**TWCWG WORK PLAN 2024-2025 \*\*\*DRAFT\*\*\***

# Objective

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

# Tasks

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| A | Maintain the list of standard tidal constituents (IHO Task 2.8.4). |
| B | Compare the tidal predictions generated as a result of analysis of a common data set using different analysis software. |
| D | Develop, maintain and extend a Product Specification for Surface Currents in ECDIS (S-111) (IHO Task 2.3.4). |
| E | Develop, maintain and extend a Product specification for Water Level Information and Water Level Adjustment, WLA in ECDIS (S-104) (IHO Task 2.3.4). |
| E | Develop, maintain and extend a Product specification for Water Level Information (non-Water Level Adjustment, WLA) (S-10x) (IHO Task 2.3.4). |
| F | Liaise with S-100WG on water levels and currents themes relevant to ECDIS applications (IHO Task 2.3.5). |
| G | Liaise with industry experts on the development of Product Specifications for water levels and currents (IHO Task 2.5.1). |
| H | Prepare and maintain an inventory of water level gauges and current meters used by Member States and publish it on the IHO/TWCWG web site (IHO Task 2.8.5). |
| I | Review and maintain the Actual Tides and Currents On-Line links as published on the IHO TWCWG website (IHO Task 2.8.5). |
| J | Maintain and extend the relevant IHO standards, specifications and publications as required (IHO Tasks 2.8.4 and 2.1.8). |
| K | Conduct at least annual meetings of TWCWG and its sub-group(s) and project team(s) (IHO Tasks 2.1.2.7). |
| L | Develop and maintain material for course on Tides, Water Levels and Currents (IHO Task 3.3.9). |
| M | Review and maintain the List of Chart Datums (CD) in use by Member States (IHO Task 2.8.8). |

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| A.1 | Maintain the list of standard tidal constituents. | M |  | - | Permanent | O | -Chris Jones\*  -All |  | Review current list of published tidal constituents. |
| B.1 | Compare the tidal and tidal current predictions generated as a result of analysis of a common data set using different analysis software. | M |  | - | Permanent | O | -Hilde Sande Borck \*  -All |  | Select Common data set.  Analyse using different software.  Compute common set of predictions.  Compare results. |
| B.2 | Support and Contribute to the International Association for the Physical Sciences of the Oceans (IAPSO) Best Practice Study group on Tidal Analysis. | M | As directed by IAPSO/TWCWG contact | 2023 | tbc | ~~P~~  O | -Hilde Sande Borck\*  -Andreas Boesch  -Zarina Jayaswal  -Phil MacAulay  -Peter Stone  -Andrew Matthews (IAPSO/TWCWG Contact) |  | Engage with the Best Practice Study Group, co-ordinating tasks on behalf of TWCWG.  Report back to, and enlist support from, TWCWG. |
| D.1 | Develop and maintain a product specification for surface currents information in ECDIS  (S-111). | H | Issue Edition 1.0.0 | 2013 | ~~2017~~  ~~2018~~  2019 | ~~O~~ C | See report TWCWG4: List of involved and active members:  -Greg Seroka\*  -Thomas Hammarklint  ~~-Gwenaële Jan,~~  -Phil MacAuley (Gilles -Mercier & Maxime Carre)  -Raphael Malyankar  -Kwang nam HAN  -Ronald Kuilman | S-100  S-98  M-3 IHO Resolutions | Joint project team is established as required.  Liaise with S-100WG (see F.1).  Liaise with industry experts (see G.1).  Edition 1.2.0 (S-111) is aligned with S-100 Edition 5.0.0.  Edition 2.0.0 (S-111) is aligned with S-100 Edition 5.2.0. |
| H | Issue  Edition 1.2.0 | 2021 | 2023 | C |
| H | Issue Edition 2.0.0 | ~~2023~~  2024 | ~~2024~~  2025 | P |
| E.1 | Develop and maintain a product specification for water levels information in ECDIS (S-104). | H | ~~Develop draft~~  ~~Product Specifications (S-104) for water level information for surface navigation in~~  ~~S-100~~ | 2009 | ~~2017~~  ~~2018~~  ~~2019~~  2020 | C | See report TWCWG4: List of involved and active members:  -Zarina Jayaswal\*  -Andreas Boesch  -Thomas Hammarklint  -Phil MacAuley  (Gilles Mercier Maxime Carre)  -Raphael Malyankar  -Kwang nam HAN,  -Greg Seroka | S-100  S-98  M-3 IHO Resolutions | Joint project team is established as required.  Liaise with S-100WG (see F.1)  Liaise with industry experts (see G.1)  Edition 1.1.0 (S-104) is aligned with S-100 Edition 5.0.0.  Edition 2.0.0 (S-104) is aligned with S-100 Edition 5.2.0. |
| H | Issue Edition 1.0.0 | 2019 | 2021 | C |
| H | Issue Edition 1.1.0 | 2021 | 2023 | C |
| H | Issue Edition 2.0.0 | ~~2023~~  2024 | ~~2024~~  2025 | P |
| E.2 | Create, develop and maintain S-10x Product Specification (water levels information in ECDIS; extended scope). | M | Develop draft  Product Specification (S-10x) for water level information for surface navigation; extended scope. | 2024 | 2025 | P | -Phil MacAuley  -Felipe Rodrigues Santana  -Greg Seroka  -Peter Stone  -Chris Jones (Tom Cropper)  -Raphael Malyankar  -Fernando Oreiro  -Zarina Jayaswal  -Anni Jokiniemi  -Hilde Sande Borck  -Nicki Andreasen  -Silvia Costa |  | ‘New’ Water level product specification to ‘re-insert’ the information removed from initial S-104. |
| F.1 | Liaise with S-100WG on water level and current  matters relevant to ECDIS applications | H |  | - | Permanent | O | -Chris Jones  -Zarina Jayaswal  -Raphael Malyankar  -Greg Seroka |  | Joint project team is established as required. |
| G.1 | Liaise with industry experts on the development of product specifications for  water levels and currents | H |  | - | Permanent | O | -All |  |  |
| H.1 | Maintain an inventory of water level gauges and current meters used by Member States and publish it on the IHO/TWCWG web  site. | H |  | - | Permanent | O | -All |  | Initial inventory from TWCWG members available on IHO web site. |
| I.1 | Review and maintain the Actual Tides and Currents On-Line links as published on the IHO/TWCWG  Website. | L |  | - | Permanent | O | -All |  |  |
| J.1 | Maintain and extend the relevant IHO standards, specifications and publications. | M |  | - | Permanent | O | -Chris Jones\*  -Ruth Farre  -All | S-44  C-13  S-104  S-111 |  |
| J.2 | Maintain IHO resolutions & Charting Specifications. | H |  | - | Permanent | O | -Ruth Farre\*  -All | IHO Resolutions in M-3 | Review the relevant Resolutions and Charting Specifications annually |
| J.3 | Liaise and collaborate with HSWG to review and amend relevant sections of S-44. | L | Edition 6.3.0 | May 2024 | October 2025 | P | -Fernando Oreiro  -Zarina Jayaswal)  -Felipe Rodrigues Santana  -Phil MacAulay  -Jyrki Moronen  -Chris Jones  -Carl Kamerer  -Hilde Sande Borck | S-44  C-13  S-104  S-111 | Propose amendments to improve water level and surface currents observation uncertainty standards within the relevant sections of S-44.  Review S-44 in accordance with maintenance and publication schedule. |
| L.1 | Develop and maintain material for CB course on Tides and Tide gauges | H |  | - | Permanent | O | -Ruth Farre\*  -Peter Stone  -Zarina Jayaswal  ~~-Gwenaële Jan~~  **~~-~~**Cesar Borba |  | Adapt currently available course material to create a course suitable for delivery in support of CBSC requests |
| M.1 | Review and maintain the List of Chart Datums (CD) in use by Member States | L |  | - | Permanent | O | -Chris Jones\*  -Peter Stone  -Sam Harper  -All |  | Maintain a reference list of vertical Chart Datums in use globally by Hydrographic Offices relating to their national charting / tidal & water level products and services. |

**Meetings (Task K)**

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| **Date** | **Location** | **Activity** |
| 25-29 April 2016 | Niterói, Brazil | TWCWG-1 |
| 8-12 May 2017 | Victoria, Canada | TWCWG-2 |
| 16-20 April 2018 | Viña del Mar, Chile | TWCWG-3 |
| 8-12 April 2019 | Busan, Republic of Korea | TWCWG-4 |
| 16-18 March 2021 | Remote VTC | TWCWG-5 |
| 5-7 April 2022 | Remote VTC | TWCWG-6 |
| 28 February – 2 March 2023 | Remote VTC | TWCWG-7 |
| 20-~~23~~ 22 February 2024 ~~(tbc)~~ | ~~Monaco, IHO~~ Remote VTC | TWCWG-8 |
| 19-22 November 2024 (tbc) | Monaco, IHO | TWCWG-9 |

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