

# **1<sup>ST</sup> SESSION OF THE IHO ASSEMBLY**

**Monaco, 24-28 April 2017**



**PROPOSED  
3-YEAR IHO WORK PROGRAMME  
FOR THE PERIOD  
2018-2020**



## Introduction

Article 6(g)(v) of the amended Convention on the IHO that entered in to force on 8 November 2016, stipulates that the Council *...prepare, with the support of the Secretary-General, proposals concerning the overall strategy and the work programme to be adopted by the Assembly.*

Since a Council will not be established before the first session of the Assembly, the Secretary-General has followed the practice that was in place prior to the amended Convention entering in to force, by preparing this proposed Work Programme to be carried out during the period 2018-2020, taking into account inputs from the two principal committees - HSSC and IRCC, together with the financial implications related to it.

This proposed Work Programme, which also takes into account the IHO Strategic Plan and the risk analysis shown in Annex A, should be considered alongside the proposed Budget for 2018-2020 which is submitted separately for the consideration of the Assembly.

Annex A provides an updated risk analysis based on the methodology described in the current IHO Strategic Plan that was adopted in 2009.

Annex B provides diagrams that illustrate the financial resources allocated from the IHO budget to each Programme.

## Work Programme Structure

The IHO has defined three programmes to meet its goals:

- **Programme 1 - Corporate Affairs**, under the principal responsibility of the Secretary-General;
- **Programme 2 - Hydrographic Services and Standards**, under the principal responsibility of the Hydrographic Services and Standards Committee (HSSC);
- **Programme 3 - Inter Regional Coordination and Support**, under the principal responsibility of the Inter Regional Coordination Committee (IRCC).

This proposed Work Programme follows that structure.

For each programme, various *elements* have been identified, each with a stated objective. The elements are then supported by tasks (actions). In identifying the tasks, the input from the Chairs of the relevant IHO bodies together with other information held by the Secretariat have been taken into account.

In addition, for each task, the work programme identifies:

- the principal strategic directions that the task supports;
- the principal stakeholders, if any, outside the IHO that may be affected;
- the principal deliverables and associated milestones, as appropriate;
- the lead authority and participants, if any;
- the estimated resources from the IHO budget, when significant;
- any other resources, when significant; and
- any risk to delivery, when significant.

## Action Requested of the Assembly

The Secretary-General submits a three-year Work Programme 2018-2020 for the **approval** of the Assembly.



# WORK PROGRAMME 1

## CORPORATE AFFAIRS

**Concept:**

Programme 1 covers the provision of the services provided by the Secretariat of the IHO and, through the Secretary-General and the Directors, the management and fostering of relations with intergovernmental and other international organizations. Work Programme 1 is directed primarily by the Secretary-General. It is integral to the achievement of all the Strategic Directions; some directly, others indirectly.

Element 1.1	Co-operation with International Organizations and participation in relevant meetings
Element 1.2	Information Management
Element 1.3	Public Relations and Outreach
Element 1.4	Work Programme & Budget, Strategic Plan and Performance Monitoring
Element 1.5	Secretariat Services
Element 1.6	IHO Council and Assembly

**Element 1.1 Cooperation with International Organizations and participation in relevant meetings**

**Objective:** Maintain relationships with relevant international organizations in order to further the interests of the IHO by enlisting their support and cooperation, and participate in projects of common interest. Represent the IHO and participate in international forums dealing with matters of relevance to the objectives of the IHO and the IHO WP, including:

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
1.1.1	Maintain relationships with the Government of Monaco and the diplomatic corps accredited in Monaco	1.1 1.2 1.3 1.5 2.3 3.1 3.2 3.3 3.4 4.4		Continuous	Secretariat			
1.1.2	Maintain relationship with the Antarctic Treaty Consultative Meeting (ATCM)	1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3	Mariners, Ship operators, Marine scientific community	continuous	Secretariat	1 meeting annually Travel cost for SG or Dir		

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
1.1.3	Maintain relationship with the Comité International Radio Maritime (CIRM)	1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3	Navigation equipment manufacturers	continuous	Secretariat	1 meeting annually Travel cost for 1 SG/Dir/AD		
1.1.4	Maintain relationship with European Union Initiatives (such as INSPIRE and EMODnet)	1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3		continuous	Secretariat IENWG	2 meetings annually. Travel cost for 1 SG/Dir/AD per meeting		
1.1.5	Maintain relationship with the Group on Earth Observation (GEO)	1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3		continuous	Secretariat GEBCO GC MSDIWG	1 meeting annually. Travel cost for 1 SG/Dir/AD		

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
1.1.6	Maintain relationship with the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA ) including the IALA e-NAV Committee	1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 4.4	Aids to Navigation authorities, e- Navigation data service providers	continuous	Secretariat HSSC WGs	2 meetings annually.  Travel cost for 1 SG/Dir/AD per meeting		
1.1.7	Maintain relationship with the International Electrotechnical Commission (IEC), including:  IEC Technical Committee 80	1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3	Equipment manufacturers Type approval bodies	continuous	Secretariat HSSC WGs	1 meeting annually.  Travel cost for 1 Dir/AD		
1.1.8	Maintain relationship with the International Maritime Organization (IMO), including:  Assembly Council MSC NCSR TCC	1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 4.4	Mariners, Ship operators, Maritime Administrations	continuous	Secretariat	5 meetings annually,  Travel cost for each meeting for 1 SG/Dir + AD or 1 AD.		



Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
1.1.9	Maintain relationship with the Intergovernmental Oceanographic Commission (IOC) of UNESCO, including: Assembly Council Specialized WGs	1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3	Marine scientific community	continuous	Secretariat GEBCO GC MSDIWG	2 meetings annually.  Travel cost for 1 SG/Dir/AD		
1.1.10	Maintain relationship with the International Organization for Standardization (ISO), including:  ISO Technical Committee 211	1.1 1.2 1.3 1.4 1.5 2.5 2.6 3.1 3.2 3.3		continuous	Secretariat	2 meetings annually.  Travel cost for 1 Dir/AD		
1.1.11	Maintain relationship with the Joint Board of Geospatial Information Societies (JB-GIS)	1.1 1.2 1.3 1.4 1.5 2.6 3.1 3.2 3.3		annual	Secretariat	1 meeting annually if coinciding with other meetings. No significant additional cost		

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
1.1.12	Maintain relationship with United Nations (UN) organizations based in New York, including: the UN Committee of Experts on Global Geospatial Information Management (UN-GGIM) the UN Division on Ocean Affairs and Law of the Sea (UN-DOALOS)	1.1 1.2 1.3 1.4 1.5 2.5 2.6 3.1 3.2 3.3	Marine geospatial data providers and users	continuous	Secretariat MSDIWG ABLOS	2 meetings annually. Travel cost for 1 SG/Dir		
1.1.13	Maintain relationship with the World Meteorological Organization (WMO)	1.1 1.2 1.3 1.4 1.5 2.5 3.1 3.2 3.3	Mariners, Ship operators, Maritime Administrations	continuous	Secretariat	1 meeting annually. Travel cost for 1 SG/Dir/AD		

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
1.1.14	Maintain relationship with the International Seabed Authority (ISA)	1.1 1.2 1.3 1.4 1.5 2.5 2.6 3.1 3.2 3.3	Marine geospatial data providers and users	continuous	Secretariat	1 meeting annually. Travel cost for 1 SG/Dir		
1.1.15	Maintain relationships with other international and observer organizations when their agendas have relevance to the programme of the IHO	1.1 1.2 1.3 1.4 1.5 2.5 2.6 3.1 3.2 3.3		continuous	Secretariat	Participation to be determined on an annual basis, subject to the agenda of the organization and its significance to the IHO WP  Up to 10 meetings annually  Travel cost for 1 SG/Dir/AD per meeting		

**Element 1.2 Information Management****Objective:** Provide Member States and IHO stakeholders with accurate and relevant information in a timely and accessible manner.

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
1.2.1	Maintain and extend the IHO website	1.1 1.2 1.4 1.5 2.1 2.2 3.2 3.3 4.1		continuous	Secretariat	Use of commercial contract support  Maintenance included in 1.2.4		
1.2.2	Maintain and extend the IHO GIS, webserver and web mapping services in support of RHCs, ENC production coordination, INT chart coordination, C-55 and other related activities	1.1 1.2 1.4 1.5 2.2 2.6 3.2 3.3 3.4 4.2		continuous	Secretariat	Use of commercial contract support  Maintenance included in 1.2.3		
1.2.3	Maintain and extend the Secretariat Admin IT infrastructure, including in-house publishing facilities	1.1 1.2 1.3 1.4 3.3 4.1		continuous	Secretariat	95k€ annually (includes hardware, software and contract maintenance support)		

<b>Task</b>	<b>Description</b>	<b>SD</b>	<b>Notable stakeholder(s) outside the IHO</b>	<b>Notable deliverables / milestones and timing</b>	<b>Lead authority / Participants</b>	<b>Notable specific resources from the IHO budget</b>	<b>Other resources</b>	<b>Significant risk to delivery</b>
1.2.4	Maintain the IHO reference library collection including the incorporation of new material	1.5 3.2 3.3 3.4		continuous	Secretariat	1K€ annually		

### Element 1.3 Public Relations and Outreach

**Objective:** Raise awareness of the role of the IHO and the value and importance of hydrography and nautical charting services. Provide advice and guidance on States obligations under international regulations such as SOLAS Chapter V and highlight the importance of coordinated efforts in providing for safety of navigation, protection of the marine environment and the sustainable management and development of the oceans, seas and waterways. Stress the importance of becoming an IHO Member State.

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
1.3.1	Promote the IHO through publicity and public relations initiatives	1.5 2.6 3.1 3.2 3.3		Continuous Preparation and celebration of the centenary of the 1 <sup>st</sup> International Hydrographic Conference in 2019 Preparation of the centenary of the establishment of the IHB in 2021	Secretariat Member States	15k€ annually		
1.3.2	Encourage new membership of the IHO	2.3 2.4		Participation of non-Member States in RHC and IHO activities New Member States	Secretariat RHC Chairs (except: ARHC, NHC, NSHC, USCHC)	Visits normally undertaken as side-trips in conjunction with travel to other meetings Some high-level visits funded by Capacity Building Fund (see programme 3)		

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
1.3.3	Celebrate World Hydrography Day including the preparation of information to support the themes	1.5 2.6 3.1 3.2 3.3		annual	Secretariat Member States	7K€ annually		
1.3.4	Compile and publish P-1 – <i>International Hydrographic Review</i> with the assistance of a paid editor	1.5 2.6 3.1 3.2 3.3		continuous	Secretariat Member States	10K€ annually		Lack of suitable papers provided by MS and other contributors

**Element 1.4 Work Programme & Budget, Strategic Plan and Performance Monitoring**

**Objective:** Ensure that the formulation and the execution of the IHO Work Programme and Budget is managed, monitored and executed efficiently to best meet the requirements of Member States and the interests of stakeholders. This Element focuses on the implementation of the IHO's Strategic Plan particularly with regard to risk assessment and performance indicators.

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
1.4.1	Execute the IHO Work Programme and Budget approved by the 1 <sup>st</sup> Session of the Assembly, monitoring its progress and proposing or implementing any necessary adjustments according to the circumstances and the regulations	All SDs		continuous	Secretariat Council			
1.4.2	Develop and propose future IHO Work Programme, Budget and Strategic Plan			continuous	Secretariat Council Assembly			



Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
1.4.3	Administer the processes for programme management, performance monitoring and risk assessment	1.1 4.1 4.4		continuous	Secretariat			Required information not being provided by MS, RHCs or Organs of the IHO.  Limited availability of the Secretariat to collate and analyse results
1.4.4	Conduct biennial IHO stakeholders' forums	1.2 1.3 1.4 1.5 2.6 3.1 3.2 3.3 3.4 4.4		2019	Secretariat	1 meeting every 2 years back-to-back with another meeting  Cost subject to the venue	Travel cost, per diem. and working hours for MS and other representatives to prepare for and attend the meetings	

**Element 1.5 Secretariat Services**

**Objective:** Ensure that the Secretariat meets the requirements set by the Member States, by providing the best service within the resources available.

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
1.5.1	Maintain formal communication between the Secretariat and the Member States through Circular Letters	2.2 4.1 4.2 4.3 4.4		continuous	Secretariat			
1.5.2	Maintain, update and develop procedures to facilitate and improve the effectiveness of the finance and administrative work of the Secretariat	All SDs		continuous	Secretariat			
1.5.3	Provide in-house translation services English/French and French/English in support of the IHO WP Include Spanish translations as much as possible in accordance with the relevant IHO Resolutions	2.2 4.1 4.3 4.4		continuous	Secretariat		MS encouraged to volunteer to translate lower priority IHO publications from EN to FR and SP	Translation workload exceeds the translating capacity of the existing number of staff

1.5.4	Engage contract support to supplement the maintenance and development of IHO publications beyond the resources or competence of the Secretariat or the IHO WGs, including: - Translation - Technical editing	3.3 4.1		continuous	Secretariat	20k€ each year		
1.5.5	Compile, maintain and publish IHO publications that are not allocated to a specific IHO body, including: P-5 – IHO Yearbook P-7 – IHO Annual Report P-6 – Proceedings of the Assembly and of the Council M-3 –Resolutions of the IHO	1.2 3.3 4.1		As required	Secretariat			
1.5.6	Secretariat Staff training	1.1 4.1				7k€ each year		
1.5.7	Monitor and maintain the Staff Regulations and the Job Descriptions of the Staff of the IHO Secretariat in step with the evolution of the IHO Work Programme and IHO requirements	4.1		continuous	Secretariat			

1.5.8	Maintain the premises and facilities of the IHO Secretariat as required as the occupant, including renovations or modifications as requirements arise	4.1		continuous	Secretariat	70K€ each year		
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**Element 1.6 IHO Council and Assembly**

**Objective:** Ensure the successful functioning of sessions of the Council and the Assembly so that they fulfil their top-level governance and decision-making functions in accordance with the Convention and the other basic documents of the Organization.

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
1.6.1	Prepare and conduct the 2 <sup>nd</sup> session of the IHO Assembly	2.1 2.2 4.1 4.4		2020	Secretariat	Funded by the Conference Fund	Travel cost, per diem. and working hours for MS and other representatives to prepare for and attend the Assembly	
1.6.2	Prepare and conduct annual sessions of the IHO Council	2.1 2.2 4.1 4.4		annual	Secretariat	20K€ each year Travel for minimum of SG, 2 Dir, 2AD if session held outside Monaco	Travel cost, per diem. and working hours for MS and other representatives to prepare for and attend a session of the Council	

# WORK PROGRAMME 2

## HYDROGRAPHIC SERVICES AND STANDARDS

**Concept:**

Programme 2 focuses on the implementation of component 1.4 of Strategic Direction (SD) 1: *“developing, improving, promulgating and promoting clear, uniform, global hydrographic standards to enhance safety of navigation at sea, protection of the marine environment, maritime security and economic development”*.

Element 2.1	Programme Coordination
Element 2.2	Foundational Nautical Cartography Framework
Element 2.3	S-100 Framework
Element 2.4	S-57 Framework
Element 2.5	Support the implementation of e-navigation and Marine Spatial Data Infrastructures (MSDI)
Element 2.6	Hydrographic Surveying
Element 2.7	Hydrographic aspects of UNCLOS
Element 2.8	Other technical standards, specifications, guidelines and tools

**Element 2.1 Programme Coordination****Objective:** Monitor and implement Programme 2 through the HSSC and its subordinate organs.

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
2.1.1	Organize, prepare, and report annual meetings of HSSC	1.1 1.2 1.3 1.4 2.1 2.5 2.6 4.1 4.2		Monitor and approve HSSC Work Programme - Annual	HSSC Chair WG Chairs Secretariat	Travel cost for 1 Dir + 2 ADs  Travel cost and per diem for pre-meeting briefing of Chair	Travel cost, per diem. and working hours for MS and other representatives to prepare for and attend the meeting	Inability of MS and others to participate in meetings
2.1.2	Organize, prepare and report meetings of HSSC working groups	1.4		As defined in the HSSC Work Programme	WG Chairs Secretariat	Travel cost, per diem and working hours 1 AD / meeting	Travel cost, per diem. and working hours for MS and other participants to prepare for and attend the meeting	Inability of MS and others to participate in meetings
2.1.3	Prepare for and represent HSSC at meetings of the Council	1.1		Submit report and recommendations - Annual	HSSC Chair Secretariat	Travel cost and per diem for HSSC Chair		

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
2.1.4	Prepare for and represent HSSC at 2 <sup>nd</sup> session of the IHO Assembly	1.1		Submit reports and recommendations (through the Council) - 2020	HSSC Chair Secretariat			
2.1.5	Monitor the development of related international standards, specifications and guidance	1.2	IALA IEC IMO ISO OGC	Identify and attend relevant meetings and activities and report outcome - as required (see also programme 1)	HSSC Chair Group Secretariat			
2.1.6	Provide technical outreach, advice and guidance in relation to IHO standards, specifications and guidance	4.1		Identify and attend relevant meetings and activities and report outcome - as required	HSSC Chair Group Secretariat	3 meetings per year Travel cost 1 Dir/AD per meeting		
2.1.7	Specify and develop a Document Management System for the collaborative drafting of complex standards	1.1		Draft preliminary specifications and investigate possible solutions	HSSC Chair Group Secretariat	Contract support if appropriate		
2.1.8	Maintain and extend IHO Resolutions (M-3) related to technical issues	1.1		Draft proposed amendments for the consideration of the Council -2019	HSSC All WG			



**Element 2.2 Foundational Nautical Cartography Framework**

**Objective:** Develop, maintain and promote the foundational standards, specifications, guidelines and services related to nautical cartography to meet the requirements of the stakeholders.

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
2.2.1	Maintain S-4 ( <i>Regulations for International (INT) Charts and Chart Specifications of the IHO</i> ) and related publications (INT 1/2/3)	1.4			NCWG			
2.2.2	Maintain S-11 Part A - <i>Guidance for the Preparation and Maintenance of International Chart Schemes and Catalogue of International (INT) Charts</i>	1.4			NCWG			
2.2.3	Maintain the INTtoGIS infrastructure	1.1			NCWG Secretariat		Support of the Republic of Korea	

**Element 2.3 S-100 Framework****Objective:** Develop, maintain and promote the S-100 framework in order to meet the requirements of the stakeholders.

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
2.3.1	Maintain and extend the S-100 GI Registry	1.4			S-100WG Secretariat		Support of the Republic of Korea	
2.3.2	Maintain and extend S-100 - <i>IHO Universal Hydrographic Data Model</i>	1.4		S-100 Test bed - 2018 Edition 4.0.0 S-100 - 2020	S-100WG			Inability of MS and others to participate in the work
2.3.3	Develop and maintain S-99 - <i>Operational Procedures for the Organization and Management of the S-100 Geospatial Information Registry</i>	1.4		Edition 2.0.0 S-99 - 2018	S-100WG			

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
2.3.4	Develop and maintain S-10x Product Specifications	1.4	ECDIS OEM GIS Community Data providers	Edition 1.0.0 S-101 - 2018 S-101 Implementation Plan - 2018 Edition 2.0.0 S-102 - 2017 Edition 1.0.0 S-111 - 2018 Edition 1.0.0 S-122 - 2019 Edition 1.0.0 S-123 – 2020	Project teams Relevant WGs	Contract support funded by the Special Projects Fund		Inability of MS and others to participate in the work
2.3.5	Provide advice and guidance to other organizations developing S-100 based Product Specifications	1.2 1.3			S-100WG Secretariat	2 meetings per year Travel cost 1 AD	Travel cost and working hours MS Rep.	Limited expertise available

**Element 2.4 S-57 Framework****Objective:** Maintain the S-57 framework fit for purpose.

<b>Task</b>	<b>Description</b>	<b>SD</b>	<b>Notable stakeholder(s) outside the IHO</b>	<b>Notable deliverables / milestones and timing</b>	<b>Lead authority / Participants</b>	<b>Notable specific resources from the IHO budget</b>	<b>Other resources</b>	<b>Significant risk to delivery</b>
2.4.1	Maintain S-52 - <i>Specifications for Chart Content and Display Aspects of ECDIS</i>	1.4	ECDIS OEM		ENCWG			
2.4.2	Maintain S-57 - <i>IHO Transfer Standard for Digital Hydrographic Data</i> , including ENC Product Specification	1.4	ECDIS OEM Data servers		ENCWG			Inability of MS and others to participate in the work
2.4.3	Maintain S-58 - <i>ENC Validation Checks</i>	1.4			ENCWG			Inability of MS and others to participate in the work
2.4.4	Maintain S-61 - <i>Product Specification for Raster Navigational Charts (RNC)</i>	1.4	ECDIS OEM Data servers	No action expected	ENCWG			
2.4.5	Maintain S-63 - <i>IHO Data Protection Scheme</i>	1.4			ENCWG DPSWG			Inability of MS and others to participate in the work

<b>Task</b>	<b>Description</b>	<b>SD</b>	<b>Notable stakeholder(s) outside the IHO</b>	<b>Notable deliverables / milestones and timing</b>	<b>Lead authority / Participants</b>	<b>Notable specific resources from the IHO budget</b>	<b>Other resources</b>	<b>Significant risk to delivery</b>
2.4.6	Maintain S-64 - <i>IHO Test Data Sets for ECDIS</i>	1.4			ENCWG DPSWG			
2.4.7	Maintain S-65 - <i>ENCs: Production, Maintenance and Distribution Guidance</i>	1.4			ENCWG			
2.4.8	Maintain S-66 - <i>Facts about Electronic Charts and Carriage Requirements</i>	1.4		New Edition 2019 (tbc)	ENCWG			

**Element 2.5 Support the implementation of e-navigation and Marine Spatial Data Infrastructures (MSDI)**

**Objective:** Provide technical support to the development of new services and functionalities required by the implementation of e-navigation and MSDI.

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
2.5.1	Monitor and assess requirements related to data flow, data security, data quality, backup arrangements, time-varying information, etc.	1.1 2.5			All WG			Inability of MS and others to participate in the work
2.5.2	Support the development and implementation of Maritime Service Portfolios (MSP)	1.1 2.5	IALA IMO	Preparation of the provision of a MSP “Hydrographic Information” – 2018  Provision of an MSP “Hydrographic Information” – 2019 ( <i>include participation in the IMO/IHO HGDM</i> )	NIPWG NCWG S-100WG  TWCWG WWNWS-SC			Inability of MS and others to participate in the work

**Element 2.6 Hydrographic Surveying****Objective:** Maintain S-44 and related IHO documents fit for purpose.

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
2.6.1	Maintain and extend S-44 - <i>IHO Standards for Hydrographic Surveys</i>	1.4		Report annually to HSSC Edition 6.0.0 of S-44 - 2019	HS PT			Inability of MS and others to participate in the work

**Element 2.7 Hydrographic aspects of UNCLOS**

**Objective:** Monitor developments related to the hydrographic aspects of UNCLOS and maintain the relevant IHO publications fit for purpose.

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
2.7.1	Organize the biennial ABLOS Conference	1.3 4.1		ABLOS Conferences 2019			Self-funding	
2.7.2	Maintain C-51 - <i>Manual on Technical Aspects of the UN Convention on the Law of the Sea</i>	1.4		Edition 6.0.0 in 2018				



**Element 2.8 Other technical standards, specifications, guidelines and tools****Objective:** Maintain technical standards, specifications, guidelines and tools not included in the previous elements fit for purpose.

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
2.8.1	Maintain S-12 - <i>Standardization of List of Lights and Fog Signals</i>	1.4		Revision as appropriate No action expected	NIPWG			
2.8.2	Maintain S-32- <i>Hydrographic Dictionary</i>	1.4		New trilingual wiki version - 2019	HDWG	Contract support funded by the Special Projects Fund		Inability of MS and others to participate in the work
2.8.3	Maintain S-49 - <i>Standardization of Mariners' Routeing Guides</i>	1.4		Revision as appropriate	NIPWG			
2.8.4	Maintain the list of standard tidal constituent	1.4		Continuous	TWCWG			
2.8.5	Maintain the inventory of national tide gauges and current meters	1.1		Continuous	TWCWG			

# WORK PROGRAMME No. 3

## INTER REGIONAL COORDINATION AND SUPPORT

### PROGRAMME 3 - “INTER REGIONAL COORDINATION AND SUPPORT”

**Concept:** This programme refers primarily to the Organization’s strategic direction “*Facilitate global coverage and use of official hydrographic data, products and services*” through enhancing and supporting cooperation on hydrographic activities among the IHO Member States (MS) under the aegis of the Regional Hydrographic Commissions (RHCs). It also contributes to the strategic direction “*Assist Member States to fulfil their roles*” through the IHO Capacity Building Work Programme in supporting MS as well as non-Member States to build national hydrographic capacities where they do not exist and to contribute to the improvement of the already established hydrographic infrastructure. The programme includes major topics that require a regionally coordinated approach, such as ENC adequacy, availability, coverage and distribution, maritime safety information and ocean mapping.

Element 3.1	Programme Coordination
Element 3.2	Regional Hydrographic Commissions and the HCA
Element 3.3	Capacity Building
Element 3.4	Coordination of Global Surveying and Charting Coverage
Element 3.5	Maritime Safety Information
Element 3.6	Ocean Mapping Programme
Element 3.7	Marine Spatial Data Infrastructures
Element 3.8	International Standards for Hydrographic Surveyors and Nautical Cartographers

**Element 3.1 Programme Coordination**

**Objective:** Promote and coordinate those activities that might benefit from a regional approach:

- establish, coordinate and enhance cooperation in hydrographic activities amongst States on a regional basis, and between regions;
- establish co-operation to enhance the delivery of the Capacity Building Work Programme;
- monitor the work of specified IHO inter-organizational bodies engaged in activities that require inter-regional cooperation and coordination.

The IRCC will foster coordination between all RHCs and other bodies that have a global/regional structure (including: HCA, GGC, CBSC, IBSC, WWNWS-SC, WEND-WG).

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
3.1.1	Organize, prepare and report annual meetings of IRCC	1.1 1.2 1.4 1.5 2.1 2.2 2.3 2.4 2.5 2.6 3.1 3.2 3.3 3,4 4.1 4.2 4.3 4.4		Monitor and approve IRCC Work Programme – Annual	IRCC Chair RHC Chairs Chairs of the IRCC Bodies Secretariat	Travel cost for 1 Dir + 1 AD Travel cost and per diem for pre-meeting briefing of Chair		Inability of MS and others to participate in meetings

3.1.2	Prepare for and represent IRCC at meetings of the Council	1.1		Submit report and recommendations - Annual	IRCC Chair Secretariat	Travel cost and per diem for IRCC Chair		
3.1.3	Prepare for and represent IRCC at 2 <sup>nd</sup> session of the IHO Assembly	1.1		Submit reports and recommendations (through the Council) - 2020	IRCC Chair Secretariat			
3.1.4	Maintain and extend IHO Resolutions (M-3) related to coordination issues	1.1		Draft proposed amendments for the consideration of the Council -2019	IRCC			

**Element 3.2 Regional Hydrographic Commissions and the HCA**

**Objective:** Facilitate regional coordination, cooperation and collaboration to improve hydrographic services and the provision of hydro-cartographic products through the structure of the Regional Hydrographic Commissions and of the Hydrographic Commission on Antarctica.

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
3.2.1	Prepare for and report meetings of the Regional Hydrographic Commissions (RHC): ARHC – Arctic Regional Hydrographic Commission BSHC - Baltic Sea Hydrographic Commission EAHC - East Asia Hydrographic Commission EAtHC - Eastern Atlantic Hydrographic Commission MACHC - Meso American and Caribbean Hydrographic Commission MBSHC - Mediterranean and Black Seas Hydrographic Commission NHC - Nordic Hydrographic Commission NIOHC - North Indian Ocean Hydrographic Commission NSHC - North Sea Hydrographic Commission RSAHC - ROPME Sea Area	2.1 2.2 2.3 2.5 2.6 3.2 3.3 4.3		Submit report and recommendations – normally Annually	RHC Chairs Secretariat	Most Commissions meet annually  Travel cost for SG or Dir to each meeting. An AD also attends several of the RHC meetings – particularly the larger Commissions and those with significant CB requirements		Inability of MS and others, particularly non-IHO MS, to participate in meetings

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
	Hydrographic Commission SAIHC - Southern Africa and Islands Hydrographic Commission SEPRHC - South East Pacific Regional Hydrographic Commission SWAtHC - South West Atlantic Hydrographic Commission SWPHC - South West Pacific Hydrographic Commission USCHC - USA and Canada Hydrographic Commission							

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
3.2.2	Organize, prepare for and report meetings of Hydrographic Commission on Antarctica (HCA)	2.1 2.2 2.5 2.6 3.2 3.3 4.3	COMNAP IAATO IALA	Submit report and recommendations - Annual A  Conduct a risk assessment for the Antarctic region and develop a work programme to improve Antarctic charting - 2018  Through IHO Secretariat to submit to ATCM the risk assessment conducted by HCA for the Antarctic Region together with a proposed HCA work programme to improve Antarctic charting, for consideration, endorsement and support from ATCM - 2019	HCA Chair Observers Secretariat	1 meeting annually  Travel cost for SG or Dir +1 AD		Inability of Members and others to participate in meetings

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
3.2.3	Contribute to improving the framework of IHO response to marine disasters	3.3		Improve the relevant guidelines for disaster risk reduction.  Continuous	RHC Chairs Secretariat			
3.2.4	Maintain and enhance the underlying database and IHO Publication C-55 – <i>Status of Hydrographic Surveying and Nautical Charting Worldwide</i>	4.4		Develop a new framework for the input, presentation and assessment of the survey and nautical cartography status in C-55	Secretariat	20K€ annually		



### Element 3.3 Capacity Building

**Objective:** Assess the hydrographic surveying, nautical charting and nautical information status of nations and regions where hydrography is developing.

Provide guidelines for the development of local hydrographic capabilities taking into account the regional context and possibilities of support for shared capabilities.

Identify regional requirements and study the possibilities for capacity building assistance and training from the CB Fund and other sources.

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
3.3.1	Organize, prepare and report annual meetings of the Capacity Building Sub-Committee (CBSC)	2.3 2.4 3.3 3.4 4.4	IMO IALA	Monitor and approve CB Work Programme (CBWP) Annual	CBSC Chair CB Coordinators Secretariat	Travel cost for 1 Dir + 1 AD Travel cost and per diem for pre-meeting briefing of Chair		
3.3.2	Manage the IHO Capacity Building Fund	4.4			CBSC Chair Secretariat			
3.3.3	Develop and maintain a Capacity Building Management System	4.4		Support the implementation of CBWP Continuous	CBSC Chair Secretariat			
3.3.4	Review and maintain the IHO Capacity Building Strategy	4.4		Up to date CB Strategy Annually	CBSC Chair Secretariat			

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
3.3.5	<p>Develop, monitor and update the Capacity Building Work Programme (CBWP)</p> <p>including:</p> <p>Reviewing and updating CB procedures</p> <p>Monitoring and assessing the progress and success of CB activities and initiatives</p>	4.4		<p>Develop and propose an annual CBWP to be included in the IHO WP</p> <p>Annually.</p> <p>Considered in conjunction with task 3.3.1</p>	CBSC Chair Secretariat			
3.3.6	<p>Organize, prepare and report on meetings with other organizations, funding agencies, private sector and academia</p> <p>including:</p> <p>the Joint IHO/IMO/WMO/IOC/IAEA/ALA/FIG Capacity Building Coordination meeting</p>	4.3 4.4	World Bank UNDP UNEP	<p>Investigate the new opportunities for CB activities</p> <p>Increase the CB Fund Annual</p>	Secretariat	2 meetings annually Travel cost for 1 Dir or 1 AD		

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
3.3.7	Organize, prepare and report on a Capacity Building Stakeholders' Forum	4.4	IMO IALA IOC WMO FIG	Obtain lessons learned from CB training activities Review the future of the IHO CB Work Programme and CB Strategy  2019	Secretariat	1 meeting 2019 No significant cost expected		
3.3.8	Maintain IHO publication M-2 - <i>National Maritime Policies and Hydrographic Services</i>	3.1 3.2		Continuous	Secretariat			
3.3.9	Plan, administer and implement Capacity Building activities, including: Technical and advisory visits, Technical Workshops, Seminars, Short and long courses On the Job Training (ashore / on board)	2.3 2.4 3.3 3.4 4.4		Assess the status of hydrography, cartography and aids to navigation in developing States  Provide the basic technical knowledge and to jointly explore initiatives to achieve a minimum level of response to national, regional and international obligations	CBSC Chair RHC Chairs Secretariat	In accordance with annual CBWP Funded by the CB Fund.		

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
3.3.10	Investigate and Develop Regional Hydrographic /Maritime Projects		IMO IALA IOC UN Agencies Funding Institutions	Ensure awareness of multilateral or bilateral projects with hydrographic and/or cartographic components, and to provide advice to governments, project managers and funding agencies  Develop and support the Outline/Scope Studies on Regional Projects  Continuous	CBSC Chair RHC Chairs Secretariat			

### Element 3.4 Coordination of Global Surveying and Charting Coverage

**Objective:** Facilitate the achievement of a world-wide quality nautical charting coverage to suit the needs of the mariner in support of safe and efficient navigation through the development of specifications and standards for the production, distribution and updating of cartographic products and supporting publications.

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
3.4.1	Organize, prepare and report annual meetings of the WEND Working Group	2.1 2.2 2.6	CIRM CNITA RENC management	Foster the implementation of the WEND principles, monitor progress and report to IRCC  Annually	WEND WG Chair Secretariat	1 meeting annually.  Travel cost for 1 Dir+AD or 1 AD		
3.4.2	Maintain liaison with RENCs	2.1 2.2 2.6	RENC management RENC MS	Facilitate the promotion of RENC co-operation for the benefit of ENC end-users  Annual	WEND WG Chair Secretariat	2 meetings annually.  Travel cost for 1 Dir or 1 AD		

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
3.4.3	Maintain and coordinate ENC and INT schemes, including coverage, consistency, quality and availability	2.1		<p>Develop ENC schemes in the regions and coordinate the production and maintenance of ENC</p> <p>Maintain INT Chart schemes and coordinate the production of INT Chart in the regions, in line with ENC production</p> <p>Continuous</p>	RHC Chairs Secretariat			<p>Lack of appropriate surveys or re-surveys in areas where there is no satisfactory coverage.</p> <p>Overlapping data in the same area.</p>

**Element 3.5 Maritime Safety Information**

**Objective:** Facilitate the efficient provision of Maritime safety Information (MSI) to mariners through coordination and the establishment of relevant standards between agencies.

Improve the coordination of NAVAREAs in liaison with the RHCs and relevant international organizations.

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
3.5.1	Organize, prepare and report annual meetings of the World-Wide Navigational Warning Service Sub-Committee (WWNWS-SC)	1.2 2.1 4.3	IMO IALA IMSO	Monitor and guide the IHO/IMO World-Wide Navigational Warning Service including NAVAREA and coastal warnings Annual	WWNWS-SC Chair Secretariat	1 meeting annually Travel cost for 1 AD		
3.5.2	Conduct annual meetings of the WWNWS-SC Document Review Working Group	1.2 2.1	IMO IALA IMSO WMO	Maintain the IMO/WWNWS documents Annual	WWNWS-SC Chair Secretariat	1 meeting annually Per diem for 1 AD		

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
3.5.3	Maintain and extend the following IHO standards, specifications and publications: <ul style="list-style-type: none"> <li>relevant IHO Resolutions in M-3 - <i>Resolutions of the IHO</i>,</li> <li>S-53 - <i>Joint IMO/IHO/WMO Manual on Maritime Safety Information</i></li> </ul>	1.2 2.1 3.3	IMO IMSO WMO	Provide update to WWNWS documentation.  Continuous	WWNWS-SC Chair  Secretariat			
3.5.4	Liaise with IMO and WMO on the delivery of MSI within the GMDSS	1.2 2.1 3.3	IMO WMO IMSO IALA	Ensure maintenance of service delivery. Continuous	WWNWS-SC Chair  Secretariat	1 meeting, 2 days per year within Europe (London/Genève/Monaco)		Lack of engagement of national MSI Coordinators with the relevant NAVAREA Coordinator
3.5.5	Participate and contribute to the IMO work items on the modernization of the GMDSS and the development of the e-navigation implementation plan	1.2 2.1 2.5	IMO WMO IMSO IALA	Monitor projects to ensure maintenance of service delivery at least at current levels, investigation areas for improvement Continuous	WWNWS-SC Chair  Secretariat			



Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
3.5.6	Improve the delivery and exploitation of MSI to global shipping by taking full advantage of technological developments	1.2 2.1 2.5	IMO WMO IMSO IALA	Progress development of S-124 PS to align with the development of e-navigation and GMDSS modernization (see element 2.5).  Continuous	WWNWS-SC Chair Secretariat			

### Element 3.6 Ocean Mapping Programme

**Objective:** Contribute to global ocean mapping programmes through the IHO/IOC General Bathymetric Chart of the Oceans (GEBCO) Project, the International Bathymetric Chart (IBC) Projects and other related international initiatives.

Improve the availability of shallow water bathymetry for purposes other than nautical charting.

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
3.6.1	Organize, prepare and report annual meetings of the GEBCO Guiding Committee (GGC) and associated bodies including TSCOM, SCRUM, GEBCO Science Day and SCUFN	1.5 2.6 3.4	IOC	<p>Implementation of the GGC Work Programme</p> <p>Contribute to global ocean mapping programmes</p> <p>Improve the availability of shallow water bathymetry</p> <p>Implement the strategic goals for the next decade. Annual</p>	GGC Chair Secretariat	<p>4 meetings annually</p> <p>Travel cost for 1 Dir + 2 AD</p> <p>Travel cost for 1 AD (for SCUFN)</p>	Travel cost, per diem. and working hours for MS and other representatives to prepare for and attend the meetings	
3.6.2	Ensure effective operation of the IHO Data Centre for Digital Bathymetry (DCDB)	1.5 2.6		<p>Enhance the DCDB for upload, ingest, discovery and download of bathymetric data and associated information, such as the gazetteer of undersea feature names</p> <p>Continuous</p>	Director, DCDB CSBWG Chair GEBCO GC Secretariat	30k€ annually to support maintenance and development	Operation of the DCDB is funded primarily by US (NOAA)	

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
3.6.3	Encourage the contribution of bathymetric data to the IHO DCDB	1.5 2.2 2.6	Academia and Industry	GEBCO representatives participate in RHC meetings Continuous	GGC Chair RHC Chairs Secretariat			Lack of MS willingness to provide data
3.6.4	Develop general guidelines on the use and collection of Crowd Sourced Bathymetry (CSB)	2.6		New IHO publication on CSB 2018	CSBWG Chair Director, DCDB Secretariat	1 meeting annually. Travel cost for 1 AD	Travel cost, per diem. and working hours for MS and other representatives to prepare for and attend the meetings of the CSBWG	
3.6.5	Support cooperative bathymetric data gathering programmes, including; the Atlantic Ocean Research Alliance (AORA)	2.6		Contribute to global and regional ocean mapping programmes Annual	CSBWG Chair Secretariat	2 meetings annually 1 AD	Funded by EU	

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
3.6.6	<p>Maintain IHO bathymetric publications, including:</p> <p>B-4 - <i>Information Concerning Recent Bathymetric Data</i></p> <p>B-6 - <i>Standardization of Undersea Feature Names</i></p> <p>B-8 - <i>Gazetteer of Geographical Names of Undersea Features</i></p> <p>B-9 - <i>GEBCO Digital Atlas</i></p> <p>B-10 - <i>The History of GEBCO</i></p> <p>B-11 - <i>IHO-IOC GEBCO Cook Book</i></p> <p>(request by GGC for B-7 - <i>GEBCO Guidelines</i> to be withdrawn is expected in 2017)</p>	2.6	IOC	Maintain publications updated	GGC Chair Secretariat			
3.6.7	Contribute to outreach and education about ocean mapping. Increase understanding of the importance of hydrography and interest in following ocean mapping as a career	1.5 2.6 3.4	IOC	<p>Development of Roadmap for Outreach and Education Working Group.</p> <p>Development of Education Materials.</p> <p>Printing of GEBCO World Map in MS</p> <p>Continuous</p>	GGC Chair Secretariat		GEBCO Fund - 8,500 Euros	

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
3.6.8	Maintain GEBCO Web site	1.5 2.6 3.4	BODC	Content of GEBCO web site continually updated with news items; information about meetings and events and information about and links to new products  Continuous	GGC Chair Secretariat		GEBCO Fund - 5000 Euros annually	
3.6.9	Develop short course and course material on compiling digital bathymetric models (DBMs) to be included in GEBCO from a heterogeneous bathymetric source database	1.5 2.6 3.4		Course curriculum and schedule for first course occasion.  2018	GGC Chair Secretariat			GEBCO Fund
3.6.10	Update and enhance the GEBCO Gazetteer (B-8) for internet access	1.5		Continuing enhancement and maintenance to incorporate new names from each SCUFN meeting  Annual	GGC Chair Director, DCDB Secretariat		Contract support funded by GEBCO Fund - 15,000 Euros	

**Element 3.7 Marine Spatial Data Infrastructures**

**Objective:** Monitor developments related to the hydrographic component of Spatial Data Infrastructures, to develop and maintain the relevant IHO publications, and to provide technical advice as appropriate.

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
3.7.1	Organize, prepare and report annual meetings of the Marine Spatial Data Infrastructures Working Group (MSDIWG)	2.5	OGC SPC	Continuous	MSDIWG Chair Secretariat	1 meeting annually. Travel cost for 1 AD	Travel cost, per diem. and working hours for MS and other representatives to prepare for and attend the meeting	
3.7.2	Maintain the relevant IHO standards, specifications and publications on MSDI, including C-17	2.5		Revised version of IHO publication C-17 2018	MSDIWG Chair Secretariat			
3.7.3	Develop training syllabi for MSDI and associated learning subjects	2,5		Course materiel for standardised MSDI training course 2018	MSDIWG Chair Secretariat			

**Element 3.8 International Standards for Hydrographic Surveyors and Nautical Cartographers**
**Objective:** Establish minimum standards of competence for hydrographic surveyors and nautical cartographers.

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
3.8.1	Organize, prepare and report annual meetings of the International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers (IBSC)	1.1 1.4	FIG ICA	Recognition of new submissions Continuous	IBSC Chair Secretariat	1 meeting annually. Travel cost for 1 AD	Travel cost, per diem. and working hours for Members and other representatives to prepare for and attend the meeting	Availability of Board members to undertake an increasing intersessional workload Capacity of Secretariat to provide full support to the Board
3.8.2	Fulfil the functions of the IBSC	1.4	FIG ICA	Continuous	IBSC Chair Secretariat			Availability of Board members to undertake an increasing intersessional workload Capacity of Secretariat to provide full support to the Board

Task	Description	SD	Notable stakeholder(s) outside the IHO	Notable deliverables / milestones and timing	Lead authority / Participants	Notable specific resources from the IHO budget	Other resources	Significant risk to delivery
3.8.3	Manage the IBSC Fund	4.4	FIG ICA	Management of the IBSC Fund effectively and report to the IHO Secretariat  Continuous	IBSC Chair Secretariat			
3.8.4	Review the IBSC standards and maintain IBSC Publications, including: <i>C-6 - Reference Texts for Training in Hydrography</i> <i>C-47 - Training Courses in Hydrography and Nautical Cartography</i> <i>S-5A and B - Standards of Competence for Hydrographic Surveyors</i> <i>S-8A and B - Standards of Competence for Nautical Cartographers</i>	1.4	FIG ICA	Monitor, control and update of the IBSC Standards in S-5 and S-8  Provide guidance to training institutions  Annually	IBSC Chair Secretariat	Support to IBSC on review and update of Standards of Competence  1 meeting 20k€ over 3 years		Availability of Board members to undertake an increasing intersessional workload  Capacity of Secretariat to provide full support to the Board



# ANNEX A

## *Strategic Risk analysis – January 2017*

### 1. INTRODUCTION

This assessment follows the risk analysis framework described in the IHO Strategic Plan adopted by the IH Conference in 2009. It is based on a limited update review conducted by the Secretariat of the analysis provided in Annex A to the Strategic Plan. The HSSC provided input that confirmed the relevant risk assessment scores used in the 2009 risk analysis.

### 2. RISK MANAGEMENT PROCESS

#### 2.1 Context

The IHO's risk environment is determined by considering the trends and developments identified as relevant to the IHO's strategic objectives.

The Strategic Assumptions described in Chapter 3 of the Strategic Plan have been identified as "strengths" (S), "weaknesses" (W), "opportunities" (O), or "threats" (T).

These Strategic Assumptions introduce possible risks to the achievement of the associated Strategic Directions set out in Chapter 4 that are intended to fulfil the IHO's objectives and ultimately its mission. They have been used as the logical starting point for risk identification.

#### 2.2 Risk Identification

Possible risks have been identified for each individual SD. These risks have been categorized as either (1) *internal*, - originating from within the IHO community, or (2) *external*. The relevant Strategic Assumptions are indicated.

#### **SD1 Strengthen the role and effectiveness of the IHO**

##### *Internal Risks*

Description	Strategic Assumptions
lack of means (capacity/competence/budget)	1.2, 2.3
lack of consensus "how"	5.2, 5.3
deficiencies in existing standards	4.1

##### *External Risks*

Description	Strategic Assumptions
technological developments too fast to cope	4.1
national developments (political/legal) hamper cooperation	5.2

**SD2 Facilitate global coverage and use of official hydrographic data, products and services,***Internal Risks*

Description	Strategic Assumptions
Member State (MS) not able to comply	2.3, 3.3
MS not aware of the level of importance to comply	1.2
lack of consensus "how"	5.2, 5.3, 3.1
deficiencies in existing standards	4.1

*External Risks*

Description	Strategic Assumptions
lack of means (capacity/competence/budget)	3.3
technological developments too fast to cope	4.1
national developments (political/legal) hamper cooperation	5.2

**SD3 Raise global awareness of the importance of hydrography***Internal Risk*

Description	Strategic Assumptions
lack of means (capacity/competence/budget)	1.2, 2.3

*External Risk*

Description	Strategic Assumptions
lack of knowledge/competence/interest	2.3

**SD4 Assist Member States to fulfil their roles***Internal Risk*

Description	Strategic Assumptions
lack of means (capacity/competence/budget)	1.2, 2.3

*External risk*

Description	Strategic Assumptions
national developments (political/legal) hamper cooperation	5.2

**2.3 Risk Assessment**

The risks identified above can be scored in relation to their potential severity of impact and their probability of occurrence according to the formula for risk quantification:

**Rate of occurrence (or probability) multiplied by the numerical indicator of the impact of the event equals risk.**

Based on the five-category approach described in the IHO Risk management framework set out in Annex A to the Strategic Plan, where:

Probability of occurrence within the time frame of the work programme:

- 5 – extreme
- 4 – high
- 3 – medium
- 2 – low

- 1 – negligible  
 Impact of the event on the IHO:  
 5 – extreme – threatens survival of the IHO  
 4 – high - threatens credibility of the IHO  
 3 – moderate –threatens present structure of the IHO  
 2 – low – shift of focus/means  
 1 – negligible – solved within existing process/structure of the IHO  
 0 – absent – nil impact

The risks identified above have been assessed as follows:

<b>Internal Risks</b>	Probability (1 to 5)	Impact (1 to 5)	<b>Resultant risk score (P x I)</b>
lack of means (capacity/competence/budget)	4	4	<b>16</b>
lack of consensus "how"	3	4	<b>12</b>
Member State (MS) not willing/not able to comply	4	5	<b>20</b>
MS not aware of the level of importance to comply	3	4	<b>12</b>
deficiencies in existing standards	4	4	<b>16</b>

<b>External Risks</b>	Probability (1 to 5)	Impact (1 to 5)	<b>Resultant risk score (P x I)</b>
technological developments too fast to cope	3	4	<b>12</b>
national developments hamper cooperation	3	2	<b>6</b>
lack of means (capacity/competence/budget)	4	4	<b>16</b>
lack of knowledge/competence/interest	4	3	<b>12</b>

Using the aggregate risk score for all the risks associated with each SD provides the following risk priority for the SD's:

<b>Ranking</b>	<b>SD</b>	<b>Description</b>	<b>Sum of risk scores</b>
1	SD2	Facilitate global coverage and use of official hydrographic data, products and services	<b>94</b>
2	SD1	Strengthen the role and effectiveness of the IHO	<b>62</b>
3	SD3	Raise global awareness of the importance of hydrography	<b>28</b>
4	SD4	Assist Member States to fulfil their roles	<b>22</b>

From this assessment it is clear that there are significant risks associated with achieving SD2, with the other SD's attracting progressively less risk.

## 2.4 Risk Treatment

As *internal* risks are within the direct control of the IHO it makes sense to initially identify the three most relevant **risks** at a strategic level, i.e. those which threaten the accomplishment of SD's and ultimately the mission, and decide on an effective treatment.

(1) <b>SD2:</b>	Member State (MS) not able to comply (2.3, 3.3)	4	5	20
	lack of consensus "how" (5.2, 5.3, 3.1)	3	4	12
(2) <b>SD1&amp;4:</b>	lack of means (capacity/competence/budget) (1.2, 2.3)	4	4	16

When a MS is not able to meet **SD2**, the IHO has mechanisms in place (such as, capacity building programmes through RHCs in the Work Programme, or support by individual HOs through bilateral arrangement) to support the affected HO, and so reduce the risk. At the same time, resolution of the situation may also be linked to both **SD1&4**. If there is a lack of means (capacity, competence, funding) to implement the existing mechanisms to support the involved HO then it is unlikely that **SD2** can be achieved effectively.

To mitigate the risk of MS not being able to fulfil **SD2**; the IHO (Secretary General in conjunction with IRCC, CBSC and the RHC Chairs) should identify:

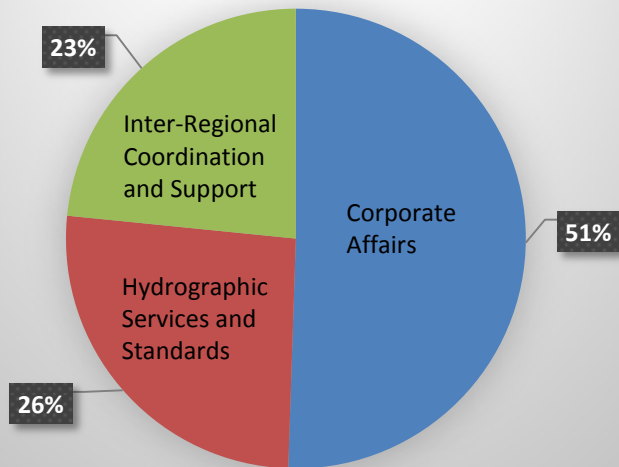
- the HOs most affected (lack of capacity; competence)
- a realistic estimate of the remedial action required (identifying shortcomings), and
- how a supporting HO or the CB Programme can assist.

An escalation mechanism should be considered, when appropriate; such as an affected MS being approached via the IMO or directly through diplomatic channels to identify its shortcomings and highlight its responsibilities and the national benefits and value of seeking improvements to the situation.

## ANNEX B

### *Financial resources allocated to each Programme*

**Salary**



**Cost of Travel**

