**PROPOSED IHO THREE-YEAR WORK PROGRAMME**

**2021-2023**

**Submission for endorsement at the 3rd meeting of the Council prior to approval of the 2nd Session of the IHO Assembly**

**Introduction**

This proposed Work Programme, which also takes into account the proposed revised IHO Strategic Plan and the risk analysis shown in Appendix A, should be considered alongside the proposed Budget for 2021-2023; which is submitted separately for consideration of the Assembly.

Appendix A provides an updated risk analysis that is based on the methodology described in the current IHO Strategic Plan that was adopted in 2017.

**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 the above 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 consideration.

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.

In consideration of the ongoing task of revision of the IHO Strategic Plan, currently undertaken by the Strategic Plan Review Working Group (SPRWG), additional references to the draft version of the proposed revised IHO Strategic Plan (Reference C refers) are added in a separate column (SD REV) of the proposed Work Programme.

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**Concept:**

**WORK PROGRAMME 1**

**CORPORATE AFFAIRS**

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 Cooperation 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

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**Element 1.1 Co-operation 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:

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| **Task** | **Description** | **SD** | **SD REV** | **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 | 3 | Mariners, Ship operators, Marine scientific community | continuous | Secretariat | 1 meeting annually  Travel cost for  SG or Dir |  |  |

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| 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 | 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 | 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 | 3 |  | continuous | Secretariat GEBCO GC MSDIWG | 1 meeting annually.  Travel cost for  1 SG/Dir/AD |  |  |

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| 1.1.6 | Maintain relationship with the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA )  including the IALA e-NAV Committee and IALA World Wide Academy | 1.1  1.2  1.3  1.4  1.5  3.1  3.2  3.3  4.4 | 3 | Aids to Navigation authorities, e- Navigation data service providers, maritime community | continuous | Secretariat  HSSC WGs  CBSC | 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 | 1.1 | 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 | 1.1 | Mariners, Ship Operators  Maritime  Administrations | continuous | Secretariat | 5 meetings annually,  Travel cost for each meeting for 1 SG/Dir + AD or 1 AD. |  |  |

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| 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 | 3.2 | 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 | 1.1  1.2 |  | 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 | 1.1 |  | annual | Secretariat | 1 meeting annually if coinciding with other  meetings. No significant additional cost |  |  |

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| 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) and its Working Group on Marine Geospatial Information (WGMGI)  the UN Division on Ocean  Affairs and Law of the  Sea (UN-DOALOS)  the UN Group of Experts on Geographical Names (UNGEGN) | 1.1  1.2  1.3  1.4  1.5  2.5  2.6  3.1  3.2  3.3 | 2.3 | Marine geospatial data providers  and users | continuous  Standardization in toponymic matters | Secretariat MSDIWG ABLOS | 3 meetings annually.  Travel cost for  1 SG/Dir  Travel cost for  1 AD (on case-by-case basis) |  |  |
| 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 | 3 | Mariners, Ship operators, Maritime Administrations | continuous | Secretariat | 1 meeting annually.  Travel cost for  1 SG/Dir/AD |  |  |
| 1.1.14 | Maintain relationship with the Open Geospatial Consortium, including the Marine Domain Working Group (Marine DWG) | 1.1  1.2  1.3  1.4  1.5  2.5  3.1  3.2  3.3 | 1.1  2.3 | Mariners  Oil and Gas industry  UN-GGIM  UN-WGMGI | continuous | Secretariat  MSDIWG | 1 meeting annually if coinciding with other meetings. No significant additional cost |  |  |

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| 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 | 3.2 | 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 | 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 |  |  |

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**Element 1.2 Information Management**

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

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| 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 | 3.3 |  | 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 | 3.3 |  | 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 | 80k€ annually (includes hardware, software and contract maintenance support) |  |  |

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| 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 |  |  |
| 1.2.5 | Implement and maintain online forms for the input from Member States to the IHO databases and in response to circular letters | 2.1  3.4  4.1  4.2 |  |  | continuous | Secretariat | 1K€ annually |  |  |

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**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.

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| 1.3.1 | Promote the IHO through publicity and public relations initiatives | 1.5  2.6  3.1  3.2  3.3 | 3.3 |  | Continuous  Preparation of the centenary of the establishment of the IHB in 2021 | Secretariat  Member States | 10k€ annually |  |  |
| 1.3.2 | Encourage new membership of the IHO | 2.3  2.4 | 3 |  | 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) |  |  |

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| 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 | 3.3 |  | annual | Secretariat  Member States | 10K€ annually |  |  |
| 1.3.4 | Compile and publish P-1 – *International Hydrographic Review* with the assistance of a paid editor | 1.5  2.6  3.1  3.2  3.3 | 3.3 |  | continuous | Secretariat  Member States | 10K€ annually |  | Lack of suitable papers provided by MS and other contributors |
| 1.3.4 | Maintain a digital repository for the overall collection of P-1 available for worldwide access | 1.5  2.6  3.1  3.2  3.3 | 3.3 |  | continuous | Secretariat  Member States | 1K€ annually |  |  |

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**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.

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| 1.4.1 | Execute the IHO Work Programme and Budget approved by the 2nd Session of the Assembly, monitoring its progress and proposing or implementing any necessary adjustments according to the circumstances and the regulations | All  SDs | All  Goals |  | continuous | Secretariat  Council |  |  |  |
| 1.4.2 | Develop and propose future IHO Work Programme, Budget and Strategic Plan |  | All  Goals |  | continuous | Secretariat Council Assembly |  |  |  |

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| **Task** | **Description** | **SD** | **SD REV** | **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 | 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 | 2.2  3.1 |  | 2022 | 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 |  |

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**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.

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| 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 | 3.3 |  | 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 |

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| **Task** | **Description** | **SD** | **SD REV** | **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** |
| 1.5.4 | 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 | 10k€ 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 |  |  |

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| 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 | 62K€ 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.

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| 1.6.1 | Prepare and conduct the 3rd  session of the IHO Assembly | 2.1  2.2  4.1  4.4 |  |  |  | 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 | 15K€ 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 |  |

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**Concept:**

**WORK PROGRAMME 2**

**HYDROGRAPHIC SERVICES AND STANDARDS**

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

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**Element 2.1 Programme Coordination**

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

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| 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 | 1.1  1.2 |  | 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 | 1.1  1.2 |  | 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 |  |  |

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| 2.1.4 | Prepare for and represent HSSC at 3rd session of the IHO Assembly | 1.1 |  |  | Submit reports and recommendations (through the Council) | HSSC Chair  Secretariat |  |  |  |
| 2.1.5 | Monitor the development of related international standards, specifications and guidance | 1.2 | 1.1 | 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 | 1.1  1.2 |  | 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 | Maintain and extend IHO Resolutions (M-3) related to technical issues | 1.1 | 1.2 |  | Draft proposed amendments for the consideration of the Council | HSSC & All WGs |  |  |  |

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**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.

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| 2.2.1 | Maintain S-4 (*Regulations for International (INT) Charts and Chart Specifications of the IHO*) and related publications (INT 1/2/3) | 1.4 | 1.1 |  |  | NCWG |  |  | Way forward and Maintenance of INT 1 to be decided |
| 2.2.2 | Maintain S-11 Part A - *Guidance for the Preparation and Maintenance of International Chart Schemes and Catalogue of International (INT) Charts* | 1.4 | 1.1 |  |  | NCWG |  |  |  |
| 2.2.3 | Maintain the INToGIS  infrastructure | 1.1 | 1.1 |  |  | NCWG Secretariat |  | Support of the Republic of Korea |  |
| 2.2.4 | Implement the decisions made following the report on the Future of the Nautical Paper Chart | 1.4 |  |  |  | NCWG |  |  |  |

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**Element 2.3 S-100 Framework**

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

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| **Task** | **Description** | **SD** | **SD REV** | **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 | 1.1  1.2 |  |  | S-100WG Secretariat |  | Support of the Republic of Korea |  |
| 2.3.2 | Maintain and extend S-100  - *IHO Universal*  *Hydrographic Data Model* | 1.4 | 1.1  1.2 |  |  | S-100WG |  |  | Inability of MS and others to participate in the work |
| 2.3.3 | Develop and maintain S-99  - *Operational Procedures for the Organization and Management of the S-100*  *Geospatial Information*  *Registry* | 1.4 | 1.1  1.2 |  |  | S-100WG |  |  |  |

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| **Task** | **Description** | **SD** | **SD REV** | **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 and engage on S-100 Implementation Strategy | 1.4 | 1.1  1.2 | ECDIS OEM GIS Community Data providers |  | 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 | 1.1  1.2 |  |  | S-100WG Secretariat | 2 meetings per year  Travel cost 1 AD | Travel cost and working hours MS Rep. | Limited expertise available |

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**Element 2.4 S-57 Framework**

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

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| **Task** | **Description** | **SD** | **SD REV** | **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** |
| 2.4.1 | Maintain S-52 - *Specifications for Chart Content and Display Aspects of ECDIS* | 1.4 | 1.1 | ECDIS OEM |  | ENCWG |  |  |  |
| 2.4.2 | Maintain S-57 - *IHO Transfer Standard for Digital Hydrographic Data*,  including ENC Product  Specification | 1.4 | 1.1 | ECDIS OEM Data servers |  | ENCWG |  |  | Inability of MS and others to participate in the work |
| 2.4.3 | Maintain S-58 - *ENC Validation Checks* | 1.4 | 1.2 | RENCs |  | ENCWG |  |  | Inability of MS and others to participate in the work |
| 2.4.4 | Maintain S-61 - *Product Specification for Raster Navigational Charts (RNC)* | 1.4 | 1.1 | ECDIS OEM Data servers | No action expected | ENCWG |  |  |  |
| 2.4.5 | Maintain S-63 - *IHO Data*  *Protection Scheme* | 1.4 | 1.2 |  |  | ENCWG |  |  | Inability of MS and others to participate in the work |

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| **Task** | **Description** | **SD** | **SD REV** | **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** |
| 2.4.6 | Maintain S-64 - *IHO Test*  *Data Sets for ECDIS* | 1.4 | 1.2 |  |  | ENCWG |  |  |  |
| 2.4.7 | Maintain S-65 - *ENCs: Production, Maintenance and Distribution Guidance* | 1.4 | 1.1 |  |  | ENCWG |  |  |  |
| 2.4.8 | Maintain S-66 - *Facts about Electronic Charts and Carriage Requirements* | 1.4 | 1.1 |  |  | ENCWG |  |  |  |

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**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.

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| **Task** | **Description** | **SD** | **SD REV** | **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 | 1.2 |  | Implementation of S-100 Security Scheme | Secretariat |  |  | Inability of MS and others to participate in the work |
| 2.5.2 | Support the development and implementation of Maritime Services in relation to e-Navigation | 1.1  2.5 | 1.1 | IALA IMO | Maintenance of Maritime Service descriptions | NIPWG NCWG  ENCWG  TWCWG WWNWS-SC |  |  | Inability of MS and others to participate in the work |

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**Element 2.6 Hydrographic Surveying**

**Objective:** Maintain S-44 and related IHO documents fit for purpose.

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| **Task** | **Description** | **SD** | **SD REV** | **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 *- IHO Standards for Hydrographic Surveys* | 1.4 | 2.2 |  |  | HS PT / HSWG (to be confirmed) |  |  |  |

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**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.

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| **Task** | **Description** | **SD** | **SD REV** | **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 | 3 |  | ABLOS Conferences |  |  | Self-funding | Lack of participation or insufficient volunteers to present papers |
| 2.7.2 | Maintain C-51 - *Manual on Technical Aspects of the UN Convention on the Law of the Sea* | 1.4 | 3 |  |  |  |  |  |  |

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**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.

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| **Task** | **Description** | **SD** | **SD REV** | **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 - *Standardization of List of Lights and Fog Signals* | 1.4 | 1.2 |  | Revision as appropriate  No action expected | NIPWG |  |  |  |
| 2.8.2 | Maintain S-32-  *Hydrographic Dictionary* | 1.4 | 1.2 |  | Database version to be expanded with multiple languages | HDWG  Secretariat |  |  | Inability of MS and others to participate in the work |
| 2.8.3 | Maintain S-49 - *Standardization of Mariners' Routeing Guides* | 1.4 | 1.2 |  | Revision as appropriate | NIPWG |  |  |  |
| 2.8.4 | Maintain the list of standard tidal constituent | 1.4 | 2.2 |  | Continuous | TWCWG |  |  |  |
| 2.8.5 | Maintain the inventory of national tide gauges and current meters | 1.1 | 2.2 |  | Continuous | TWCWG |  |  |  |
| 2.8.6 | Ensure that data quality aspects are addressed in an appropriate and  harmonized way for all relevant standards | 1.4 | 1.2 |  | Continuous | DQWG |  |  |  |

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**WORK PROGRAMME No. 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

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**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 cooperation 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).

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| **Task** | **Description** | **SD** | **SD REV** | **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 | 3 |  | 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 |
| **Task** | **Description** | **SD** | **SD REV** | **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** |
| 3.1.2 | 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 3rd session of the IHO Assembly | 1.1 |  |  | Submit reports and recommendations (through the Council) | IRCC Chair  Secretariat |  |  |  |
| 3.1.4 | Maintain and extend IHO Resolutions (M-3) related to coordination issues | 1.1 | 3.1  3.2 |  | Draft proposed amendments for the consideration of the Council | IRCC |  |  |  |

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**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.

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| **Task** | **Description** | **SD** | **SD REV** | **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 | 2.1  2,2  2.3  2.5  2.6  3.2  3.3  4.3 | 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 |

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| **Task** | **Description** | **SD** | **SD REV** | **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** |
|  | RSAHC - ROPME Sea Area  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 |  |  |  |  |  |  |  |  |

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| **Task** | **Description** | **SD** | **SD REV** | **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 | 3.2 | COMNAP IAATO SCAR  IALA | Submit report and recommendations - | HCA Chair Observers Secretariat | 1 meeting annually  Travel cost for  SG or Dir +1 AD (on case by case basis) |  | Inability of Members and others to participate in meetings |

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| **Task** | **Description** | **SD** | **SD REV** | **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 | 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 – *Status of Hydrographic Surveying and Nautical Charting Worldwide* | 4.4 | 3.1 |  | Develop a new framework for the input, presentation and assessment of the survey and nautical  cartography status in C-55 | Secretariat |  |  |  |

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**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 possibi lities 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.

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| **Task** | **Description** | **SD** | **SD REV** | **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 | 3.1 | 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 | 3.1 |  |  | CBSC Chair  Secretariat |  |  |  |
| 3.3.3 | Develop and maintain a Capacity Building Management System | 4.4 | 3.1 |  | Support the implementation of CBWP  Continuous | CBSC Chair  Secretariat |  |  |  |
| 3.3.4 | Review and maintain the IHO Capacity Building Strategy | 4.4 | 3.1 |  | Up to date CB Strategy  Annually | CBSC Chair  Secretariat |  |  |  |

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| **Task** | **Description** | **SD** | **SD REV** | **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 | Develop, monitor and update the Capacity Building Work Programme (CBWP), including:  Reviewing and updating CB  procedures  Monitoring and assessing the progress and success of CB activities and initiatives as approved in the annual IHO CBWP | 4.4 | 3.1 |  | Develop and propose an annual CBWP to be included in the IHO WP  Annually. Considered in conjunction with task 3.3.1 | CBSC Chair  Secretariat |  |  |  |
| 3.3.6 | Organize, prepare and report on meetings with other organizations, funding agencies, private sector  and academia, including:  the Joint IHO/IMO/WMO/IOC/IAEA/I ALA/FIG/IMPA Capacity Building Coordination meeting | 4.3  4.4 | 3.1 | World Bank UNDP UNEP  Donor agencies | Investigate the new opportunities for CB activities  Increase the CB Fund Annualy | Secretariat | 2 meetings annually  Travel cost for  1 Dir or 1 AD |  | Budget constraints |

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| **Task** | **Description** | **SD** | **SD REV** | **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 and IBSC Stakeholders’ Forum | 4.4 | 3.1 | IMO  IALA  IOC  WMO  FIG  ICA  Academy | Obtain lessons learned from CB training activities Review the future  of the IHO CB Work Programme and CB Strategy  2021, as part of the Centenary Celebrations | Secretariat  CBSC Chair  IBSC Chair | No significant cost expected |  |  |
| 3.3.8 | Maintain IHO publication M-2 - *National Maritime Policies and Hydrographic Services* | 3.1  3.2 | 3.3 |  | 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 | 3.1 |  | 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. |  |  |

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| **Task** | **Description** | **SD** | **SD REV** | **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 | 2.3  2.4  3.3  3.4  4.4 | 3.1 | IMO IALA IOC  UN Agencies  World Bank  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 |  |  |  |
| 3,3,11 | Develop and maintain an online repository of training material and references | 2.3  2.4  3.3  3.4  4.4 | 3.1 | Member States and other States  RHCs  Academia | Ensure all training material and references are available | CBSC Chair  Secretariat |  |  |  |

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**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.

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| **Task** | **Description** | **SD** | **SD REV** | **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 | 1.1 | CIRM  RENC  management | Foster the implementation of the WEND /WENS (to be confirmed) principles, monitor progress and report to IRCC  Annually | WEND WG Chair  Secretariat | 1 meeting annually.  Travel cost for  1 Dir+AD or  1 AD |  | Component of the S-100 Implementation Strategy (to be confirmed) |
| 3.4.2 | Maintain liaison with RENCs | 2.1  2,2  2.6 | 1.1 | RENC  management  RENC MS | Facilitate the promotion of RENC cooperation for the benefit of ENC end- users  Annual | WEND WG Chair  Secretariat | 2 meetings annually.  Travel cost for  1 Dir or 1 AD |  |  |

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| **Task** | **Description** | **SD** | **SD REV** | **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 | 2.2 |  | Develop ENC schemes in the regions and coordinate the production and maintenance of ENC  Maintain INT Chart schemes and coordinate the production of INT Chart in the regions, in line with ENC production  Continuous | RHC Chairs  Secretariat |  |  | Lack of appropriate surveys or re-surveys in areas  where there is no satisfactory coverage.  Overlapping products in the same area. |

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**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.

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| **Task** | **Description** | **SD** | **SD REV** | **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 | 1.1 | 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 |  | Lack of engagement of NAVAREA Coordinators or partner organizations to maintain service |
| 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 |  | Lack of engagement of NAVAREA Coordinators or partner organizations to maintain service |

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| **Task** | **Description** | **SD** | **SD REV** | **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:  - relevant IHO Resolutions in M-3 - *Resolutions of the IHO*,  - S-53 - *Joint IMO/IHO/WMO Manual on Maritime Safety Information* | 1.2  2.1  3.3 | 1.2 | 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 | 1.2 | 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 |  |  | Inability of current providers to maintain service due to increased costs in a multi-system environment |

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| **Task** | **Description** | **SD** | **SD REV** | **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 | 1.1 | 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 |  |  |  |

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**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.

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| **Task** | **Description** | **SD** | **SD REV** | **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 | 3.2 | IOC | Implementation of the GGC Work Programme  Contribute to global ocean mapping programmes  Improve the availability of shallow water bathymetry  Implement the strategic goals for the next decade. Annual | GGC Chair  Secretariat | 4 meetings annually  Travel cost for 1  Dir + 2 AD  Travel cost for  1 AD (for  SCUFN) | Travel cost, per diem. and working hours for MS and other representatives to prepare for and attend the meetings | Lack of support from coastal states to progress GEBCO activities |
| 3.6.2 | Ensure effective operation of the IHO Data Centre for Digital Bathymetry (DCDB) | 1.5  2.6 | 3.2 |  | Enhance the DCDB for upload, ingest, discovery and download of bathymetric data and associated  information, such as the gazetteer of undersea feature names  Continuous | Director, DCDB CSBWG Chair GEBCO GC Secretariat | 10k€ annually to support maintenance  and development | Operation of the DCDB is funded  primarily by US (NOAA) | Inability of sole funder to continue current level of support |

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| **Task** | **Description** | **SD** | **SD REV** | **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 | 3.2 | 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 | 2.2  3.2 |  |  | 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 | 3.2 |  | Contribute to global and regional ocean mapping programmes  Annual | CSBWG Chair  Secretariat | 2 meetings annually  1 AD | Funded by EU |  |

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| **Task** | **Description** | **SD** | **SD REV** | **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 | Maintain IHO bathymetric publications, including:  B-4 - *Information Concerning*  *Recent Bathymetric Data*  B-6 - *Standardization of*  *Undersea Feature Names*  B-8 - *Gazetteer of Geographical Names of Undersea Features*  B-9 - *GEBCO Digital Atlas*  B-10 - *The History of*  *GEBCO*  B-11 - *IHO-IOC GEBCO Cook Book*  B-12 – *Guidance on Crowd source Bathymetry* | 2.6 | 3.2  3.3 | 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 | 3.2 | IOC | Development of Roadmap for Outreach and Education Working Group.  Development of  Education Materials.  Printing of GEBCO World Map in MS  Continuous | GGC Chair  Secretariat |  | GEBCO Fund -  8,200 Euros |  |

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| **Task** | **Description** | **SD** | **SD REV** | **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 Website | 1.5  2.6  3.4 | 3.2  3.3 | 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 | 3.1  3.2 |  |  | GGC Chair  Secretariat |  |  | GEBCO Fund |
| 3.6.10 | Update and enhance the GEBCO Gazetteer (B-8) for internet access | 1.5 | 3.2  3.3 |  | Continuing enhancement and maintenance to incorporate new names from each SCUFN meeting:  Annual | GGC Chair Director, DCDB Secretariat |  | Contract support funded by GEBCO Fund - 10,000  Euros |  |

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**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.

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| **Task** | **Description** | **SD** | **SD REV** | **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 | 2.1  2.3 | OGC  SPC  Academia  Industry  UN-GGIM  UN-WGMGI | 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 | 2.1  2.3 | OGC  Academia  Industry |  | MSDIWG Chair  Secretariat |  |  |  |
| 3.7.3 | Develop and maintain training syllabi and material for MSDI and associated learning subjects | 2,5 | 2.1  3.1 | OGC  Academia  Industry | Course material for standardised MSDI training course | MSDIWG Chair  Secretariat |  |  |  |
| 3.7.4 | Meeting of the OGC Marine Domain Working Group | 2,5 | 2.1  2.3 | OGC  Academia  Industry | Coordination of the relevant activities | MSDIWG Chair  Secretariat |  |  |  |

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**Element 3.8 International Standards for Hydrographic Surveyors and Nautical Cartographers**

**Objective:** Establish minimum standards of competence for hydrographic surveyors and nautical cartographers.

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| **Task** | **Description** | **SD** | **SD REV** | **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 | 2.2 | FIG  ICA  Academia  Industry | Recognition of new submissions and maintenance of guiding tools and references  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 | 2.2 | FIG ICA | Provide guidance to training institutions  Continuous | IBSC Chair  Secretariat |  |  | Availability of Board members to undertake an increasing intersessional workload  Capacity of Secretariat to provide full support to  the Board |

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| **Task** | **Description** | **SD** | **SD REV** | **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:  C-6 - *Reference Texts for*  *Training in Hydrography*  C-47 - *Training Courses in Hydrography and Nautical Cartography*  S-5A and B - *Standards of Competence for Hydrographic Surveyors*  S-8A and B - *Standards of Competence for Nautical Cartographers* | 1.4 | 2.2 | FIG  ICA  Academia  Industry | Monitor, control and update of the IBSC Standards in S-5A/B and S-8A/B and Publications  Continuous | IBSC Chair  Secretariat | Support to IBSC on review and update of Standards of Competence  10K€ annually |  | Availability of Board members to undertake an increasing intersessional workload  Capacity of Secretariat to provide full support to  the Board |

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**Appendix A**

**APPENDIX A**

***Strategic Risk analysis***

**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 (as 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 in the table below.

**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 |

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*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 as 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

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The risks identified above have been assessed as follows:

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

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

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

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

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) | **SD2**: | 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) | **SD1&4**: | 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 to provide support, aimed at reducing risks associated with the non-provision of navigational services. This support includes; the provision of capacity building programmes through RHCs in the Work Programme, or support by individual HOs through bilateral arrangement. 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