project Team	M	HSSC-14			O			IHO CL 19/2021 and CL 33/2021 refer
B2	Contribute to the development of the S-100 Implementation Strategy	H	C-5	2018	2024	O			Amendments and draft proposal to an Annex B is submitted to C-5.
B3	Implement the Revised Strategic Plan	M	C-5	2020	2026	O			Allocation of SPIs to WGs and 2026 targets estimate. Proposed metrics to measure these SPIs is submitted to C-5.

Meetings (Task D)

Date	Location	Activity
9 Dec 2020	VTC	Outcome of A-2 and C-4

HSSC Chair: Magnus Wallhagen, Sweden

HSSC Vice Chair: Nathalie Leidinger, France

HSSC Secretary: Abri Kampfner, IHO Sec.

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