

Work Programme for 2022

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| Submitted by: | Secretary-General |
| Executive Summary: | This submission provides the proposed Work Programme for 2022 for the approval of the Council. |
| Related document: | IHO Resolution 2/2018 <i>Procedure for Considering the Annual Financial Statement and Recommendations, and the Forthcoming Budget Estimate and Work Programme</i> |

Introduction

- a. Article VI(g)(iii) of the Convention on the IHO stipulates that the Council ...coordinate during the inter-Assembly period the activities of the Organization within the framework of the strategy, work programme and financial arrangements, as decided by the Assembly.
- b. Decision 24.c of the 1st Session of the IHO Assembly... confirmed that the Council is empowered to approve the financial statements and any recommendations for the previous year and the budget estimates and the associated annual work programme for each forthcoming year.
- c. The IHO Resolution 2/2018 lays down the procedure to be observed by the Council when considering and approving the budget estimates and the associated annual work programme for each forthcoming year.
- d. The proposed Work Programme for 2022 is based on the second year of the three-year Work Programme (2021-2023) approved by the 2nd Session of the IHO Assembly (Decision A2/48 refers).

Action Required of the Council

The Council is invited to:

- **Agree and approve** the IHO Work Programme for 2022.



IHO WORK PROGRAMME FOR 2022

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 meeting

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 | G&T | 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 | Principal Director | Principal Manager |
|-------|--|-----|---|---|-----------------------------------|---|-----------------|------------------------------|--------------------|-------------------|
| 1.1.1 | Maintain relationships with the Government of Monaco and the diplomatic corps accredited in Monaco | | | Continuous | Secretariat | | | | SG | ADCS and MFA |
| 1.1.2 | Maintain relationship with the Antarctic Treaty Consultative Meeting (ATCM) | 3.2 | Mariners Ship operators Marine scientific community | continuous | Secretariat | 1 meeting Travel cost for SG + AD + ESO, 3 days In week 23 May – 2 June, Berlin together with HCA18 | | | SG | ADCS |
| 1.1.3 | Maintain relationship with the Comité International Radio Maritime (CIRM) | 1.2 | Navigation equipment manufacturers | continuous | Secretariat | 1 meeting Travel cost for 1 SG/Dir/AD | | | DTECH | ADSO |
| 1.1.4 | Maintain relationship with European Union Initiatives (such as INSPIRE and EMODnet) | 3.2 | Monitoring of impact of open data policy. Possible significant contribution to Revised Strategic Plan Main Goal 3 in the future | continuous | Secretariat IENWG | SG/Dir/AD 2 meetings Travel cost for 1 SG/Dir/AD per meeting | | | DCOOR D | ADCS |
| 1.1.5 | Maintain relationship with the Group on Earth Observation (GEO) | 2.3 | | continuous | Secretariat GEBCO GC MSDIWG | 1 meeting Travel cost for 1 SG/Dir/AD per meeting | | | DCOOR D | ADSO& ADCC |

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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: IALA World-Wide Academy (WWA) | 3.1 | Aids to Navigation authorities, e- Navigation data service providers, maritime community | continuous | Secretariat, HSSC WGs, CBSC | 2 meetings Travel cost for 1 SG/Dir/AD per meeting | | | SG & DTECH | ADDT & ADCC |
| 1.1.7 | Maintain relationship with the International Electrotechnical Commission (IEC), including: IEC Technical Committee 80 | 1.1 | Equipment manufacturers, Type approval bodies | continuous | Secretariat, HSSC WGs | 1 meeting Travel cost for 1 Dir/AD | | | DTECH | ADDT |
| 1.1.8 | Maintain relationship with the International Maritime Organization (IMO), including: | 1.1 3.1 | Mariners Ship operators Administrations | continuous | Secretariat | | | | SG | ADSO |
| 1.1.8.1 | - Assembly | | | | | London, UK 22 Nov-1 Dec | | | SG | ADSO |
| 1.1.8.2 | - Council | | | | | C 128, London, UK, July 2022 (tbc) C 129, London, UK, Nov 2022 (tbc) SG attendance only if agenda relates directly to IHO matters of interest | | | SG | ADSO |
| 1.1.8.3 | - MSC | | | Engagement with IMO for S-100 Implementation Strategy | | MSC 105, London, UK, May 2022 (tbc) | | | SG | ADSO |

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| 1.1.8.4 | - NCSR | | | Engagement with IMO for S-100 Implementation Strategy | | NCSR 9, London, UK, June 2022 (tbc) DTECH+ADSO 11 nights on site. IMO/ITU EG 18, London, UK Jul 2022 (tbc) | | | DTECH | ADSO |
| 1.1.8.5 | - TCC | | | | | TC 72, London, UK, June 2022 (tbc) DCOORD or ADCC 3 nights on site | | | DCOORD | ADCC |
| 1.1.9 | Maintain relationship with the Intergovernmental Oceanographic Commission (IOC) of UNESCO, including: | 3.2 | Marine scientific community | continuous | Secretariat, GEBCO GC, MSDIWG | | | | DCOORD | ADSO |
| 1.1.9.1 | - Assembly | | | | | DCOORD or ADSO | | | DCOORD | ADSO |
| 1.1.9.2 | - Executive Council | | | | | EC 55, Paris, France, June/July 2022 (tbc) DCOORD or ADSO 4 nights on site | | | DCOORD | ADSO |
| 1.1.9.3 | - Specialized WGs | | | | | UN Decade IOC Stakeholders Forum 2 meetings Travel cost for 1 SG/DCOORD per meeting | | | SG&DCOORD | ADSO |

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| 1.1.10 | Maintain relationship with the International Organization for Standardization (ISO), including: - ISO Technical Committee 211 | 1.1 1.2 | | continuous | Secretariat | DTECH or ADDT 6 nights on site for each meeting | | | DTECH | ADDT |
| 1.1.11 | Maintain relationship with the Joint Board of Geospatial Information Societies (JB-GIS) | 1.1 | | annual | Secretariat | 1 meeting if coinciding with other meetings. No significant additional cost | | | DCOOR D | ADs as appropriate |
| 1.1.12 | Maintain relationship with United Nations (UN) organizations based in New York, including: | 2.3 | Marine geospatial data providers and users | continuous | Secretariat ABLOS MSDIWG | | | | SG | ADs as appropriate |
| 1.1.12.1 | - the UN Committee of Experts on Global Geospatial Information Management (UN-GGIM) and WG on Marine Geospatial Information | | | | | UN-GGIM-12, UNHQ New York, SG 6 nights on site | | | SG | ADCC (both are being dealt with by the MSDIWG) |
| 1.1.12.2 | - the UN Division on Ocean Affairs and Law of the Sea (UN-DOALOS) | | | | | UNICPOLOS 22, New York, Jun (tbc) SPLOS-30, New York, Jun (tbc) A74/LOS, New York, Dec (tbc) SG or Director New York 6 nights on site per meeting | | | SG | ADSO |

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| 1.1.12.3 | - the UN (UN Expert Group on Geographical Names (UNGEGN)) | | | | | UNGEGN-3 rd Session (1 – 5 May 2023) | | | SG | ADCS (IHO represented by Trent Palmer, NGA, SCUFN Member) |
| 1.1.13 | Maintain relationship with the World Meteorological Organization (WMO) | | Mariners Ship operators Maritime Administrations | continuous | Secretariat | SG or ADSO | | | SG | ADSO |
| 1.1.14 | Maintain relationship with the International Seabed Authority (ISA) | 1.1 2.3 | Marine geospatial data providers and users | continuous | Secretariat | ISA Assembly July Jamaica, SG/Dir 4 nights on site | | | SG | ADSO |
| 1.1.15 | Maintain relationships with other international and observer organizations when their agendas have relevance to the programme of the IHO | 3.2 | | continuous | Secretariat | Participation to be determined on an annual basis, subject to the agenda of the organization and its significance to the IHO WP | | | SG or Director and AD responsible for the subject matter, as appropriate | |
| 1.1.15.1 | 21 th session of the Asia-Pacific Heads of Maritime Safety Agencies (APHoMSA) forum | | | | | Local MS to be invited to represent the IHO – otherwise no IHO representation | | | DTECH | ADCC |
| 1.1.15.2 | Conference of the Association of African Maritime Administrations Southern and East African and Islands Regional Group for Safety of Navigation and Marine Environment Protection (SEaignep) | | | | | AAMA7: (tbc) SEaignep7: (tbc) | | | DTECH | ADDT |

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| 1.1.15.3 | COMNAP (Council of Managers of National Antarctic Program) | | | | | COMNAP AGM IHO attendance only if relevant topics on the agenda and funding becomes available | | | SG | ADCS |
| 1.1.15.4 | IMSO (International Mobile Satellite Organization) Assembly | | | | | 26 th IMSO Assembly, IMO, London, UK (tbc) | | | DTECH | ADSO |
| 1.1.15.4.1 | IMSO - Advisory Committee | | | | | 47 th Session of the Advisory Committee of IMSO (tbc) 48 th Session of the Advisory Committee of IMSO (tbc) IMO, London, UK | | | DTECH | ADSO |
| 1.1.15.5 | IMPA (International Maritime Pilots' Association) | | | | | 26 th Congress of IMPA. IHO attendance only if relevant topics on the agenda and funding becomes available | | | SG | ADSO |
| 1.1.15.6 | FIG Congress 2022 | | | | | Dir or AD 14-20 May Cape Town. SA | | | DCOOR D | ADCC |
| 1.1.15.7 | US/Canada Hydrographic Conference 2022 Ottawa (September 2022 tbc) | | | | | In conjunction with USCHC | | | SG | Relevant AD |

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| 1.1.15.8 | International Cartographic Conference and General Assembly | | | | | IHO attendance only if relevant topics on the agenda and funding becomes available | | | DTECH | ADCC |
| 1.1.15.9 | Meeting of the Working Group on Marine Cartography of the International Cartographic Association (ICA) | | | | | IHO attendance only if relevant topics on the agenda and funding becomes available | | | DTECH | ADCS |
| 1.1.15.10 | Meeting of the Commission on SDI and Standards of the International Cartographic Association (ICA) | | | | | IHO attendance only if relevant topics on the agenda and funding becomes available | | | DTECH | ADCC |

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 and the Digital Document Archive | 3.3 | | continuous | Secretariat | 30k€ for commercial contract support | | | SG | ADDT |
| 1.2.2 | Maintain and extend the IHO GIS, webservice and web mapping services in support of RHCs, ENC production coordination, INT chart coordination, C-55 and other related activities | 3.3 | | continuous | Secretariat | Use of commercial contract support Maintenance included in 1.2.3 | | | SG | ADDT and other AD and / or Project Officers as appropriate |
| 1.2.3 | Maintain and extend the Secretariat Admin IT infrastructure, including in-house publishing facilities | 3.3 | | continuous | Secretariat | 80k€ annually (includes hardware, software and contract maintenance support) | | | SG | ADDT |
| 1.2.4 | Maintain the IHO reference library collection including the incorporation of new material | | | continuous | Secretariat | 1K€ annually | | | SG | MFA |
| 1.2.5 | Implement and maintain online forms for the input from Member States to the IHO databases and in response to circular letters | | | continuous | Secretariat | 1K€ annually | | | DTECH | ADCC |

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 | 3.3 | | | Secretariat, Member States | | | | SG | MFA/PCRO |
| 1.3.2 | Encourage new membership of the IHO | | | 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). 2 nights on site per visit | | | SG and Directors | All ADs |
| 1.3.2.1 | Undertake high-level visits to Governments of non-MS | | | | | SG or Director At least 2 visits, 2 nights on site for each visit | | | SG and Directors | All ADs |
| 1.3.3 | Celebrate World Hydrography Day including the preparation of information to support the themes | 3.3 | | annual | Secretariat, Member States | | | | SG | ADCC/PCRO |
| 1.3.4 | Compile and publish P-1 – <i>International Hydrographic Review</i> with the assistance of a paid editor | 3.3 | | continuous | Secretariat, Member States | 10k€ for contract support | | Lack of suitable papers provided by MS and other contributors | DCOORD | ADCC |
| 1.3.4.1 | Maintain IHR website and digital repository for the overall collection of P-1 available for worldwide access | | | continuous | Secretariat | 2 K€ annually | | | DCOORD | ADCC |
| 1.3.5 | Develop IHO Corporate Communication Plan, Social Networks, Newsfeed, Media Release | 3.3 | | Maintain the frequency and level of blogs and feeds on LinkedIn and Facebook | Secretariat | | | | SG / DTECH / DCOORD | PCRO |

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 Goals &Targets | | continuous | Secretariat Council | | | | SG | MFA |
| 1.4.2 | Develop and propose future IHO Work Programme, Budget and Strategic Plan | All Goals &Targets | | Continuous Prepare proposed 2023 Work Programme + 3-year Programme and Budget 2024-2026 for C-6 and A-3 in liaison with HSSC and IRCC, Finance Committee | Secretariat Council Assembly | | | | SG (+ Dirs) | MFA |
| 1.4.3 | Conduct biennial IHO stakeholders' forums | 2.2 3.1 | | continuous | Secretariat | | Required information not being provided by MS, RHCs or organs of the IHO. Lack of human resources in Secretariat to assess and report on inputs | | SG | ADCC/MFA |
| 1.4.4 | Conduct biennial IHO stakeholders' forums | | | 2021 | Secretariat | | | | SG or Director and AD responsible for the subject matter, as appropriate | |

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|-------|--|-----|--|---|------------------------------|--|-----------------|------------------------------|--------------------|-------------------|
| 1.4.5 | Prepare and report on the development of an IHO Strategy for gender-inclusive language (Decision A2/07 refers) and report on the implement plan. | | | Amendments to M-1 and M-3 to be considered at A-3 | SG | | | | SG | ESO |
| 1.4.6 | Implementation of Decision A2/25 on the future of S-23. | | | Amendment to existing Resolution (PRO A2/1.9.5 refers and in addition to Task 2.8.7 on S-130) | SG | | | | SG | ADCS |

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 | 3.3 | | continuous | Secretariat | | | | SG | PA |
| 1.5.2 | Maintain, update and develop procedures to facilitate and improve the effectiveness of the finance and administrative work of the Secretariat | | | continuous | Secretariat | | | | SG | MFA |
| 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 | | | continuous | Secretariat | | MS encouraged to volunteer to translate lower priority IHO publications from EN to FR and SP | | SG | MFA |

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| 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 | | | continuous | Secretariat | 10k€ | | | SG | MFA |
| 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 M-3 –Resolutions of the IHO | | | As required | Secretariat | | | | SG | MFA (ADCC for the Yearbook) |
| 1.5.6 | Secretariat staff training | | | New CMS system for website Photographic skills training for PRCO Maintain Data Base Server for DCA | | 7k€ | | | SG | MFA |
| 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 | | | As required | continuous | Secretariat | | | SG | MFA |
| 1.5.8 | Maintain the premises and facilities of the IHO Secretariat as required as the occupant, including renovations or modifications as requirements arise | | | Continuous | continuous | Secretariat | 62 K€ | | SG | MFA |

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 | | | No Assembly in 2022, but countdown A-3 starts | Secretariat | | | | SG/ DCOORD | ADCC |
| 1.6.1.1 | Pre-meeting briefing and preparation for Chair of the Assembly | | | No Assembly in 2022 | Secretariat Chair of Assembly | Assembly Chair | | | SG | ADCC |
| 1.6.2 | Prepare and conduct annual sessions of the IHO Council | | | Annual | Secretariat | C-6, Monaco, Oct tbc | | | SG | ADCS |
| 1.6.2.1 | Pre-meeting briefing and preparation for Chair of Council | | | | Secretariat, Chair of Council | Council Chair 2 nights on site Monaco | | | SG | ADCS |

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”.

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| 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.

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| 2.1.1 | Organize, prepare, and report annual meetings of HSSC | 1.1 1.2 | | Monitor and approve HSSC Work Programme - Annual | HSSC Chair WG Chairs Secretariat | HSSC-14, Bali, Indonesia, 16-19 May TBC. DTECH +ADCS 6 nights on site | | Inability of MS and others to participate in meetings | DTECH | ADCS |
| 2.1.1.1 | Pre-meeting briefing and preparation for Chair | | | | | Monaco 1 night on site | | | DTECH | ADCS |
| 2.1.2 | Organize, prepare and report meetings of HSSC working groups | 1.1 1.2 | | As defined in the HSSC Work Programme | WG Chairs Secretariat | | | Inability of MS and others to participate in meetings | DTECH | AD assigned to the relevant WG or body |
| 2.1.2.1 | S-100WG | | | | | S-100WG-7 (tbc) Monaco DTECH, ADDT + TSSO | | | DTECH | ADDT |
| 2.1.2.2 | ENCWG | | | | | ENCWG-7 / S-101PT New Zealand (Oct/Nov 2022) ADDT/TSSO | | | DTECH | ADDT |
| 2.1.2.3 | S-100TSM | | | | | S-100TSM-10 (tbc) ADDT | | | DTECH | ADDT |
| 2.1.2.4 | NCWG | | | | | NCWG-9 (Australia, tbc) ADCS | | | DTECH | ADCS |
| 2.1.2.5 | NIPWG | | | | | NIPWG-10 Niteroi, Brazil TBC ADCS | | | DTECH | ADCS |
| 2.1.2.6 | DQWG | | | | | DQWG-18 8-11 Feb., to be defined, Monaco as back-up ADCS | | | DTECH | ADCS |
| 2.1.2.7 | TWCWG | | | | | TWCWG-6, Cape Town, South Africa, (Apr/May 2022) ADSO | | | DTECH | ADSO |
| 2.1.2.8 | ABLOS | | | | | ABLOS-BM29 & ABLOS 11 (3-6 October 2022 Monaco) | | | DTECH | ADSO |

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| 2.1.2.9 | HSWG | | | | | HSWG-2 ADSO | | | DTECH | ADSO |
| 2.1.2.10 | HDWG | | | | | HDWG-3, China (tbc) ADSO | | | DTECH | ADSO |
| 2.1.3 | Prepare for and represent HSSC at meetings of the IHO Council | | | Submit report and recommendations - Annual | HSSC Chair Secretariat | HSSC Chair 4 nights on site Funded only if country of Chair is not represented in the Council | | | DTECH | ADCS |
| 2.1.4 | Prepare for and represent HSSC at 3 rd session of the IHO Assembly | | | Submit reports and recommendations (through the Council) | HSSC Chair Secretariat | | | | DTECH | ADCS |
| 2.1.5 | Monitor the development of related international standards, specifications and guidance | 1.1 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 | Participation to be determined on the agenda of the relevant meeting and the level of involvement of the secretariat. Travel cost for 1 AD per meeting. 5 nights on site per meeting. | | | DTECH | AD relevant to the standard being discussed |
| 2.1.6 | Provide technical outreach, advice and guidance in relation to IHO standards, specifications and guidance | 1.1 1.2 | | Identify and attend relevant meetings and activities and report outcome - as required | HSSC Chair Group, Secretariat | Participation to be determined on the agenda of the relevant meeting and the level of involvement of the secretariat. Travel cost for 1 Dir/AD per meeting. 5 nights on site per meeting. | | | DTECH | ADDT |
| 2.1.6.1 | E-navigation Underway International (Digital@Sea Conference) | | IALA | | | SG or DTECH 4 nights on site | | | DTECH | ADSO |
| 2.1.6.2 | Digital@Sea Conference (Asia-Pacific) | | IALA | | | Local MS to be invited to represent the IHO – otherwise no IHO representation | | | DTECH | ADDT |

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| 2.1.6.3 | E-navigation Underway (Digital@Sea Conference) North America | | IALA | | | Local MS to be invited to represent the IHO – otherwise no IHO representation | | | DTECH | ADDT |
| 2.1.6.4 | OGC Technical and Planning Committee Meetings | | | | | IHO attendance only if relevant topics on the agenda and funding becomes available | | | DTECH | ADDT |
| 2.1.6.5 | Meeting of the OGC Marine Domain Working Group | | | | | IHO attendance only if relevant topics on the agenda and funding becomes available | | | DTECH | ADDT&ADCC |
| 2.1.6.6 | Shallow Survey 2022 | | | | | Wellington, New Zealand, (22-27 May 2022) Dir or AD 4 nights on site | | | DTECH | ADSO |
| 2.1.7 | Specify and develop a Document Management System for the collaborative drafting of complex standards | 1.1 1.2 | | Draft preliminary specifications and investigate possible solutions | HSSC Chair Group, Secretariat | | | | DTECH | ADCS |
| 2.1.8 | Maintain and extend IHO Resolutions (M-3) related to technical issues | 1.1 1.2 | | Draft proposed amendments for the consideration of the Council 2020 | HSSC, All WGs | | | | DTECH | AD assigned to the relevant WG or body |
| 2.1.9 | Establish and manage the IHO Singapore Laboratory for Innovation and Technology | | | Transition from S-57 to S-101 S-131 | HSSC / NIPWG | | | | DTECH | ADDT |

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 | G&T | 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 | Principal Director | Principal Manager |
|-------|---|------------|--|---|------------------------------|--|-----------------|------------------------------|--------------------|-------------------|
| 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) | 1.1 1.2 | | | NCWG | | | | DTECH | ADCS |
| 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> | 1.1 1.2 | | Extension to S-101 ENC to be considered after WENDWG reports on the Guidelines for S-101 ENC Scheming | NCWG | | | | DTECH | ADCS |
| 2.2.3 | Maintain the INTogIS infrastructure (and consider possible upgrade for INTogIS III for S-1XX products and services) | 1.1 | | | Secretariat | Support of the Republic of Korea | | | DTECH | ADDT/ADCS |
| 2.2.4 | Implement the decisions made following the report on the Future of the Nautical Paper Chart | 1.1 | | | HSSC (info IRCC, RHCs) | | | | DTECH | ADCS |

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 | G&T | 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 | Principal Director | Principal Manager |
|-------|--|------------|--|---|-------------------------------|--|-----------------|---|--------------------|--|
| 2.3.1 | Maintain and extend the S-100 GI Registry | 1.1 1.2 | | | S-100WG, Secretariat | Support of the Republic of Korea | | | DTECH | ADDT |
| 2.3.2 | Maintain and extend S-100 - <i>IHO Universal Hydrographic Data Model</i> | 1.1 1.2 | | | S-100WG | | | Inability of MS and others to participate in the work | DTECH | ADDT |
| 2.3.3 | Develop and maintain S-99 - <i>Operational Procedures for the Organization and Management of the S-100 Geospatial Information Registry</i> | 1.1 1.2 | | | S-100WG | | | | DTECH | ADDT |
| 2.3.4 | Develop and maintain S-10x Product Specifications | 1.1 1.2 | ECDIS OEM GIS Community Data providers | | Project teams Relevant WGs | Any contract support to be funded by the Special Projects Fund | | Inability of MS and others to participate in the work | DTECH | ADDT and/or AD assigned to the relevant WG or body |
| 2.3.5 | Provide advice and guidance to other organizations developing S-100 based Product Specifications | 1.1 1.2 | | | S-100WG Secretariat | Travel cost for 1 AD per meeting. 3 nights on site per meeting. Up to 2 meetings annually. | | Limited expertise available | DTECH | ADDT and/or AD assigned to the relevant WG or body |

| Task | Description | G&T | 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 | Principal Director | Principal Manager |
|-------|--|-----|--|---|---|--|-----------------|------------------------------|--------------------|--------------------|
| 2.3.6 | Maintain the Roadmap for the S-100 Implementation Decade | | | | Council Chair, SG, HSSC and IRCC Chairs / Secretariat | | | | SG/DTECH/D COORD | ADs as appropriate |

Element 2.4 S-57 Framework

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

| Task | Description | G&T | 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 | Principal Director | Principal Manager |
|-------|--|------------|--|---|------------------------------|--|-----------------|---|--------------------|-------------------|
| 2.4.1 | Maintain S-52 - Specifications for Chart Content and Display Aspects of ECDIS | 1.1 1.2 | ECDIS OEM | | ENCWG | | | | DTECH | ADDT |
| 2.4.2 | Maintain S-57 - IHO Transfer Standard for Digital Hydrographic Data, including ENC Product Specification | 1.1 1.2 | ECDIS OEM Data servers | | ENCWG | | | Inability of MS and others to participate in the work | DTECH | ADDT |
| 2.4.3 | Maintain S-58 - ENC Validation Checks | 1.1 1.2 | | | ENCWG | | | Inability of MS and others to participate in the work | DTECH | ADDT |
| 2.4.4 | Maintain S-61 - Product Specification for Raster Navigational Charts (RNC) | 1.1 | ECDIS OEM Data servers | No action expected | ENCWG | | | | DTECH | ADDT |

| Task | Description | G&T | 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 | Principal Director | Principal Manager |
|-------|--|------------|--|---|------------------------------|--|-----------------|---|--------------------|-------------------|
| 2.4.5 | Maintain S-63 - <i>IHO Data Protection Scheme</i> | 1.2 | | | ENCWG, DPSWG | | | Inability of MS and others to participate in the work | DTECH | ADDT |
| 2.4.6 | Maintain S-64 - <i>IHO Test Data Sets for ECDIS</i> | 1.1 1.2 | | | ENCWG, DPSWG | | | | DTECH | ADDT |
| 2.4.7 | Maintain S-65 - <i>ENCs: Production, Maintenance and Distribution Guidance</i> | 1.1 1.2 | | | ENCWG | | | | DTECH | ADDT |
| 2.4.8 | Maintain S-66 - <i>Facts about Electronic Charts and Carriage Requirements</i> | 1.1 | | | ENCWG | | | | DTECH | ADDT |
| 2.4.9 | Maintain S-67 – <i>Mariners' Guide to Accuracy of ENCs</i> | 1.1 | | | DQWG | | | | DTECH | ADCS |

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 | G&T | 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 | Principal Director | Principal Manager |
|-------|--|-----|--|---|---|--|-----------------|---|--------------------|-------------------|
| 2.5.1 | Monitor and assess requirements related to data flow, data security, data quality, backup arrangements, time-varying information, etc. | 1.2 | | | All WG | | | Inability of MS and others to participate in the work | DTECH | ADCS |
| 2.5.2 | Support the development and implementation of Maritime Services | 1.1 | IALA IMO | | NIPWG NCWG S-100WG TWCWG WWNWS-SC | | | Inability of MS and others to participate in the work | DTECH | AD as appropriate |

Element 2.6 Hydrographic Surveying

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

| Task | Description | G&T | 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 | Principal Director | Principal Manager |
|-------|--|------------|--|---|------------------------------|--|-----------------|---|--------------------|-------------------|
| 2.6.1 | Maintain and extend S-44 - <i>IHO Standards for Hydrographic Surveys</i> | 1.2 2.2 | | Report annually to HSSC. | HSWG | | | Inability of MS and others to participate in the work | DTECH | ADSO |

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 | G&T | 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 | Principal Director | Principal Manager |
|-------|---|-----|--|---|------------------------------|--|-----------------|------------------------------|--------------------|-------------------|
| 2.7.1 | Organize the biennial ABLOS Conference | 3.0 | | ABLOS Conferences. Next: 2022 | | Self-funding | | | DTECH | ADSO |
| 2.7.2 | Maintain C-51 - <i>Manual on Technical Aspects of the UN Convention on the Law of the Sea</i> | 3.0 | | | | | | | DTECH | ADSO |

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 | G&T | 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 | Principal Director | Principal Manager |
|-------|--|-----|--|--|------------------------------|--|-----------------|---|--------------------|-------------------|
| 2.8.1 | Maintain S-12 - <i>Standardization of List of Lights and Fog Signals</i> | 1.2 | | Revision as appropriate. No action expected | NIPWG | | | | DTECH | ADCS |
| 2.8.2 | Maintain S-32- <i>Hydrographic Dictionary</i> | 1.2 | | Inclusion in GI Registry | HDWG | Any contract support to be funded by the Special Projects Fund HDWG3, China, 2022 (tbc) | | Inability of MS and others to participate in the work | DTECH | ADSO |
| 2.8.3 | Maintain S-49 - <i>Standardization of Mariners' Routeing Guides</i> | 1.2 | | Revision as appropriate | NIPWG | | | | DTECH | ADCS |
| 2.8.4 | Maintain the list of standard tidal constituent | 2.2 | | Continuous | TWCWG | | | | DTECH | ADSO |
| 2.8.5 | Maintain the inventory of national tide gauges and current meters | 2.2 | | Continuous | TWCWG | | | | DTECH | ADSO |
| 2.8.6 | Ensure that data quality aspects are addressed in an appropriate and harmonized way for all relevant standards | 1.2 | | Continuous | DQWG | | | | DTECH | ADCS |

| Task | Description | G&T | 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 | Principal Director | Principal Manager |
|-------|---|-----|--|---|------------------------------|--|-----------------|------------------------------|--------------------|-------------------|
| 2.8.7 | Develop S-130 Product Specification - Polygonal Demarcations of Global Sea Areas - and then Dataset | | | | HSSC/S-130 PT | | | | SG/DTECH | ADCS |

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

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 | G&T | Notable stakeholder (s) outside the IHO | Notable deliverables / milestones and timing in 2021 | Lead authority / Participants | Notable specific resources from the IHO budget / dates/ venue / Secretariat participants | Other resources | Significant risks to delivery | Principal Director | Principal Manager |
|---------|---|-----|---|--|---|--|-----------------|---|--------------------|-------------------|
| 3.1.1 | Organize, prepare and report annual meetings of IRCC | 3.1 | | Monitor and approve IRCC Work Programme – Annual | IRCC Chair, RHC Chairs, Chairs of the IRCC Bodies, Secretariat | IRCC-14 Indonesia (TBC June 2022) DCOORD +ADCC 4 nights on site to be held in tandem with 3.3.1 | | Inability of MS and others to participate in meetings | DCOORD | ADCC |
| 3.1.1.1 | Pre-meeting briefing and preparation for Chair of IRCC | | | | | Monaco IRCC Chair Travel cost and per diem for IRCC Chair (1 night on site) | | | DCOORD | ADCC |
| 3.1.2 | Prepare for and represent IRCC at meetings of the IHO Council | | | Submit report and recommendations - Annual | IRCC Chair Secretariat | IRCC Chair 4 nights on site Funded only if country of Chair is not represented in the Council | | | DCOORD | ADCC |

| Task | Description | G&T | Notable stakeholder (s) outside the IHO | Notable deliverables / milestones and timing in 2021 | Lead authority / Participants | Notable specific resources from the IHO budget / dates/ venue / Secretariat participants | Other resources | Significant risks to delivery | Principal Director | Principal Manager |
|-------|--|------------|---|--|-------------------------------|--|-----------------|-------------------------------|--------------------|---|
| | | | | | | | | | | |
| 3.1.3 | Maintain and extend IHO Resolutions (M-3) related to coordination issues | 3.1 3.2 | | Draft proposed amendments for the consideration of the Council 6 | IRCC | | | | DCOORD | ADCC + AD assigned to the relevant WG or body |

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 | G&T | Notable stakeholder(s) outside the IHO | Notable deliverables / milestones and timing in 2021 | Lead authority / Participants | Notable specific resources from the IHO budget / dates/ venue / Secretariat participants | Other resources | Significant risks to delivery | Principal Director | Principal Manager |
|---------|---|------------|--|---|-------------------------------|--|-----------------|---|-----------------------|------------------------------|
| 3.2.1 | Prepare for and report meetings of the Regional Hydrographic Commissions (RHC): | 1.3 3.1 | | Submit report and recommendations – normally annually | RHC Chairs Secretariat | Most Commissions meet annually Travel cost for SG and Directors 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 | SG DTECH DCOORD | ADCC ADCS ADDT ADSO |
| 3.2.1.1 | ARHC – Arctic Regional Hydrographic Commission | | Arctic Council and Arctic SDI | | | ARHC12, SG (Canada, dates tbc) 4 nights on site | | | SG | ADCS |
| 3.2.1.2 | BSHC - Baltic Sea Hydrographic Commission | | | | | BSHC27 DTECH 3 nights on site | | | DTECH | ADSO |
| 3.2.1.3 | EAHC - East Asia Hydrographic Commission | | | | | EAHC SC8 Thailand, February dates tbc, SG 3 nights on site | | | SG | ADDT |
| 3.2.1.4 | EAtHC - Eastern Atlantic Hydrographic Commission | | | | | No Conference in 2022 (tbc) | | | DTECH | ADCS |

| Task | Description | G&T | Notable stakeholder(s) outside the IHO | Notable deliverables / milestones and timing in 2021 | Lead authority / Participants | Notable specific resources from the IHO budget / dates/ venue / Secretariat participants | Other resources | Significant risks to delivery | Principal Director | Principal Manager |
|---------|---|-----|---|--|-------------------------------|---|-----------------|-------------------------------|--------------------|-------------------|
| 3.2.1.5 | MACHC - Meso American - Caribbean Sea Hydrographic Commission | | IMO, IALA, ACS, OECS, COCATRAM | | | MACHC22, December (TBC) DCOORD + ADCC 6 nights on site | | | DCOORD | ADCC |
| 3.2.1.6 | MBSHC - Mediterranean and Black Seas Hydrographic Commission | | IALA, IC-ENC, PRIMAR, CIESM, Private Industries | | | MBSHC22, Ljubljana, Slovenia, 29 March – 1 April 2021 DCOORD + ADCS 4 nights on site BASWG16, Istanbul, Turkey, 2022, dates tbc DCOORD 3 nights on site | | | DCOORD | ADCS |
| 3.2.1.7 | NHC - Nordic Hydrographic Commission | | | | | NHC64, dates and venue tbc SG 3 nights on site | | | SG | ADDT |
| 3.2.1.8 | NIOHC - North Indian Ocean Hydrographic Commission | | | | | NIOHC21, dates tbc DTECH 4 nights on site | | | DTECH | ADSO |
| 3.2.1.9 | NSHC - North Sea Hydrographic Commission | | | | | NSHC35, Reykjavik, Iceland, 5-6 April 2022 SG 3 nights on site | | | SG | ADSO |

| Task | Description | G&T | Notable stakeholder(s) outside the IHO | Notable deliverables / milestones and timing in 2021 | Lead authority / Participants | Notable specific resources from the IHO budget / dates/ venue / Secretariat participants | Other resources | Significant risks to delivery | Principal Director | Principal Manager |
|----------|--|-----|--|--|-------------------------------|--|-----------------|-------------------------------|--------------------|-------------------|
| 3.2.1.10 | RSAHC - ROPME Sea Area Hydrographic Commission | | | | | RSAHC9, Muscat, Oman, dates tbc DCOORD 4 nights on site | | | DCOORD | ADSO |
| 3.2.1.11 | SAIHC - Southern Africa and Islands Hydrographic Commission | | | | | SAIHC17, Mauritius, DTECH | | | DTECH | ADDT |
| 3.2.1.12 | SEPRHC - South East Pacific Regional Hydrographic Commission | | | | | SEPRHC15, Chile, 2023 DCOORD | | | DCOORD | ADCC |
| 3.2.1.13 | SWAtHC - South West Atlantic Hydrographic Commission | | | | | SWAtHC16, tbc 2022 DCOORD 4 nights on site | | | DCOORD | ADCC |
| 3.2.1.14 | SWPHC - South West Pacific Hydrographic Commission | | IMO, IALA, SPC | | | SWPHC19, Vanuatu, February 2022, dates tbc DTECH + ADCC 4 nights on site | | | DTECH | ADCC |
| 3.2.1.15 | USCHC - USA and Canada Hydrographic Commission | | | | | USCHC44 -USA, Venue and dates tbc SG 2 nights on site | | | SG | ADDT |

| Task | Description | G&T | Notable stakeholder(s) outside the IHO | Notable deliverables / milestones and timing in 2021 | Lead authority / Participants | Notable specific resources from the IHO budget / dates/ venue / Secretariat participants | Other resources | Significant risks to delivery | Principal Director | Principal Manager |
|-------|---|------------|--|--|---------------------------------------|--|-----------------|--|--------------------|-------------------|
| 3.2.2 | Organize, prepare for and report meetings of Hydrographic Commission on Antarctica (HCA) | 3.2 | COMNAP IAATO SCAR IALA | Submit report and recommendations - Annually. Conduct a risk assessment for the Antarctic region and develop a work programme to improve Antarctic charting. 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.. | HCA Chair Observers Secretariat | HCA-18, Berlin, Germany (back-to-back with ATCM XLIV), 2022, 4 nights on site SG+ADCS+ESO (no Conference planned in 2023)) | | Inability of Members and others to participate in HCA meetings or to engage with other Antarctic organizations | SG | ADCS |
| 3.2.3 | Contribute to improving the framework of IHO response to marine disasters | 3 | | Improve the relevant guidelines for disaster risk reduction. Continuous | RHC Chairs Secretariat | | | | DCOORD | ADCC |
| 3.2.4 | Maintain and enhance the underlying database and IHO Publication C-55 – <i>Status of Hydrographic Surveying and Nautical Charting Worldwide</i> | 2.2 3.1 | | Develop a new framework for the input, presentation and assessment of the survey and nautical cartography status in C-55 | Secretariat | | | | DCOORD | ADCC |

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 | G&T | Notable stakeholder(s) outside the IHO | Notable deliverables / milestones and timing in 2021 | Lead authority / Participants | Notable specific resources from the IHO budget / dates/ venue / Secretariat participants | Other resources | Significant risks to delivery | Principal Director | Principal Manager |
|---------|--|------------|--|---|--|--|-----------------|-------------------------------|--------------------|-------------------|
| 3.3.1 | Organize, prepare and report annual meetings of the Capacity Building Sub-Committee (CBSC) | 1.3 3.1 | IMO IALA | Monitor and approve CB Work Programme (CBWP). Annual | CBSC Chair CB Coordinators Secretariat | CBSC20, Indonesia, tbc, June 2022 DCOORD, ADCC To be held in tandem with 3.1.1 The IHO will organize a Capacity Building and IBSC Stakeholders' Seminar (tbc) | | | DCOORD | ADCC |
| 3.3.1.1 | Pre-meeting briefing and preparation for Chair of CBSC | | | | | CBSC Chair Monaco 1 night on site Funded from the CB Fund administrative expenses, when required | | | DCOORD | ADCC |
| 3.3.2 | Manage the IHO Capacity Building Fund | 1.3 3.1 | | Continuous | CBSC Chair Secretariat | | | | DCOORD | ADCC/MFA |

| Task | Description | G&T | Notable stakeholder(s) outside the IHO | Notable deliverables / milestones and timing in 2021 | Lead authority / Participants | Notable specific resources from the IHO budget / dates/ venue / Secretariat participants | Other resources | Significant risks to delivery | Principal Director | Principal Manager |
|-------|---|------------|--|--|-------------------------------|--|---------------------------|-------------------------------|--------------------|-------------------|
| 3.3.3 | Develop and maintain a Capacity Building Management System | 1.3 3.3 | | Support the implementation of CBWP Continuous | CBSC Chair Secretariat | Support from the Republic of Korea | Donor States and Agencies | | DCOORD | ADCC |
| 3.3.4 | Review and maintain the IHO Capacity Building Strategy | 1.3 3.1 | | Up to date CB Strategy Annually | CBSC Chair Secretariat | | | | DCOORD | ADCC |
| 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 | 1.3 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 | | | | DCOORD | ADCC |
| 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/IALA/FIG/IMPA Capacity Building Coordination meeting | 1.3 3.1 | World Bank UNDP, UNEP Donor Agencies | Coordinated delivery of Capacity Building activities. Investigate new opportunities for CB activities. Increase the CB Fund. Annually | Secretariat | 2 meetings annually in junction with other events Travel cost for DCOORD and/or ADCC 1-2 nights on site per meeting Joint CB Group meeting to be hosted by IHO, in Monaco, Principality of Monaco (dates tbc) | | | DCOORD | ADCC |

| Task | Description | G&T | Notable stakeholder(s) outside the IHO | Notable deliverables / milestones and timing in 2021 | Lead authority / Participants | Notable specific resources from the IHO budget / dates/ venue / Secretariat participants | Other resources | Significant risks to delivery | Principal Director | Principal Manager |
|-------|--|------------|---|---|---|--|-----------------|-------------------------------|--------------------|-------------------|
| 3.3.7 | Organize, prepare and report on a Capacity Building and IBSC Stakeholders' Forum | 1.3 3.1 | IMO IALA IOC WMO FIG Academy | Obtain lessons learned from CB training activities Review the future of the IHO CB Work Programme and CB Strategy. Engage with institutions delivering IBSC recognized programmes. | Secretariat CBSC Chair IBSC Chair | The IHO will organize a Capacity Building and IBSC Stakeholders' Seminar, following CBSC20 (tbc) (see 3.3.1) | | | DCOORD | ADCC |
| 3.3.8 | Maintain IHO publication M-2 - <i>National Maritime Policies and Hydrographic Services</i> | 2.2 3.3 | | Continuous | Secretariat | | | | DCOORD | ADCC |
| 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) | 1.3 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. | | | DCOORD | ADCC |

| Task | Description | G&T | Notable stakeholder(s) outside the IHO | Notable deliverables / milestones and timing in 2021 | Lead authority / Participants | Notable specific resources from the IHO budget / dates/ venue / Secretariat participants | Other resources | Significant risks to delivery | Principal Director | Principal Manager |
|--------|---|-------------------|---|--|---|--|-----------------|-------------------------------|--------------------|-------------------|
| 3.3.10 | Investigate and Develop Regional Hydrographic / Maritime Projects | 2.1 2.2 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 | | | | DCOORD | ADCC |
| 3.3.11 | Develop and maintain an online repository of training material and references | 3.1 3.3 | Member States and other States RHCs Academia | Ensure all training material and references are available | CBSC Chair RHC Chairs Secretariat | In accordance with annual CBWP funded by the CB Fund. | | | | |
| 3.3.12 | Investigate and Develop Maritime Projects in Caspian Sea | 2.1 2.2 3.1 | IMO IALA Funding Institutions | Ensure awareness of multilateral or bilateral projects with hydrographic and/or maritime sectors (in cooperation with IMO and IALA), and to provide advice to governments, project managers and funding agencies. | Secretariat RHC Chairs | IMO/IHO/IALA High level visit to Caspian Countries – Date (1 st semester 2022) and Location tbc DCOORD 2-3 nights on site | | | DCOORD | ADCC |

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 | G&T | Notable stakeholder(s) outside the IHO | Notable deliverables / milestones and timing in 2021 | Lead authority / Participants | Notable specific resources from the IHO budget / dates/ venue / Secretariat participants | Other resources | Significant risks to delivery | Principal Director | Principal Manager |
|-------|--|------------|--|--|-------------------------------|--|-----------------|---|--------------------|-------------------|
| 3.4.1 | Organize, prepare and report annual meetings of the WEND Working Group | 1.1 | CIRM RENC Management | Foster the implementation of the WEND principles (including WEND100 principles) monitor progress and report to IRCC. Annually | WEND WG Chair Secretariat | WENDWG-12, USA (22-24 February 2022), dates and location TBC. Go no-go by end of December 2021. If not possible, same dates but for VTC sessions only. DCOORD +ADCS 4 nights on site | | | DCOORD | ADCS |
| 3.4.2 | Maintain liaison with RENCs | 1.1 | RENC management RENC MS | Facilitate the promotion of RENC co-operation for the benefit of ENC end-users. Support S-100 Implementation Strategy Annually | WEND WG Chair Secretariat | 2 Steering Committee meetings annually. IC-ENC in July, PAC in October DCOORD 3 nights on site per meeting | | | DCOORD | ADCS |
| 3.4.3 | Maintain and coordinate ENC and INT schemes, including coverage, consistency, quality and availability | 2.2 3.3 | | 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 data in the same area. | DCOORD | ADCS |

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 | G&T | Notable stakeholder(s) outside the IHO | Notable deliverables / milestones and timing in 2021 | Lead authority / Participants | Notable specific resources from the IHO budget / dates/ venue / Secretariat participants | Other resources | Significant risks to delivery | Principal Director | Principal Manager |
|-------|--|-----|--|---|-------------------------------|---|-----------------|---|--------------------|-------------------|
| 3.5.1 | Organize, prepare and report annual meetings of the World-Wide Navigational Warning Service Sub-Committee (WWNWS-SC) | 1.1 | IMO IALA IMSO | Monitor and guide the IHO/IMO World-Wide Navigational Warning Service including NAVAREA and coastal warnings. Annually | WWNWS-SC Chair Secretariat | WWNWS14, August – September 2022 (tbc) ADSO | | | DCOORD | ADSO |
| 3.5.2 | Conduct annual meetings of the WWNWS-SC Document Review Working Group | 1.1 | IMO IALA IMSO WMO | Maintain the IMO/WWNWS documents. Annually | WWNWS-SC Chair Secretariat | DRWG20, , IMO, London, UK, June 2022 (week after NCSR 9)(TBC) ADSO3 nights on site | | | DCOORD | ADSO |
| 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 | IMO IMSO WMO | Provide update to WWNWS documentation. Continuous | WWNWS-SC Chair Secretariat | | | | DCOORD | ADSO |
| 3.5.4 | Liaise with IMO and WMO on the delivery of MSI within the GMDSS | 1.2 | IMO IALA IMSO WMO | Ensure maintenance of service delivery. Continuous | WWNWS-SC Chair Secretariat | ADSO 1 meeting, 2 days per year within Europe (London/ Genève/ Monaco) | | Lack of engagement of national MSI Coordinators with the relevant NAVAREA Coordinator | DCOORD | ADSO |

| Task | Description | G&T | Notable stakeholder(s) outside the IHO | Notable deliverables / milestones and timing in 2021 | Lead authority / Participants | Notable specific resources from the IHO budget / dates/ venue / Secretariat participants | Other resources | Significant risks to delivery | Principal Director | Principal Manager |
|-------|--|-----|--|---|-------------------------------|--|-----------------|-------------------------------|--------------------|-------------------|
| 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 | IMO IALA IMSO WMO | Monitor projects to ensure maintenance of service delivery at least at current levels, investigation areas for improvement. Continuous | WWNWS-SC Chair Secretariat | | | | DCOORD | ADSO |
| 3.5.6 | Improve the delivery and exploitation of MSI to global shipping by taking full advantage of technological developments | 1.1 | IMO IALA IMSO WMO | 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 | | | | DCOORD | ADSO |

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 | G&T | Notable stakeholder(s) outside the IHO | Notable deliverables / milestones and timing in 2021 | Lead authority / Participants | Notable specific resources from the IHO budget / dates/ venue / Secretariat participants | Other resources | Significant risks to delivery | Principal Director | Principal Manager |
|-------|---|-----|--|---|---|---|--|--|--------------------|-------------------|
| 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 | 3.2 | 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.</p> <p>Annually</p> | GGC Chair Secretariat | <p>GEBCO meetings</p> <p>GGC38: Monaco, 18-20 January 2022</p> <p>DCOORD + ADSO</p> <p>SCUFN 34, San Petersburg, Russian Federation, March – April 2022 (tbc), Monac as back-up</p> <p>ADCS 5 nights on site</p> <p>TSCOM38 and SCRUM9, SCOPE3, , 11-15 Oct/Nov 2022 (tbc)</p> <p>ADSO 4 nights on site</p> | | | DCOORD | ADCS ADSO |
| 3.6.2 | Ensure effective operation of the IHO Data Centre for Digital Bathymetry (DCDB) | 3.2 | | <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 | | Operation of the DCDB is funded primarily by US (NOAA) | Inability of sole founder to continue current level of support | DCOORD | ADSO |

| Task | Description | G&T | Notable stakeholder(s) outside the IHO | Notable deliverables / milestones and timing in 2021 | Lead authority / Participants | Notable specific resources from the IHO budget / dates/ venue / Secretariat participants | Other resources | Significant risks to delivery | Principal Director | Principal Manager |
|-------|--|------------|--|---|--|--|-----------------|--|--------------------|-------------------|
| 3.6.3 | Encourage the contribution of bathymetric data to the IHO DCDB | 3.2 | Academia and Industry | GEBCO representatives participate in RHC meetings. Continuous | GGC Chair RHC Chairs Secretariat | | | Lack of MS willingness to provide data | DCOORD | ADSO |
| 3.6.4 | Develop general guidelines on the use and collection of Crowd Sourced Bathymetry (CSB) | 2.2 3.2 | | Maintain updated the new IHO publication on CSB B12 Continuous | CSBWG Chair Director DCDB | CSBWG12 –2022 (tbc) ADSO 5 nights on site | | | DCOORD | ADSO |
| 3.6.5 | Support cooperative bathymetric data gathering programmes, including; the Atlantic Ocean Research Alliance (AORA) | 3.2 | | Contribute to global and regional ocean mapping programmes. Annually | CSBWG Chair, Secretariat | ASMIWG12 (tbc) 2 meetings - funded by EU | | | DCOORD | ADSO |
| 3.6.6 | Maintain IHO bathymetric publications, including: B-4 - <i>Information Concerning Recent Bathymetric Data</i> B-6 - <i>Standardization of Undersea Feature Names</i> B-8 - <i>Gazetteer of Geographical Names of Undersea Features</i> B-9 - <i>GEBCO Digital Atlas</i> B-10 - <i>The History of GEBCO</i> B-11 - <i>IHO-IOC GEBCO Cook Book</i> B-12 – Guidance on Crowd source Bathymetry | 3.2 3.3 | IOC | Maintain publications updated | GGC Chair Secretariat | | | | DCOORD | ADSO/ADCS |

| Task | Description | G&T | Notable stakeholder(s) outside the IHO | Notable deliverables / milestones and timing in 2021 | Lead authority / Participants | Notable specific resources from the IHO budget / dates/ venue / Secretariat participants | Other resources | Significant risks to delivery | Principal Director | Principal Manager |
|--------|---|------------|--|---|---|--|---|-------------------------------|--------------------|-------------------|
| 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 | 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 | | Provided from GEBCO Fund – 8.200 Euros | | DCOORD | ADSO |
| 3.6.8 | Maintain GEBCO Website | 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 | | Provided from GEBCO Fund | | DCOORD | ADSO |
| 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 | 3.1 3.2 | | Course curriculum and schedule for first course occasion. 2020 | GGC Chair Secretariat | | | | DCOORD | ADSO |
| 3.6.10 | Update and enhance the GEBCO Gazetteer (B-8) for internet access | 3.2 3.3 | | Continuing enhancement and maintenance to incorporate new names from each SCUFN meeting. Annually | GGC Chair Director DCDB Secretariat | | Provided from GEBCO Fund – 10.000 Euros | | DCOORD | ADCS |

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 | G&T | Notable stakeholder(s) outside the IHO | Notable deliverables / milestones and timing in 2021 | Lead authority / Participants | Notable specific resources from the IHO budget / dates/ venue / Secretariat participants | Other resources | Significant risks to delivery | Principal Director | Principal Manager |
|---------|--|------------|--|---|-------------------------------|---|---|--|--------------------|-------------------|
| 3.7.1 | Organize, prepare and report annual meetings of the Marine Spatial Data Infrastructures Working Group (MSDIWG) | 2.1 2.3 | OGC Academia Industry UN-GGIM UN-WGMGI | Continuous | MSDIWG Chair Secretariat | MSDIWG13, tbc March/April 2022 with an integrated OGC Marine Domain WG part and a UN-GGIM WGMG Meeting DCOORD and ADCC 5 nights on site | Travel cost, per diem, and working hours for MS and other representative to prepare for and attend the meeting. | | DCOORD | ADCC |
| 3.7.2 | Maintain the relevant IHO standards, specifications and publications on MSDI, including C-17 | 2.1 2.3 | OGC Academia Industry | | MSDIWG Chair Secretariat | | | | DCOORD | ADCC |
| 3.7.2.1 | Develop a new framework for C-17 (online interactive publication) | | | Revised version of IHO publication C-17 - 2021 | MSDIWG Chair Secretariat | | | Lack of resources to develop a new framework | DCOORD | ADCC |
| 3.7.3 | Develop training syllabi for MSDI and associated learning subjects | 2.1 3.1 | OGC Academia Industry | Course materiel for standardized MSDI training course | MSDIWG Chair Secretariat | | | | DCOORD | ADCC |
| 3.7.4 | Meeting of the OGC Marine Domain Working Group | 2.1 2.3 | OGC | Coordination of the relevant activities | MSDIWG Chair Secretariat | | | | DCOORD | ADCC |

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 | G&T | Notable stakeholder(s) outside the IHO | Notable deliverables / milestones and timing in 2021 | Lead authority / Participants | Notable specific resources from the IHO budget / dates/ venue / Secretariat participants | Other resources | Significant risks to delivery | Principal Director | Principal Manager |
|-------|---|-----|--|---|-------------------------------|--|---|---|--------------------|-------------------|
| 3.8.1 | Organize, prepare and report annual meetings of the International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers (IBSC) | 2.2 | FIG ICA Academia Industry | Recognition of new submissions and maintenance of guiding tools and references | IBSC Chair Secretariat | IBSC45, Cadiz, Spain, March/April 2022 (tbc) ADCC 14 nights on site | Travel cost, per diem, and working hours for MS and other representative to prepare for and attend the meeting. | | DCOORD | ADCC |
| 3.8.2 | Fulfil the functions of the IBSC | 2.2 | FIG ICA | Provide guidance to training institutions Continuous | IBSC Chair Secretariat | | | Availability of Board members to undertake an increasing inter-sessional workload. Capacity of Secretariat to provide full support to the Board. | DCOORD | ADCC |
| 3.8.3 | Manage the IBSC Fund | | FIG ICA | Management of the IBSC Fund effectively and report to the IHO Secretariat Continuous | IBSC Chair Secretariat | | | | DCOORD | ADCC |

| Task | Description | G&T | Notable stakeholder(s) outside the IHO | Notable deliverables / milestones and timing in 2021 | Lead authority / Participants | Notable specific resources from the IHO budget / dates/ venue / Secretariat participants | Other resources | Significant risks to delivery | Principal Director | Principal Manager |
|-------|---|-----|---|--|--------------------------------------|--|-----------------|--|--------------------|-------------------|
| 3.8.4 | <p>Review the IBSC standards and maintain IBSC Publications, including:</p> <p><i>C-6 - Reference Texts for Training in Hydrography</i></p> <p><i>C-47 - Training Courses in Hydrography and Nautical Cartography</i></p> <p><i>S-5A and B - Standards of Competence for Hydrographic Surveyors</i></p> <p><i>S-8A and B - Standards of Competence for Nautical Cartographers</i></p> <p><i>Guidelines for the Implementation of the Standards of Competence</i></p> <p><i>Frequently asked Questions</i></p> | 2.2 | <p>FIG</p> <p>ICA</p> <p>Academia</p> <p>Industry</p> | <p>Monitor, control and update of the IBSC Standards in S-5A/B and S-8A/B and Publications</p> <p>Continuous</p> | <p>IBSC Chair</p> <p>Secretariat</p> | <p>Support to IBSC on review and update of Standards of Competence</p> <p>Intersessional Meeting, October/November (tbc)</p> <p>ADCC</p> <p>6 nights on site</p> | | <p>Availability of Board members to undertake an increasing inter-sessional workload.</p> <p>Capacity of Secretariat to provide full support to the Board.</p> | DCOORD | ADCC |