**17th South West Pacific Hydrographic Commission Meeting (SWPHC17)**

**12-14 February 2020 – Wollongong, Australia**

**Draft Minutes**

**1. Opening**

**1.1 Opening Remarks by the Chair**

The SWPHC Chair and Hydrographer of Australia, Commodore Fiona Freeman, welcomed all the delegates to the 17th SWPHC Meeting. The regional Commission has a strong reputation for being proactive, delivering practical awareness and supporting capacity building. She emphasised the importance of the deliberations at these forums in sharing of information and experiences, as well as networking among the participants. Commodore Freeman added that there is a busy and comprehensive agenda to work through in the coming days; she looked forward to a collaborative and engaging meeting and encouraged all to participate as actively as possible.

**1.2 Address by the IHO**

Mr Abri Kampfer (Director IHO) stated that Regional Hydrographic Commission (RHC) meetings continue to increase in importance as they exercise an increasingly active role in the overall planning, execution and assessment of the IHO Work Programme as it relates to their regions and in the development of the IHO Strategic Plan.

He welcomed Samoa and Solomon Islands as new IHO Member States. Their joining has now increased the total number of IHO members to 93 and raised the status of the SWPHC as one of the larger RHCs.

The meeting offers the opportunity to assess the regional situation and to identify the key priorities, keeping in mind that the traditional roles of Hydrographic Services are changing. There is not only a requirement to produce products but all hydrographic data should also be made available to an audience that is much greater than our original clients. There is a need for coordination, communication, cooperation and to find agreement on key priorities that can be feasible for all.

It was pleasing to observe increasing involvement of hydrographic industry, academia and maritime organizations in the RHC meetings.

Mr Kampfer thanked the Government of Australia, and particularly Commodore Freeman and her most capable team, for their willingness, enthusiasm and professionalism to organize this event and to all those that have been involved in the detailed preparation of this meeting.

**1.3 Administrative Arrangements**

Ms Hilary Thompson provided the meeting participants with the required housekeeping details.

The Chair invited all delegates to introduce themselves.

The Secretary, Mr. Jasbir Randhawa, requested participants to review and confirm the [List of Participants](http://www.iho.int/mtg_docs/rhc/SWPHC/SWPHC13/SWPHC13-01d-List_of_Participants.pdf) and provide any updated/additional information. (*doc. SWPHC17-01B*)

**2. Agenda and Timetable approval**

The Chair introduced the Draft Agenda and [Timetable (*doc. SWPHC17-02*)](http://www.iho.int/mtg_docs/rhc/SWPHC/SWPHC13/SWPHC13-01b-Timetable.pdf). Members were invited to comment and adopt the documents. The Chair stated an additional item ‘Disaster Preparedness and Response (in accordance with IHO Resolution 1/2005)’ would be included as a back-brief from the workshop held prior to the meeting. As there were no additional items proposed for discussion, the meeting adopted the agenda and timetable.

**3. Approval of Minutes of SWPHC16 Meeting**

The draft minutes of SWPHC16 had been circulated to the participants earlier. As no comments were received these were adopted as the approved (final) version.

Decision 1: to approve the Minutes of SWPHC16 (*doc. SWPHC17-03*).

**4. Matters arising from Minutes of SWPHC16 Meeting**

Referring to the List of Actions from SWPHC16 (*doc. SWPHC17-04*) the Chair stated that some of the action items were completed and the remaining were ongoing issues which will continue to be discussed at the Commission meetings and actioned as appropriate.

The Secretary and action owners provided updates on the status of the actions as indicated below.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Agenda Item** | **Action** | **Responsible** | **Deadline** |
| 1 | 5.1 | to consider providing CATZOC methodology/practices to DQWG | New Zealand | DONE |
| 2 | 5.1 | to respond to IHO CL 11/2019 (Annex B) indicating whether they support CSB activity within their waters of national jurisdiction  | Members | DONE/Ongoing |
| 3. | 5.1 | to liaise with IALA and SPC to encourage coastal States that are not yet Members to join the SWPHC | Chair | permanent |
| 4 | 5.1 | to consider identifying opportunities in national/regional/international donor agencies to incorporate hydrography in development projects. | All members | permanent |
| 5 | 5.1 | to review their entries in the IHO Yearbook and C-55 and to provide the IHO Secretariat with the appropriate updates or to report no change.  | All members | permanent |
| 6 | 5.1 | to consider submitting papers for publication in the International Hydrographic Review | All members | permanent |
| 7 | 5.4 | to look into establishing regional MSDI WG | ChairVice-Chair | SWPHC17(agenda item 5.4) |
| 8 | 6.2 | to review the SWPHC Statutes after adoption/outcome of the Proposed Amendments to the IHO Resolution 2/1997, as amended. | Members | SWPHC17(agenda item 6.2) |
| 9 | 7 | to consult the IHO Technical Visit Reports to Vanuatu (2011 and 2015) to motivate the establishment of a hydrographic capability as recommended in reports. | Vanuatu | SWPHC17(agenda item 7.10 ) |
| 10 | 7 | to provide IHO Secretariat with suitable contact details to assist in negotiations with IALA  | Vanuatu | DONE |
| 11 | 10.2 | to search for hydrographic data that can be made publicly available  | All members | ONGOING |
| 12 | 10.3 | to provide CB requests to the CB Coordinator | All members | DONE |
| 13 | 10.3 | to compile the SWPHC requests for support and submit to the CBSC16 in coordination with the Chair | CB Coordinator | DONE |
| 14 | 11 | to consider holding SWPHC ICCWG meeting within the margins of next Commission meeting.  | SWPHC ICCWG Chair | DONE(WG met during  |
| 15 | 11 | to update the ToRs and Procedures of SWPHC ICCWG based on latest edition of S-11 Part A Edition 3.1.0 (2018) | SWPHC ICCWG Chair | DONE |
| 16 | 12 | to check with AMSA re national report templates in respect of NAVAREA X | Chair | SWPHC17(agenda item 7.10 ) |
| 17 | 12 | to coordinate with NAVAREA XI Coordinator in relation with countries in the SWPHC | USA Indonesia | DONE |
| 18 | 13.2 | to provide a presentation on the AHSCP Certification Scheme at SWPHC17 | Australia | SWPHC17(agenda item 13.3 ) |
| 19 | 14 | to comment on Resolution1/2005 as amended and provide to Chair prior to forwarding it to Japan. | All membersChair | DONE |
| 20 | 15 | to provide input to Chair for inclusion in the SWPHC Report to C3  | MembersChair | DONE |
| 21 | 17 | to coordinate with coastal States re connection of tide-gauge bench marks with the land levelling datum | SPC | SWPHC17Ongoing |
| 22 | 17 | to review Resolution 2/1997 as amended and provide comments to Chair | All members Chair | DONE |
| 23 | 17 | to consult with their IMO representatives to lobby IMO Technical Cooperation Committee (TCC) the need for hydrographic survey projects in the region | Members | SWPHC17Ongoing |
| 24 | 17 | to liaise with IMO Technical Cooperation Officer at SPC to lead on drafting and submission of paper to IMO TCC re supporting training for hydrography in the region  | coastal StatesSPC | SWPHC17Ongoing |

Participants updated the action list and agreed on the following:

**Action 1: Chair to liaise with IALA and SPC to encourage coastal States that are not yet Members to join the SWPHC. (permanent)**

**Action 2: All members to consider identifying opportunities in national/regional/international donor agencies to incorporate hydrography in development projects include ‘Response to Disasters’ as a standing agenda item for SWPHC conferences. (permanent)**

**Action 3: All members to review their entries in the IHO Yearbook and C-55 and to provide the IHO Secretariat with the appropriate updates or to report no change. (permanent)**

**Action 4: All members to consider submitting papers for publication in the International Hydrographic Review. (permanent)**

**5. IHO Matters**

**5.1 IHO Secretariat Report**

Mr Abri Kampfer (IHO Director) provided the IHO Secretariat Report ([*SWPHC17-05.1*)](http://www.iho.int/mtg_docs/rhc/SWPHC/SWPHC13/SWPHC13-04.1-IHB_Report.pdf)to the meeting, highlighting the activities that may impact the work of the SWPHC. These included:

3rd Meeting of the IHO Council

The third meeting of the Council (C-3) was held in Monaco during October 2019 and the important items discussed were the IHO Strategic Plan, Crowdsourced Bathymetry (CSB), S-100 and capacity building. The Council has brought new vigour to the intersessional operations of the IHO. The summary report of the meeting is available on the IHO website at <https://iho.int/en/3rd-council-meeting-2019>.

S-100 Progress

S-100 Edition 4 was released in December 2018. Majority of the product specifications are based on Edition 4. A project team chaired by Mr Nick Lemon (Australian Maritime Safety Authority) did excellent work in producing S-129 Under-keel Clearance Management System Edition 1.0.0 which was released for testing in May 2019.

Testbed Projects were carried out in 2019 – by Korea Hydrographic and Oceanographic Association (KHOA) and Naval Information Warfare Center (NIWC), USA.

IHO Secretariat operations

INToGIS II – Renewal of INToGIS Service interface resulted in a big improvement on the previous service – much more additional services, more user-friendly to identify ENC gaps and ENC overlaps,

as well as the Web catalogue available to the general public.

Online Voting

Member States are now able to submit their information directly from IHO Online form system. It is used for CL voting and IHO publications C-55 and P-5 (Yearbook) updating. The use of the online forms for Circular Letters represents now nearly 70% of the votes and responses.

Social Media, New Website, New Corporate Design

The Secretariat is now active under LinkedIn, Facebook, Twitter and YouTube.

New IHO website has been in operation since 20 December 2019.

A new corporate design has been incorporated in the publications.

Publicity and Outreach

World Hydrography Day 2020: Theme "Hydrography - enabling autonomous technologies"

International Hydrographic Review

IHO Centenary Celebrations (IHO-100) in 2021. Activities leading up to this event include:

– IHO Prestige book project: “100 years of international cooperation in hydrography”

– *Historic Nautical Charting and the Mediterranean* – Exhibition at Monaco Yacht Club

Monaco, April 2019

– Symposium “*Historical Approach for Measurements and Protection of Oceans and World Waters’’* to be held at the Oceanographic Museum of Monaco, 21 June 2019

– Second IHO Assembly, Monaco, April 2020:

* Special session about the history of the Organization
* New approach for the chart exhibition – science on a sphere

– Peak event back to back with IRCC annual meeting, Monaco, 21 June 2021

- “100 years of international cooperation in hydrography”

- Consider a submission to the UN General Assembly session of 2021:

- Commitment of IHO to Sustainable Development Goals through improved provision of hydrographic knowledge (?)

Decision 2: to note the IHO Secretariat Report (*doc. SWPHC17-05.1*)

**5.2 Outcome of the 3rd Meeting of the IHO Council (C-3)**

Rear Admiral Shepard Smith (Chair, IHO Council) reported as follows (*doc. SWPHC17-05.2*):

The 3rd Meeting of the IHO Council (C-3) was held in Monaco on 15-17 October 2019. It was attended by 38 Member States (including MS Observers). Participants from the region were Australia, France, UK, USA and Indonesia)

The key agenda items were:

* Strategic Plan (SP)

– The revised SP was brief, concise, readily understood and relevant. It will be submitted to the Assembly (A2) for adoption.

* S-100 Implementation Strategy & Roadmap

– Recognition that HOs are providing services using the approved Standards that are now available. These services need to be coordinated. The Council has endorsed the framework for a roadmap for providing the S-100 based services over the next decade. It will be a living/fluid document annually maintained involving the Council Chair, IRCC, HSSC, IHO Secretary-General for engagement, production and capacity building. IMO will be consulted on carriage requirement, transition to S-101 charts, etc.

* Hydrographic Interest (HI)

– HI currently defined as “tonnage” and is explicitly used to determine 1/3 of the Council seats. There is provision in the IHO General Regulation for this definition to be reconsidered no later than the second Assembly (A2) meeting. An alternative definition proposed by Uruguay was discussed but not endorsed, and Council recommended that MS put the proposal to the Assembly.

* S-100 Showcase and Seabed 2030 to be highlighted at the Assembly (A-2)
* IHO Innovation & Technology Laboratory (proposal by Singapore)

– IHO will be involved in the governance and prioritisation of the work at the Centre

* Council 4-6 Main Theme Proposed

– Recommend to the new Council, which will be formed after the next Assembly (A-2), that its main focus should be *“The effective implementation of the Revised Strategic Plan considering application of the principles of ISO 9001”*

Decision 3: To note the Report of the 3rd meeting of the IHO Council (*doc. SWPHC17-05.2*)

**5.2A Strategic Plan Review Working Group (SPRWG) Report**

Rear Admiral Laurent Kerleguer provided a brief overview of the work carried out by the SPRWG *(SWPHC17-05.2A).*

He outlined the challenges in the context of the IHO and the Member States HO activities, i.e.:

* Growing needs, for increasingly diversified customers
* Rapid progress in technology
* Data issue, transforming the hydrographic ecosystem
* Increasing attention to the Ocean (UN Agenda 2030 Sustainable Development Goal)
* Biodiversity Beyond National Jurisdiction

There 3 strategic goals encompassing 9 strategic targets for 2021-2026 are:

(i) Evolving the hydrographic support for safety and efficiency of maritime navigation, undergoing profound navigation

(ii) Increasing the use of hydrographic data for the benefit of society

(iii) Participating actively in international initiatives related to the knowledge and the sustainable use of the ocean.

Fifteen Strategic Performance Indicators (SPIs) associated with the 9 targets were presented to the IHO Council meeting (C3) last October. The Council will submit the Revised Strategic Plan (SP) at the Assembly (A2) in April 2020 for MS approval. Following this the Secretary-General will be tasked to align the 2021 and 3-year IHO Work Programme with the Revised Strategic Plan.

SPRWG to submit SPIs and corresponding calculation methods to the Council 4, for approval or endorsement.

The Council welcomed USA’s proposal to prepare a draft pamphlet transcription of the draft strategic plan to make it easy to understand and for submission to A2. The final version of the SP as approved by the Assembly will be validated by C4 in October 2020.

Decision 4: To note the IHO SPRWG Status Report (*doc. SWPHC17-05.2A*)

**5.3 11th Meeting of the Inter-Regional Coordination Committee (IRCC11)**

5.3.1 The Chair provided a brief on IRCC11 Meeting that was held in Genoa, Italy in early June 2019 (*doc.* *SWPHC17-05.3*).

Commodore Freeman attended the meeting as Chair of SWPHC and reported on the activities undertaken in the region over the preceding twelve months. The IRCC noted the report as well as the success of the CB related workshop associated with the SWPHC meeting.

The outcomes of the IRCC11 included a number of actions that apply specifically to or have relevance to the RHCs, as follows:

|  |  |  |
| --- | --- | --- |
| **No.** | **Action** | **Status** |
| 1 | to confirm/update the representatives to the IHR Editorial Board | Any member interested to take up this role to contact the Chair in order for her to inform the IHR Editor |
| 2 | to request MSI National Coordinators to review the contents of the relevant Annexes of the GMDSS Master Plan and of section C (MSI) of IHO Publication C-55 – Status of Hydrographic Surveying and Nautical Charting Worldwide – to ensure consistency for their national entries (7b). | DONE |
| 3. | to consider the tasks listed as duties for the Regional Seabed Coordinator/Mechanism (doc. IRCC11-07I3) and to include Seabed 2030 in RHC work plans and reports to IRCC (7i)  | Discussed during the presentations on Seabed 2030 (Agenda Item 9.3 & 9.4) |
| 4 | to provide reports to A-2 to the IHO Secretariat in accordance with the Action C2/53 (8a)  | DONE |
| 5 | to invite Members to make comments and suggestions to the Secretary of the S-100 services roadmap drafting group (Council Chair, RAdm Smith, shep.smith@noaa.gov) (8f)  | DONE |

Asst. Director Alberto C Neves informed that the IHR Editorial Board is a group of representatives from RHCs that support the Editor in the identification of articles, notes, items of relevance, etc. Hence it is an opportunity for each Region to contribute its showcase, achievements, challenges, etc.

Decision 5: To note the SWPHC Report to IRCC11 (*doc. SWPHC17-05.3*)

**Action 5: Chair to identify regional representative on the International Hydrographic Review Editorial Board.**

**5.4A Hydrographic Services and Standards Committee (HSSC) Report**

Mr Kampfer (HSSC Secretary) provided a brief on the HSSC11 Meeting that was held in Cape Town, South Africa in May 2019. (*doc. SWPHC17-05.4A*)

The key priorities identified at HSSC11 were:

* Operational/Strategic level
* Resolution 2/2007 as amended
* S-100 Implementation Strategy
* Future of Paper charts

• Technical level

- Demonstration showcase of S-100 based products

- Development of the S-1xx Product Specifications and operationalization of S-1xx framework

- Priorities of IHO 2019 Work Plan 2

- Hydrographic Dictionary S-32

HSSC endorsed IHO Resolution 2/2007 as amended - *Principles and Procedures for Making Changes to IHO Technical Standards and Specifications*. Itwas then referred to and obtained endorsement at IRCC11. Subsequently it obtained approval of the MS. (CLs 32 and 46 of 2019).

The sales and use of Paper Charts (PC) is declining. The Nautical Chart Working Group (NCWG) drafted a document about PC’s future and received preliminary comments from HOs. Feedback from MS was sought through CL 29/2019, and it is hoped that the final version will be approved in 2020.

A big challenge is reallocating the resources currently dedicated to traditional paper chart. The ultimate goal is to fully automate the creation of paper products from fully populated ENC vector databases.

The priorities of IHO 2019 Work Plan 2 included:

* Develop an S-100 interoperability specification
* Develop S-121 Product Spec for Maritime Limits and Boundaries
* Develop all the components needed to make S-101 a reality
* Consolidation and clarification of standards in relation to ECDIS/ENC
* Prepare Ed. 6.0.0 of S-44
* Consider data quality aspects in harmonized way for all S-100 based PSs

Decision 6: To note the HSSC Report (*doc. SWPHC17-05.4A*)

**5.4B Worldwide ENC Database Working Group (WENDWG)**

Rear Admiral Shepard Smith provided an update on the activities of the WENDWG on behalf of the WG Chair, Mr John Nyberg. (*doc. SWPHC17-05.4B*)

Achievements during the last year included:

* Continued work on RENC Harmonization to ensure reasonable interoperability between the various RENCs. A new East Asia RENC – EAHC Regional ENC coordination Center was established in Hong Kong.
* Commenced work on drafting the Worldwide Electronic Navigation Services (WENS) Principles
* Continued improvement of coverage and overlap management
* Continued to improve IHO ENC Catalogue. (Functionality to include actual cell coverage & AIS density)

The WENS Principles intend to shift focus from ENC to comprehensive (S-100) suite of services. The WENDWG formed a drafting group and submitted a progress report to IRCC11 and Council C3. WENS still encourages data availability anywhere in the world, distribution through compatible and coordinated networks, standardization, authority of service, and data protection. It also addresses the avoidance of service duplication, coordinated data management, quality management, and assistance and training. The latest version is available on the WENDWG page of the IHO website – see Annex 2 of WENDWG10-04.2A.

Decision 7: To note the WEND Report (*doc. SWPHC17-05.4B*)

**5.4C Marine Spatial Data Infrastructures Working Group (MSDIWG)**

5.4.1 Mr Alberto C Neves provided a brief on the MSDIWG10 Meeting held in Busan, Republic of Korea on 1-5 March 2019(*doc. SWPHC17-05.4C*).

The meeting was followed by meetings of the OGC Marine Domain WG and the UN-GGIM Working Group on Marine Geospatial Information (WGMGI). This model of holding back-to-back meetings of the three WGs has proven very fruitful – i.e. the MSDIWG focusses on the guidance to HOs on use of hydrographic information; OGC supports with the standards and guidance. UN-GGIM is the high level strategic and political level that is influential in securing funding for capacity building to assist developing countries to implement MSDI.

Denmark and the Republic of Korea (RoK) assist in MSDI training and e-learning. Course. RoK has funded development of a video on MSDI communication and dissemination - <https://www.youtube.com/watch?v=5m15KBhd9v0>

Work is also ongoing to develop publication C-17 (Spatial Data Infrastructures: “The Marine Dimension” – Guidance for Hydrographic Offices) into a live document. The ToR have been amended to include marine spatial planning besides MSDI.

RHCs have been encouraged to establish MSDI Working Groups and also nominate RHC MSDI Ambassadors to promote MSDI and to help Member States to prepare the national reports with respect to the status of MSDI.

The main challenges for the MSDIWG are:

* Raising awareness of the importance of MSDI,
* Providing training and education to support MSDI development at the Member State and RHC levels.

5.4.2 The establishment of the SWPHC MSDIWG had gained some momentum since the last meeting. Mr Paul Sliogeris (AHO) stated that nominations had been received from a number of Member States to participate in the regional WG, as follows:

Australia (Paul Sliogeris – AHO Director Maritime Data Infrastructure

France (Yves-Marie Tanguy - SHOM's new Head of Pacific Survey Unit)

New Zealand (Rachel Gabara - LINZ NZHA Manager Hydrographic Data and Products)

PNG (Nicholas Pion - Hydrographer, PNG)

UK (Steve Druce - Geographical Technical Manager, UKHO)

USA (Sarah Orantes)

.

The WG would now prepare draft ToR and RoP and seek volunteers for Chair and V Chair among the members. Mr Sliogeris would initiate this task through correspondence.

**Action 6: SWPHC MSDIWG through correspondence prepare draft ToR and RoP and seek volunteers for Chair and V/Chair among members.**

Decision 8: To note the MSDI Report (*doc. SWPHC17-05.4C*)

**6. Membership and Statutes**

**6.1 SWPHC membership and IHO membership**

The meeting reviewed the status of the SWPHC membership (*SWPHC17-06.1*). On behalf of the Commission and the IHO, the Chair and Director Kampfer congratulated Samoa and Solomon Islands who had become IHO members. There were now a total of 11 Members and 6 Associate Members in the SWPHC.

**6.2 SWPHC Statutes**

6.2.1 The SWPHC Statutes were last amended at the SWPHC15 Meeting held in Fiji in 2018 to include some minor changes. (doc. *SWPHC17-06.2*)

France (SHOM) had suggested some amendments to the current Statutes to reflect the potential changes that would result from the upcoming Assembly (A-2)’s adoption of IHO Resolution 2/1997 as amended, pertaining to the relationship between the IHO as an organisation and the regional commissions. Rear Admiral Kerleguer briefed the meeting on the document that had been circulated to members. (*doc. SWPHC17-06.2A*)

6.2.2 Discussions dwelt on the following:

* Process for streamlining selection of the Commission representative(s) to the IHO Council There was need to cater for the future when the SWPHC may be allocated more than 1 seat (due to increased number of IHO MS in the region). United Kingdom and USA stated that, as the South Pacific is a large area with different cultures and views on the ocean, there might be merit in considering a two-tiered voting procedure in order to get a good geographic balance in the representation. As an example, one seat could be for a Primary Charting Authority (PCA) and one for a non-PCA.
* Procedures for establishing committees and working groups

Members agreed to remove the last sentence in Item (8) highlighted in yellow, i.e. “The procedures for establishing these committees and working groups should be detailed here.” Its inclusion would be considered as being too prescriptive.

It was agreed that following adoption of Resolution 2/1997 at the Assembly the Chair would circulate the draft amended version of the Statutes for comments by Members. Comments received will be collated and circulated, and the revised Statutes adopted prior to SWPHC18 Meeting.

**Action 7: Chair to circulate the draft amended version of the SWPHC Statutes for comments by the Members. (post adoption of Resolution 2/1997 at A-2).**

**Members provide comments to Chair for collation and adoption prior to SWPHC18.**

**7. National Reports**

**7.1 Australia**

CDRE Fiona Freeman provided a summary of [Australia’s national report](http://www.iho.int/mtg_docs/rhc/SWPHC/SWPHC13/SWPHC13-06a-National_Report_Australia.pdf) (*doc. SWPHC17-07A*). The Australian Hydrographic Office (AHO)’s key focus areas since the last meeting included establishing a new data collection capability using a combination of industry and Defence assets, as well as a major review into future charting requirements, implementing the results of that review, and establishing new systems support arrangements.

Formal commencement of the HydroScheme Industry Partnership Program (HIPP) will occur with the signing of deeds with industry partners on 26 February 2020. The first survey will be contracted out and completed by end of the financial year (30 June 2020). Phase One of HIPP covers the period 2020-2024 - concentrating on bathymetry collection and focussing on the Australian coastal areas.

Survey activities using RAN hydrographic vessels and Laser Airborne Depth Sounder (LADS) were carried out along various parts of the Australian coast, as well as in Papua New Guinea and Solomon Islands waters. A RAN ship also conducted a cooperative hydrographic survey in Nuku’alofa with survey personnel from Tonga.

The AHO has carried out a review of the future charting requirements, including covering the need and demand for High Density bathymetric ENCs - specifically for ports. Rationalising of the whole paper chart portfolio is in progress and has identified a significant number of charts that can be removed. The resources linked to maintaining these can then be diverted to ENCs and future charting requirements. A review of the INT Chart portfolio is currently underway.

Rebranding of the PNG charts (using prefix PNG) is in progress and this activity also ensures that latest survey data is included and all current chart specifications are met. A new chart of Solomon Islands (SLB108 – Vanguna Island – Mbili Passage to Hele Bar) was published in July 2019. Tide tables for 2020 were published in late 2019 for Australia (including Solomon Islands and Papua New Guinea) and a separate publication for Solomon Islands. From 2021 it is intended to have the Papua New Guinea National Tide Tables as separate publication.

Planned activities in 2020 from the Australian Hydrographic Service perspective are:

* RAN technical visit to Fiji
* Visits to Papua New Guinea, Solomon Islands and New Caledonia (Noumea). Survey activities will be undertaken on an opportunity basis in PNG and Solomon Islands based on consultations with the authorities there.

The RAN Hydrographic School located in Sydney had been renamed the Maritime Geospatial Training Centre (MGTC). It now encompasses Military Meteorological Training besides the Hydrographic Surveying Training. The H2 (Category B) Course in 2019 included graduates from Indonesia, Malaysia and New Zealand.

As part of its PCA responsibilities, the AHO has annual meetings with PNG and Solomon Islands during the August-September period.

There will be a number of events held in 2020 to celebrate the 100th Anniversary of the Australian Hydrographic Service.

**7.2 Fiji**

Lieutenant-Commander Gerard Rokoua presented [Fiji’s national report](http://www.iho.int/mtg_docs/rhc/SWPHC/SWPHC13/SWPHC13-06b-National_Report_Fiji.pdf) (*doc. SWPHC17-07B*) outlining the activities since the last SWPHC meeting.

The Fiji Hydrographic Services (FHS) hydrographic and nautical cartographic staff included 3 Cat “A” Hydrographic Surveyors, 9 Cat ‘B’ Hydrographic Surveyors, 5 Cat ‘B’ Nautical Cartographers and a number of Survey Recorders. The current organisation chart comprised the Administration, Hydrographic Survey and Cartographic Sections. The plan is to expand it over the next 2-3 years to include Oceanography and Data Management Sections.

The survey platforms comprise:

- RFNS Kacau (45-metre catamaran) donated by the Peoples Republic of China in 2018

- RFNS Volasiga donated in 2019 by Republic of Korea as part of the IFHO-KHOA ODA Project

Equipment on board both vessels include Multi-beam Echo-Sounders, Side Scan Sonar and Sub-Bottom Profilers.

In addition there is SMB Ika Vuka which supports the Deployable Survey Team.

A number of joint surveys (FHS-KHOA) were carried out during the last 2 years and it is planned to have 8 new charts published by the end of 2020. The survey areas included cruise ship destinations, e.g. Approaches to Yasawa Bay, Malolo and Denarau Island.

Two Tide/Weather Stations were established, funded by KHOA - Labasa in the north and Levuka in the east. There are another 3 stations - Bureau of Meteorology Australia (2 in south and west), Fiji Meteorological Service (1 in north-west). The information will be useful to monitor sea-level rise. Work is also being carried relating to the Local Geodetic Datum Change Project – moving from WGS72 to WGS84.

The work plan for the next 5 years include:

* Formation of NHCC
* Renewal of ODA Project MOU
* Establish Oceanographic and Database Management Capability
* Reduction of ping to chart down time.
* Installation of permanent tide gauges in secondary ports in support of sea level rise monitoring and tidal modelling.
* Up skilling of current FHO staff.
* Conduct of Hydrographic survey in priority unsurveyed areas.
* Geospatial Marine Database

The Fiji Government and Australasian Hydrographic Society (Mr John Maschke) played key roles in the expansion of the FHS over the years – from 8 ‘old’ surveyors in 2010 to a staff 31 hydrographic surveyors and nautical cartographers trained to international standards.

On behalf of the Commission, the Chair congratulated Fiji on the remarkable progress made by the FHS and added that the information could be shared with other nations in the region to benefit their future plans.

**7.3 France**

Mr Yves-Marie Tanguy summarised France’s report on its areas of hydrographic and charting activity in the SW Pacific (*doc. SWPHC17-07C*).

SHOM’ Pacific Survey Unit (GOP) carried out numerous surveys in the SW Pacific in support of maritime surveillance, commercial and cruise activities. The switch to an all-MBES capacity in New Caledonia made it possible to speed up the conduct of several surveys of ports, bays, recommended tracks and passages there. The hydrographic unit in Papeete will be equipped with portable MBES later this year (2020).

Since the last meeting the charting activity completed includes a total of 41 new ENC cells, 5 new/limited editions of INT charts, 1 new (chart) and 14 new/limited editions of the National charts.

Bathymetric datasets collected in international waters are provided regularly to for integration in the GEBCO products. Data from waters under French jurisdiction are accessible online:

<http://diffusion.shom.fr/pro/amenagement/bathymetrie/lots-bathy.html>

Distribution of coverage survey polygons along with associated metadata on the IHO DCDB website, is achieved through the EMODnet Bathymetry WFS web service.

MSDI information is available on various portals, as follows:

SHOM’s maritime and coastal geographic information (regularly updated with new products, services)

<https://data.shom.fr> and <https://diffusion.shom.fr>

French maritime limits

<https://limitesmaritimes.gouv.fr> and <https://maritimelimits.gouv.fr>

New national portal to facilitate the sharing and dissemination of data on the marine environment (Marine Environment Information System – SIMM)

<https://www.milieumarinfrance.fr>

Extension to overseas territories will be implemented in the future.

The future plans include reinforcement of the survey team based in Papeete (French Polynesia) - MBES equipment + 2 Category B surveyors (and possibly 1 Category A). An Overseas Patrol Boat with hydrographic capacity, equipped with a Travocean moonpool, is also planned for the end of 2022. A few SDB and Lidar projects have been identified for survey areas in New Caledonia and French Polynesia. Renovation/Upgrading of SHOM’s tide gauge network in the Pacific will commence at end of 2020.

The main challenges are:

* The means of acquisition at sea in French Polynesia remain limited in view of the size of the area and of the logistical constraints linked to the projection of teams and equipment
* The maintenance of the French tide gauge network in the Pacific remains a challenge - i.e. funding to sustain it.

Rear Admiral Laurent Kerleguer invited the meeting participants to Paris on 19th November 2020 to celebrate the 300th anniversary of French hydrography. (<https://www.shom.fr/fr/300_ans>)

**7.4 New Zealand (NZ)**

Mr. Stuart Caie presented New Zealand’s national report (*doc. SWPHC17-07D*). There was considerable progress with surveys and charting nationally as well as in the region through the NZ Aid programme ‘Pacific Regional Navigation Initiative (PRNI)’.

Surveys were carried out Fiordland, Western Marlborough Sounds, Cavalli Passage and Napier. In Samoa MBES surveys were conducted in areas identified through the Hydrographic Risk Assessment done earlier.

New charts for Tonga and Niue will be published from March 2020 onwards based on comprehensive SDB, ALB and MBES carried out in 2017 and 2018. These include 3 new charts to replace 5 ‘fathoms’ charts in Tonga, and a new chart for Niue. Chart INT 628 (Cook Islands) was published in August 2019.

From March 2020 LINZ will be rebranding paper charts and ENCs – i.e. introducing new country-specific prefixes and new numbers to the Pacific charts that NZ maintains and publishes. The intention is to give Pacific island nations more ownership of nautical charts in their region and make it easier for users to identify the charts they need.

Mapping NZ 2025 is a 10-year programme of work to ensure seamless mapping from the top of Āoraki/Mt Cook (NZ’s highest peak) to the edge of the continental shelf. This will be carried using a variety of technologies and methodologies across the land, intertidal zone and sea. The main components are:

* Collecting topographic LiDAR to improve the national Digital Elevation Model
* Mapping the coastal zone
* Improving bathymetry – national hydro programme + other activities

NZ is the Seabed2030 Regional Data Assembly and Coordination Centre (RDACC) for the South and West Pacific Ocean. It operates the South and West Pacific Data Assembly Centre (SaWPac) which is run jointly by NIWA/GNS/LINZ. The second batch of data from SaWPac was delivered to the Global GEBCO data centre in October 2019.

Work is also being carried out to establish what data has been collected within NZ’s EEZ on marine science research vessels. To date 57 research vessels have been identified (from 2012) and 52 reports or datasets received by NZ.

LINZ is leading and coordinating the NZ marine geospatial community in the development and adoption of appropriate data principles for marine geospatial information (MGI). The NZ Marine Geospatial Working Group (NZMG-WG) has developed a national work programme and is working collaboratively on the following priority projects:

* Build a national data inventory of available NZ MGI
* Identify and agreed metadata standards for NZ MGI
* Setup communication channels for the NZ MGI community
* Review NZ MGI data portals

In October 2019 LINZ and Marlborough District Council were the winners of the NZ Spatial Excellence Award for Environment and Sustainability in recognition of the partnership in surveying Queen Charlotte Sound/Tōtaranui.

Two papers were submitted to the IH Review – one on high-density ENC prototype (jointly with AHO and CARIS), and another on Risk Assessment methodology in Trinidad & Tobago (co-authored with IALA).

The main challenges and/or obstructions are:

Recruiting qualified and experienced staff

Resourcing to maintain current level of engagement in SWP - competing LINZ priorities

Move to S-100 Universal Hydrographic Data Model

Rear Admiral Peter Sparkes commented that UKHO had recently developed a new coastline mapping capability that utilises the overlay of SDB high definition imagery and Synthetic Aperture Radar (SAR) to enable better mapping of the inter-tidal zone. Details are available from the UKHO.

**7.5 Papua New Guinea (PNG)**

Mr Nick Pion summarised the national report for PNG (*doc. SWPHC17-07E*)*.* The ADB-funded Maritime & Waterways Safety Project (MWSP) had been completed and the present focus was on capacity building.

The surveys carried out by Fugro under ADB program were submitted to AHO and used to update approx. 30 charts. The RAN Survey Motor Launch MERMAID surveyed Kitava Island. NMSA contracted service (EOMAP) for SDB survey of Nukumanu Islands and Tauu Islands. These remote islands are located outside the current chart series and form part of the territorial sea baselines.

The AHO commenced rebranding of PNG charts from ‘AUSxxx’ prefix to ‘PNGxxx’ in early 2019. A total of 29 new edition paper charts (out of 78) were published by the end of 2019.

NMSA as the national coordinator has established MRCC and works closely with AMSA to improve MSI capabilities and deliver long range MSI capability via NAVAREA X Coordinator (Australia).

Capacity Building activities carried since the last meeting included:

NMSA sponsored training

* One officer attended Australian Tides Workshop in May 2019 in Adelaide, Australia.
* One officer attend IALA Level 1 AtoN Manager Course in China, Sep 2019

External funded training

* Commonwealth Marine Economies (CME) Programme funded two officers to attend the Hydrographic Awareness Seminar, hosted by UKHO, 11-15 Nov 2019.

A Hydrographic Development Plan had been prepared, outlining the following:

* NMSA management approves revised organization structure recognizing hydrography with increase of hydrographic staff to 7
* Proposed development plan for hydrography commenced with visits to the AHO and AMSA in August 2019 by 3 senior officials.
* The Plan aims to support the National Transport Strategy/Medium Term Transport Plan
* Further consultation underway with stakeholders and industry partners in 2020 to improve hydrographic governance.
* Australia-Papua New Guinea Transport Sector Support Program (TSSP) providing support to hydrographic capacity building

**7.6 Solomon Islands**

Mr Tony Hanuagi presented the Solomon Islands (SI) national report (*doc. SWPHC17-07G*).

Solomon Islands became an IHO Member State on 15 July 2019. Solomon Islands Maritime Safety Administration (SIMSA) became an independent, autonomous, regulatory body ‘Solomon Islands Maritime Authority (SIMA)’ on 31st December 2019.

The RAN hydrographic ship HMAS LEEUWIN conducted a survey of Bina Harbour on Malaita Island in late 2019. The harbour would be developed as a port for international shipping. The RAN may also conduct surveys of Diamond Narrows and Lucas Channel on New Georgia Island in the western part of SI and a site at the PNG/SI border for a SI Patrol Boat Base.

New SI Chart SLB08 was published by its PCA (AHO) in July 2019. SIHU will negotiate with AHO for production of new charts of some identified areas of SI. The AHO delivered the SI Tide Tables 2020 to SIHU in December 2019.

During the year SIHU’s Category B Surveyor graduated from University of Southern Queensland with a Degree in Spatial Science Technology. The Cartographer completed a 4 weeks IALA level 1 (AtoN) Manager’s Course at SPC in Fiji.

It is proposed to negotiate with SIMA management to create a position for the post of MSI National Coordinator and recruit a competent person.

Main challenges and/or obstructions

* Shortage of trained personnel - presently only 3 staff (2 hydrographic surveyors and 1 nautical cartographer)
* SIHU does not have total control over its allocated budget.
* Inability of SIHU to raise awareness at the decision-making levels of the importance of Hydrography/Charting and the role of SIHU.

**7.7 Tonga**

Commander Holokaukau Lakai presented the national report for Tonga (*doc. SWPHC17-07H*).

The Hydrographic Unit within His Majesty’s Armed Forces (HMAF) Tonga was established in the 1980s and was fully operational in the 90s. In 2010 the Government moved the responsibility for national hydrography to the Ministry of Infrastructure (MOI). Subsequently in 2017 it was decided to revert to the previous arrangement, and HMAF commenced the plan to reinvigorate its hydrographic capability. The current national arrangement is that the Marine and Ports Division (within MOI) will retain the policy aspect and the Tonga Navy Hydrographic Unit (TNHU) will develop an operational survey capability.

The short-term plan is to have 2 field teams and a support office within two years. Presently there are 2 surveyors (a Category A and a Category B) and 8 sailors within the Unit. During the initial 12 months the focus will be team building and Unit organisation, as well as training of personnel (formal and internal). It is anticipated to acquire Single Beam Echo Sounder (SBES) by mid-2020 and carry out basic survey by end of the year. Within 18 months it is planned to introduce Multi Beam Echo Sounder (MBES) survey and conduct independent SBES surveys (data acquisition and processing). Within 2 years it is expected to develop full survey capability and hand over the data to LINZ for charting purposes.

The TNHU and RAN did a preliminary assessment in 2019 and produced a ‘Road Map’. TNHU and RAN carried out a successful joint hydrographic survey of a new domestic wharf late last year. It involved verification of the specified depth (4 metres) of the basin. Results indicated that the dredging contractor had not achieved the specified depth and was required to rectify it.

**7.8 United Kingdom (UK)**

Rear Admiral Peter Sparkes and Mr Sam Harper presented the national report for United Kingdom (*doc. SWPHC17-07I*).

UKHO has moved into its new headquarters and is in the process of transforming from a hydrographic office into a maritime geospatial information agency as well. The number of staff has been reduced from 1150 to 850 by embracing new ways of working and new technology.

The main achievements since the last meeting related to activity carried out as part of UK Government funded Commonwealth Marine Economies (CME):

* SDB survey and delivery of Scoping Study for Kiribati in support of Maritime Infrastructure Development
* Survey training for Fiji Hydrographic Service involved 2 days of theory on key subject areas and 10 days of practical advice. It included developing SOPs for their survey equipment.
* Data handover workshops to Kiribati, Tonga and Tuvalu (i.e. data collected in previous years)
* Delivery of CME Programme Hydrographic Governance Course

The UKHO had also published 7 new SNCs and 57 New Editions for the region.

Specific activities as part of the future plans for the region are:

* Future CME and Overseas Territories Seabed Mapping Programme TSMP activity (funding dependent)
* PCA nation plans (5 nations in Pacific; global total of 71 nations and territories )
* Charting plans for next year will be decided once the new data has been received and processed

A 5-day Hydrographic Governance Course was delivered at the UKHO in November 2019 to the countries within the scope of the CME Programme. The output is a framework / implementation plan that can be easily used by a developing nation. The course provided an opportunity for interaction among the Pacific and Caribbean nations and sharing their experiences in capacity building.

Ten international students attended the annual Nippon Foundation funded Course in Nautical Cartography was conducted at the UKHO from 2 Sep to 12 Dec 2019.

Future priorities are influenced by growing awareness and appetite for data-centric approaches, i.e.:

* Development of S-100 – S10x strategy
* Refresh Capacity Building approach
* Review of training offering
* Review of regional engagement strategy

The main challenges and/or obstructions identified:

* Remote locations with limited face to face opportunities to assist with Hydrographic Governance
* Funding / resources available for data collection
* Access to updated information and data needs to meet both SOLAS and Blue Economy aspirations including S-100 impact / developments

**7.9 United States of America (USA)**

Rear Admiral Shepard Smith provided an overview of the USA national report (*doc. SWPHC17-07J*),

US has designed a 9,000 ENCs suite to support its maritime community and will be building towards that over the course of the next decade. The focus is mainly on existing data and creating a bathymetric database for populating nation-wide. This will be the necessary underlying foundation for building all the new cells. Work is being carried out in deconflicting the bathymetry and making superseding decisions at the database level. The database will be used charting, MSDI, modelling purposes, etc.

Training opportunities are available at various institutions in the United States.

Two Category A (S-5) hydrographic programs:.

1. University of New Hampshire (Information in CL 12/2019 dated 11 February 2019)
2. University of Southern Mississippi

Three Category B programs:

1. U.S. Navy’s 6-month International Hydrographic Management and Engineering Program in Gulfport, Mississippi (S-5)
2. NOAA’s 1-year Nautical Cartography course at Silver Spring, Maryland (S-8)
3. NGA’s 6 month Competence Training for Nautical Cartography (S-8)

The USA has been focussed on the Seabed 2030 as a driving element based on a Presidential Memorandum of November 2019 re Ocean Mapping. Work is being carried out in building a strategy to implement.

The NOAA Ocean Service has developed the ability to project the amount of additional storm surge from a regular storm. This relies on bathymetry and along with sea level rise forms a critical part of a service to be provided to the coastal community. It has also developed and published the S-111 Surface Current models for coastal water which are weather driven models updated every 6 hours. NOAA is working with commercial participants to implement these in navigational systems.

**7.10 Vanuatu**

Mr. Robert Tari provided Vanuatu’s report (*doc. SWPHC17-07K*), outlining the following achievements:

* A five-year capacity building program for local surveyors and establishing a National Hydrographic Survey Unit to provide hydrographic survey services in Vanuatu.
* A Cabinet Paper has been submitted to the Council of Ministers Meeting (13 February 2020) for approval of:
1. Proposal to form a National Hydrographic Committee (NHC.
2. A prioritized survey plan for Vanuatu with associated annual budget. Intention is have all approved sites surveyed by 2030.
* Establishment of the Oceans Affairs Office to carry out Marine Spatial planning. Consultations and assessment have been carried out for 14 sites identified. The government agreed to have a plan for the full EZZ of Vanuatu for better decision making.

No survey work was done last year but there are plans to conduct hydrographic work in a few priority areas in 2020. SPC has indicated it will provide some assistance for this activity. Charting updates is carried out with the assistance of UKHO and SPC – through Hydrographic Notes, etc. The Marine Safety Information is progressing with promulgation of local, coastal and NAVAREA X warnings.

There also had been significant progress in regard to the Aids to Navigation (AtoN), i.e.:

* AtoNs Risk Assessment completed in Port Vila and Port of Luganvile.(as part of SPC’s Safety of Navigation (SoN) Project)
* Seven domestic ports have new AtoNs
* 30 Million Vatu budget has been approved for AtoNs in 2020
* Two staff graduated from the IALA AtoN Level 1 Manager Course

The MSDI governance framework is led by Ministry of Infrastructure and Public Utilities and the Ministry of Foreign Affairs. The NHC is made of different agencies related to the Maritime industry. MSDI pathway is identified in the five-year plan.

The main challenges facing Vanuatu are:

* Increasing number of international and domestic ships
* Lack of hydrographic infrastructure and expertise
* Legal framework issues
* The institutional arrangement requires improvements to prioritize planning in achieving hydrographic & AtoNs developments
* Unsurveyed ports and harbors being accessed by ships at their own risk

The Chair thanked Members for presentation of their reports which were very informative - sharing of experiences and lessons learnt, raising awareness and building capacity. The activity over the past twelve months had been phenomenal and commendable progress made in many areas. There have been some common challenges, primarily centring around resources (recruiting, training and retaining staff) and the need for governance. The reports highlighted and reinforced the following:

* the need for collaboration among members in the region
* the need for de-conflicting and efficiencies to be gained across the region
* the mutual support to be gained by communicating and sharing resources

Decision 9: To note national reports under agenda item 7 (*docs. SWPHC17-07A to SWPHC17-07K*)

**8. Reports by Associate Members**

**8.1 Cook Islands**

Mr Vaipo Mataora provided an overview of the national report (*doc. SWPCHC17-08A*).

The main achievements during the last twelve were:

* Government allocation of budget for Cook Islands National Hydrographic & Geoscience Division
* Job descriptions completed for each division – i.e. Geodetic, Geoscience and Hydrography.
* PRNI project progressing and Cook Islands charts almost completed (LINZ)

No significant surveys were carried out during the year. There is possibility of collaboration with SPC to conduct some hydrographic surveys in the near future. Paper chart NZ 93 (Cook Islands) was withdrawn and replaced with international chart NZ 14628 (INT628) in August 2019. ENC NZ200093 (South Pacific Ocean – Cook Islands) was withdrawn from circulation in June 2019 and its coverage incorporated into a new ENC NZ214628 (South Pacific Ocean – Cook Islands).

The Cook Islands government fully support research programmes. Approval was granted to Ocean Exploration Trust (OET)’s E/V Nautilus expedition to transit through the Cook Islands EEZ from the northern high seas boundary for collecting bathymetry data to support GEBCO 2030. Some data for the Cook Islands extended Continental Shelf was also gathered during this survey.

Marine spatial planning is highlighted in the Marae Moana Act 2017. The Cook Islands Geospatial Users committee has developed a national policy on data sharing which is still under review and consultation with the relevant stakeholders. The ‘CookGeo’ is an open access geospatial data repository for the Cook Islands providing premier geophysical, geodetic and marine spatial data sets. Its upgrade and customization will be undertaken in collaboration with SPC.

The Plans/Projects currently affecting the Cook Islands are:

* Pacific Regional Navigation Initiative (PRNI)
* Ridge 2 Reef
* Pacific Maritime Boundaries
* Extended Continental Shelf
* Manaatua fibre undersea Cable

The main challenges identified are:

* High turnover of staff – particularly in the MSI section
* Awareness about hydrography to newly appointed Head of Ministries
* Lack of knowledge about importance of hydrography
* Capacity building – consistency in training personnel having the relevant background/skills
* Recruitment - difficult to attract technical people
* Lack of funding commitment from Government

The Government is very supportive of Hydrography and discussions are ongoing for it to support IHO membership of Cook Islands.

**8.2 Indonesia**

Commodore Trsimadi presented the national report for Indonesia (*doc. SWPHC16-08B*), outlining the activities of the Indonesian Navy Hydrographic and Oceanographic Center (PUSHIDROSAL) during the year.

Forty seven hydrography and oceanography Surveys covering a total area of 33,761 km2 were conducted. The work was in the priority areas – channels, ports, Archipelagic Sea lanes, busy waters and straits. Charting activity involved updating 78 paper charts and 473 ENCs, as well as creating 11 new ENC cells. The cartographic software was also updated. The progress of migration from S-57 to S-100 continues.

Capacity Building Programs

Training opportunities are available in Indonesia as follows:

Category B Hydrographic Course (PUSHIDROSAL)

Bachelor Degree in Hydrography

Category A Hydrographic Course (Bandung Institute of Technology)

As part of the Capacity Building Program, a MSI Course and a MSI DataBase Workshop were conducted for EAHC and NAVAREA XI members. The programs was attended by 21 participants from 12 countries (EAHC, NAVAREA XI, Palau and Marshal Islands). The instructors were provided by USA (NGA), Japan (JHOD) and Indonesia (PUSHIDROSAL).

Indonesia proposes to host an Inter-Regional Seminar/Workshop ‘GIS Web-mapping on Nautical Chart for Regional MSDI initiatives’ in Jakarta during August-September 2020. Its objective is to increase awareness and understanding of technical design and application of SDI technology to support sharing activities. Japan will provide the experts/lectures for the seminar. SWPHC and NIOHC are invited to attend this programme.

PUSHIDROSAL had developed the Hydrographic Data Centre as implementation of MSDI in Indonesia (<http://hdc.pushidrosal.id>). Users can access survey area, interactive sailing chart, e-navigation and the newest information is Indonesian Digital Elevation Model (DEM). The national maritime portal, National Ocean Data Center, can be accessed at <http://nodc.id> .

The proposed Traffic Separation Schemes in Sunda Strait and Lombok Strait has been approved by the IMO and will be implemented in July 2020. Cruise ships have effectively used ENCs for port visits at Gilmas port, Lombok and Benoa port, Bali.

Following the sinking of a passenger ship in Lake Toba, the largest lake in Indonesia, in 2018 PUSHIDROSAL carried out a survey and located the ship at a depth of 450 metres. In 2019 it conducted a comprehensive survey of the lake and its 9 local ports using MBES and covering a total area of 1200 km2.

Earlier PUSHIDROSAL had also successfully located the Flight Data Recorder and Cockpit Voice Recorder of Lion Air airplane that crashed in the Java Sea in 2018.

**8.3 Kiribati**

Mr Eritaia Tauro summarised his nation’s progress during the previous year (*doc. SWPHC17-08C*).

The main achievements were:

Hydrography

* UKHO provided Satellite Derived Bathymetry Datasets for all 33 islands in Kiribati
* Hosted awareness workshop with relevant Government stakeholders (conducted by UKHO)
* Discussions with World Bank/Asia Development for funding of LIDAR surveys – UKHO assisting with the technical component and to produce the charts at the end
* Staff member offered scholarship through the Nippon Foundation/GEBCO capacity building program (Cat A training at the University of New Hampshire)
* Attended CME Seminar UKHO, London, Nov 2019
* Plans to become IHO Member in the pipeline

Aids to Navigation

* Staff member attended IALA AtoN Manager Level 1 course in Suva Fiji conducted by SPC during July-August 2019. (Total 2 trained AtoN Managers presently)
* SPC provided training to AtoN staff on AtoNs Risk Assessment in Kiritimati Island from Nov – Dec 2019.

It is planned to carry out hydrographic surveys of 4 outer islands (Abaiang, Nonouti, Tabiteuea South ande Beru) as part of the Kiribati Outer Islands Transport Infrastructure Investment Project (KOITIIP) funded by the World Bank and Asia Development Bank. There are also plans in the future to engage commercial survey firms to conduct surveys for all outer islands in Kiribati in order to produce new charts.

The main challenges and/or obstructions identified are:

* Limitation in capacity to meet mapping authority standards
* No legislation/policy framework in place to support hydrographic activities
* Funding and financial constraints
* Scattered islands over vast area of ocean

**8.4 Nauru**

Mr Kemp Detenamo provided a brief report for Nauru (*doc. SWPHC17-08D*).

There is a fully functional Meteorology Office under the Ministry for Emergency. Following their attendance at SWPHC17 and the Technical Workshop, he and his colleague Mr Barassi Botelanga (Director of Meteorology) will be working on a plan going forward – i.e. to establish a Hydrographic Office/Unit. It is most likely that a Land Surveyor will be engaged to carry out the technical/field work associated with hydrography.

There is very little shipping traffic in Nauru, i.e. average one cargo vessel every 6 months. The Meteorological Office disseminates weather information to the local fishermen. A common problem faced is the loss (drifting) of mooring buoys and likelihood of vessels hitting these floating objects. There is a need to disseminate this information to the mariners. The Lighting Tower has been revived and has a visibility of about 25 miles at night.

In 2016 Cardno Engineering (an Australian firm) carried out a hydrographic survey of the entrance for the new wharf at the Port. Construction work had commenced and the wharf will be completed by end 2020.

Mr Detenamo attended the CME Workshop held at UKHO in November 2019.

Over the last few years he had discussions with the Minster about hydrography and the IHO.

The elections held in August 2019 resulted in a new Government and it is very difficult to convince them on the importance and benefits of hydrography.

The main challenges and/or obstructions are the lack of political support, lack of infrastructure and capacity building.

**8.5 Niue**

Mr Stuart Caie (New Zealand) presented Niue’s national report on their behalf (*doc. SWPHC17-08E*).

The main achievements since the last meeting were:

* Aids to Navigation Risk Assessment of Avatele and Namukulu Channels completed.
* IHO Technical Implementation Visit
* MSI Training ( 1 day course in June 2019 delivered by NAVAREA XIV, MSAF (Fiji’s National MSI Coordinator) and LINZ, working together under the NZ aid programmes PRNI and PMSP
* PRNI Data Handover
* Progress with the legislation and the compliance strategy giving effect to the Large Scale Marine Protected Area
* Drafting of the Maritime Safety Bill, which includes sections on MSI and AtoN
* Local MSI warnings promulgated

The main challenges were:

* No full VHF Ch16 coverage around Niue
* No full VHF Ch16 coverage around Niue

Taking on board SPC’s AToN) Risk Assessment, the future focus will be:

* Installing Aids to Navigation at Avatele and Namukulu
* Updated chart for Niue and new chart for Beveridge Reef
* Full VHF Channel 16 coverage
* Marine Spatial Plan, compliance and sustainable financing
* Draft/amend legislation to implement the IMO conventions

**8.6 Palau**

Mr Levan Akitaya provided a brief report for Palau (*doc. SWPHC17-08F*).

The main achievements during the year were:

* Bureau of Marine Transportation created and Hydrography assigned to the Division of Port State and Navigation (Presidential Executive Order 421 – February 2019)
* IHO & NGA (USA) Technical Visit in August 2019 – emphasized to leadership the importance of Hydrography and data sharing

A list of recommendations were compiled as a result of the Technical visit. A draft MOU is in place and serves as commitment to work together with the United States Government. It allows the US Government to use the data collected by other agencies for application of publicly available products. There are many private entities throughout Palau that collect and store a lot of data, and this could be obtained if agreements are in place.

Palau has improved the MSI process with its NAVAREA Coordinator (Japan). A staff member attended the IHO MSI Course in Jakarta last year.

The main challenges were:

* Newly created Division to oversee Hydrography
* Political support
* Finance

**8.7 Marshall Islands**

Mr John Lowell (USA) presented Marshall Islands report on their behalf (*doc. SWPHC17-08G*).

Most of the activity revolved around the IHO & NGA Technical Visit in August 2019.

Meetings were held with a large number of participants in the marine field from various Government Agencies. Discussions dwelt on the need for Hydrographic Survey and Governance, Updated Charting, Satellite Imagery in Disaster Response and Preparedness.

The main challenges are:

* Government has not appointed an agency responsible for Hydrography, although the Ports Authority is handling in the interim
* There is no central data collection and maintenance by the Government of the Marshall Islands. Such data are scattered in various agencies of the Government
* There is no Government Regulation governing Hydrography, Charting, and other Information

Marshall Islands has requested that NOAA (US) consider re-routing its ship *Rainier* to conduct hydrographic survey in the Marshall Islands after the completion of the planned hydrographic surveys in Guam and CNMI in 2020.

The US NGA provided current charts of the Marshall Islands during the Technical Visit in August 2019. The Ports Authority has started working with relevant Government agencies to commence updating the charts, as necessary

A staff member attended the IHO MSI Course in Jakarta in September 2019.

The Marshall Islands participated in SeaBed 2030 workshop in Wellington, New Zealand in

September 2019.

In September 2020 the IMO will conduct Coastal State Audit in the Marshall Islands.

The Marshall Islands has not participated in Hydrography with relevant organizations, with the exception of the SPC. The SPC has coordinated efforts in MSI, SOLAS- Regulations, and Aid to Navigation (AToNs). Since the 16th SWPHC held in Niue 2019, the Marshall Islands has engaged with NAVAREA 11 Coordinator relative to MSIs, etc..

The Technical Visit to Marshall Islands helped in realising the need to reinforce the connection between the PCAs and various island nations in the region. There are a lot of activities occurring and the communication channels are a bit of a challenge. There is need to continually refresh these.

The key within the developing nature of these smaller island nations is how to leverage the existing funded activities in new ways to meet the needs of a hydrographic organisation.

The Chair thanked all for presentation of their reports, and added that these formed a very important part of the meeting. It reinforced the volume of activity occurring in the region, the many success stories / achievements, as well as the challenges faced in the region – e.g. getting support, resources, personnel. Furthermore, it highlighted the opportunities this regional forum offers in communicating and exchanging ideas.

Decision 10: To note national reports under agenda item 8 (*docs. SWPHC17-08A to SWPHC17-08G*)

**9. Relevant International/Regional Organisations (Observers) Reports and Activities**

**9.1 IALA**

Mr Omar Eriksson provided a brief presentation on IALA and the World-Wide Academy. (*doc. SWPHC17-09.1*)

9.1.1 IALA’s Strategic Vision and Goals to achieve by 2026 are:

1. Marine Aids to Navigation are developed and harmonized through international cooperation and the provision of standards.
2. All coastal states have contributed to a sustainable and efficient global network of Marine Aids to Navigation through capacity building and the sharing of expertise.

The World-Wide Academy focuses on assisting Coastal States to achieve Goal 2 through:

* Education and Training
* Oversee IALA Training Accreditation scheme
* Support Accredited Training Organisations
* Deliver training on Risk Management and other special topics
* Capacity Building
* High Level Missions, raising awareness
* Technical Assessment Missions to Coastal States in need
* Long-term partnership and follow up activities with Coastal States
* Research & Development
* Determine knowledge gaps and need for R&D
* Promote R&D
* Harvest R&D results and feed this into IALA Committees

The Academy could assist the SW Pacific nations in the following:

* Training of personnel, bringing staff to be compliant with IALA training Standard
* IALA Certified AtoN Manager course
* IALA AtoN Management Masterclass
* IALA Risk Management Toolbox course
* Sponsor individuals to attend IALA training activities
* Technical Needs Assessment Missions aiming at assisting the government to understand their SOLAS Ch V Coastal State obligations and what is needed in relation to Aids to Navigation
* Long standing partnership with Competent Authorities, Service Providers, WWA Alumni etc.
* Project Partnership
* IALA could be a partner in one of the projects
* IALA could contribute with needs assessments and training related to:
* Aids to Navigation
* Vessel Traffic Services
* Risk Analysis using the IALA Risk Management Toolbox
* Budget up to 1.2 million USD

The Chair thanked IALA for its continuing engagement in the region, particularly the long-standing relationship with SPC.

**9.2 SPC (Pacific Community)**

Mr Salesh Kumar provided a broad overview of the hydrographic related activities of the SPC Geoscience, Energy and Maritime (GEM) Division (*doc. SWPHC17-09.2*).

Since the last meeting work was carried out in the 4 main programmes/projects relating to sustainable maritime transport and safe navigation:

* Pacific Islands Domestic Ship Safety (PIDSS) Programme
* implementing SMS on board domestic vessels
* Pacific Safety of Navigation Project
* building capacity and systems to deliver AtoN services
* Maritime Technology Cooperation Centre in the Pacific (MTCC-Pacific)
* uptaking low-carbon technology & operations in domestic shipping and ports
* Pacific Ports 2030-2050
* building resilient, green and clean ports in the Pacific

As part of the Pacific Safety of Navigation Project, AtoN Risk Assessment using SIRA tool had been carried out in 9 of the 13 targeted countries. In addition participants from 9 countries successfully completed the AtoN Managers Level 1 course.

Mr Thierry Nervale briefed the meeting on the developments in the region over the last few years. SPC in partnership with IOC is working on the preparation and implementation of the ‘2021-2030 United Nations Decade for Ocean Science for Sustainable Development Programme’ in the Pacific. This is a global framework to support efforts to reverse the cycle of decline in Ocean health & create improved conditions for sustainable development. The Pacific Community Centre for Ocean Science (PCCOS) aims to help Pacific Island governments and communities easily access the ocean science and expertise they need to make informed decisions and to protect and sustainably manage ocean resources.

The Pacific Regional Energy and Transport Ministers meetings held over the years had some outcomes relating to hydrography and safety of navigation, i.e.:

- 2014: acknowledged importance of hydrographic services and agreed to the formation of a Hydrographic Unit at SPC

- 2017: endorsed a Regional Strategy on Safety of Navigation in the Pacific to ensure a consistent approach and progress in hydrography, AtoN, SAR

- 2019: agreed to set up or strengthen national mechanisms for improved consultation and coordination in safety of navigation and to commit sufficient resources for installing or maintaining safety of navigation services.

In 2019 the Pacific Islands Forum Leaders endorsed the development of a ‘2050 Strategy for the Blue Pacific Continent’. It is a vision for a region of peace, harmony, security, social inclusion and prosperity involving:

* 24 Pacific Countries and Territories
* 30 million people
* 42 million square kilometres
* 30% of the world’s Exclusive Economic Zones.

 In order to have a consistent approach to safety of navigation in the Pacific SPC proposes to:

- Ensure Safety of Navigation is integrated in development of the 2050 Strategy for the Blue Pacific Continent

- Approach IMO with a consistent Pacific initiative related to Safety of Navigation under SOLAS Chapter V – submission to its Technical Cooperation Committee (SPC, IALA, IHO? Countries?)

- Establish a consortium of partners to support Safety of Navigation initiatives in the Pacific (similar to the consortium of partners on maritime boundaries matters (SPC, Australia, New Zealand, scientific institutes) which have been working together for the past 25 years).

The Chair thanked SPC for the interesting presentation and added that its effort in building the in-country capacity is commendable. Hydrography and safety of navigation will be important components of the Blue Pacific Continent strategy. New Zealand and UK thanked SPC for the offer of collaboration in the regional work and looked forward to discuss details. It was agreed that there could be benefit in the SWPHC Chair and IHO Sec-General/Director attending the Pacific Regional Energy and Transport Ministers meetings. SPC was requested to make the necessary arrangement for this.

**Action 8: SPC to invite SWPHC Chair and IHO Sec-General/Director to the next meeting of the Pacific Regional Energy and Transport Ministers Meeting.**

**9.3 GEBCO Seabed 2030 Report**

Mr Johnathan Kool provided a brief presentation on GEBCO and the work carried out by its sub-committees and working groups. *(doc. SWPHC17-09.3).*

GEBCO generates a number of products, the popular ones being:

* Global gridded bathymetric data
* GEBCO 2014: 30 arc-second grid
* GEBCO 2019 15 arc-second grid
* Gazetteer of Undersea Feature Names
* Digital Atlas
* Grid viewing software
* Printable maps
* Web Map Service (WMS)
* IHO-IOC GEBCO Cook Book

As part of capacity-building initiative, a Postgraduate Certificate in Ocean Bathymetry course is taught at University of Hampshire, USA and funded by the Nippon Foundation of Japan. A total of 96 students from 43 coastal States have successfully completed this programme over the last 16 years. Applications were currently being called for the course commencing in August 2020.

Seabed 2030 is collaborative project between the Nippon Foundation and GEBCO to inspire the complete mapping of the world’s ocean by 2030 and to compile all bathymetric data into the freely available GEBCO Ocean Map. Bathymetry data is useful for numerous other purposes besides charting – e.g. oil gas exploration, tsunami inundation models, ecosystem identification and management, Sea Level Rise Mitigation. Mr Jamie McMichael Philips, ex-UKHO staff and former Chair of IHO Worldwide ENC Database WG, is the new Director of Seabed 2030.

GEBCO and Seabed 2030 are also engaged in the UN Decade of Ocean Science for Sustainable Development (2021-2030).

GEBCO does not have any primary collection activities, i.e. no resources to carry out surveys, etc. It relies on MS to contribute to GEBCO and Seabed 2030 Project. The Data Centers coordinate with stakeholders, building on existing regional efforts and assembling regional and global data products.

The most recent GEBCO 2019 (released April 2019) showed that the 15-second grid had more than doubled over the 5 years (i.e. 15% compared to 6% in 2014).

There were various ways to participate in GEBCO activities, i.e.:

* Contribute information about existing data coverage
* Contribute data
* Gridded data products
* Points from ENCs
* Share information about future mapping plans
* Engage with Data Centers
* Support and promote GEBCO activities and products

**9.4 Seabed 2030 South and West Pacific Centre (SaWPaC)**

Mr Adam Greenland briefed the meeting about Regional Seabed 2030 Data Centers and the South and West Pacific Data Assembly Centre (SaWPaC). *(doc. SWPHC17-09.4)*

SaWPaC is located in New Zealand and run by the National Institute of Water and Atmospheric Research (NIWA) in collaboration with GNS Science and Land Information New Zealand (LINZ). It has responsibility for an area covering 123,535,000 km2 from the west coast of South America to the east coast of Australia and north to Japan, Korea and China. It includes the Exclusive Economic Zones of 39 countries as well as 67,000,000 km2 outside national jurisdiction. 80% of the area is deeper than 3,000 metres.

The inaugural SaWPaC Workshop was held in Wellington, New Zealand on 3-6 March 2019. It is proposed to hold two workshops in 2020 – in S.E. Asia and South America. There are plans to engage with Regional Hydrographic Commissions and Hydrographic Offices

Seabed 2030 target grid resolution is based on the average beam footprint for a specified depth range of a modern multi-beam system installed on a surface vessel. The grid delivery from SaWPaC has increased from 13% of coverage (for 2018 grid) to 23% (for 2019 grid). Major regional contributors in 2019 have been:

JAMSTEC (Japan), Geoscience Australia, MGDS (USA), NOAA NCEI multi-beam bathymetry database (USA), Olex (single-beam data from fishing vessels). SHOM (France), Ocean Exploration Trust

SaWPaC is awaiting from IFTRMER submission in 2020. There are potential sources of crowd-sourced bathymetry - Fishing, cargo, leisure vessels. In addition, there is potential to use ENC data available from Hydrographic Offices in the Pacific region.

A regional Seabed 2030 meeting has been arranged to be held during the AMSA/NZMSS Conference in Sydney on 5-9 July 2020. It is proposed to hold a workshop ‘Seabed Mapping within AusSeabed and Seabed2030: open data supporting marine planning’.

Further information on Seabed 2030 and SawPaC is available as follows:

<https://seabed2030.gebco.net>

<https://data-niwa.opendata.arcgis.com/pages/seabed2030>

 (SaWPaC Open Geospatial Data); (SaWPaC story map)

Decision 11: To note organisations’ reports under item 9 (*docs. SWPHC17-09.1 to SWPHC17-09.4*)

**10. Capacity Building**

**10.1 Report on the IHO CBSC Meeting and actions** *(doc. SWPHC17-10.1)*

Mr. Adam Greenland (SWPHC Capacity Building Coordinator) provided updates on the various aspects of capacity building, as follows:

IHO-funded CB activities carried out since the last SWPHC meeting

* Technical Implementation Visit to Niue in June 2019
* Report prepared and submitted
* Technical Assessment and Advice visit to Palau & Marshall Islands in August 2019
* highly successful in raising awareness
* Training for Trainers on MSI in January 2020
* Maritime Safety Authority, Fiji staff member)
* 2 Day Technical Workshop Technical Workshop on MSI for Managers & Disaster Framework for SWPHC on 10-11 February 2020 (linked with SWPHC17)

Non-IHO CB Activities

* New Zealand Aid Programme – Pacific Regional Navigation Initiative (PRNI)
* UK - Commonwealth Marine Economies (CME)
* Others SPC, IMO, IALA, JICA (email in July 2019 re Category B course in Japan).

Projects submitted to CBSC17 Meeting (Genoa, Italy 29-31 May 2019)

4 projects (activities) were submitted to the CBSC17 Meeting and 2 were approved.

• P-09 2 Day Technical Workshop on MSI for Managers & Disaster Framework for SWPHC (linked with SWPHC17 - Feb 2020) – completed

• P-06 Training for Trainers on MSI (Sunil Kumar MSAF) – completed

1 project was carried over from 2019 CBWP

• A-01 Samoa Technical Implementation Visit (LINZ)

2 projects were not funded

• P-15 MSI Regional Workshop (LINZ)

• P-18 Tidal Information Management Training (AHO)

**10.2 Update on the 3-year Capacity Building Plan** (*doc. SWPHC17-10.2*)

10.2.1 Mr Greenland outlined the planned CB activities for the 2020-2022 (based on the 3-year CB Plan), as follows:

2020

Technical Implementation Visit to Samoa (former 2019 CBWP A-01)

Also available to IHO MS –

(i) IHO-Nippon Foundation Geospatial Marine Analysis and

Cartography (GEOMAC) Project, [UKHO] (IHO CL09/20 by 6 April 2020)

(ii) IHO-ROK Cat A Hydrographic Surveyor [USM] IHO (CL-49/19 by 17 Feb 2020)

GEBCO Training Project [UNH] (IHO CL11/20 by 31 March 2020)

2021

2-Day Technical Workshop Governance (linked with SWPHC18) – *to be confirmed*

MSI Regional Workshop – *to be confirmed*

+ Other projects to be formulated at SWPHC17

2022

2-Day Technical Workshop (linked with SWPHC19)

+ Other projects to be formulated at SWPHC17

**10.3 Future Capacity Building Activities**

10.3.1 Mr Greenland stated that, based on discussions held during the workshop preceding SWPHC17, there is a need for a governance workshop. Lack of a legal framework and formal institutional arrangements hinder coastal States to meet SOLAS Chapter V obligations. Members agreed to put up a proposal for a workshop that will be linked to SWPHC18 Meeting. The output would be a formal plan to establish a national plan for hydrographic governance structure in RHC coastal States. Another proposal for submission will be a MSI Regional Workshop delivered by the NAVAREA Coordinators.

10.3.2 Mr Alberto Neves provided a brief explanation regarding the prioritisation of CB submissions made to IHO CBSC. Capacity Building Procedure 4 outlines a number of points to be considered when evaluating a project/proposal that is submitted. The points create an objective value that the CBSC will analyse. The biggest impact is when a proposal is in respect of Awareness, Technical Visit, Assessment and MSI. Trainings in Hydrography and Cartography have a lower priority. The number of countries benefitting from the activity is also taken into account – higher priority in case of large number of countries. Another important consideration is the ‘Neediness Factor’, i.e. the GDP Per Capita of the recipient/s. The ability to match some resources (cash/ in kind) from the region also accrues a maximum of 5 points.

10.3.3 The Chair requested the coastal States to work closely with PCAs regarding their capacity building requirements and prepare bids for submission to CBSC18 Meeting to be held in May 2020. These are to be forwarded to the CB Coordinator (by 29 February 2020), who, in coordination with the Chair, would submit it to CBSC18 (by 31 March 2020).

**Action 9: All members to provide CB requests to the CB Coordinator (deadline: 29 February 2020).**

**Action 10: CB Coordinator to compile the CB requests for support and submit to the CBSC18 Meeting in coordination with the Chair (deadline: 31 March 2020).**

**10.4 Regional Capacity Building Initiatives**

THE IHO CB Strategy has reference to Technical Visits, Assessments, MSI, etc. There have also been discussions to consider capacity building for implementation of S-100 and Disaster Response Framework. As such there are several competing needs for capacity building, but the funding available through the IHO CB Fund is limited. There was need for SWPHC members to be collaborative and look into other options for continued funding of CB activity in the region.

Mr Samuel Harper provided a brief background to capacity building and the bigger picture *(doc. SWPHC17-10.4B).*  The bathymetric ‘Blue Data’ collection is a keystone activity/data type used to support many other activities besides the traditional safety of navigation, e.g.:

* Habitat Mapping – Marine Protected Areas, Fisheries Management, Coastal Zoning, Oceans Governance, Sustainable Blue Economy
* Inundation Mapping – Disaster Preparedness, Situational Awareness, Disaster Response, Seabed Change Assessment, Disaster Recovery.

 G7’s ‘Charlevoix Blueprint for Healthy Oceans, Seas and Resilient Coastal Communities’ explicitly references the need to do more ocean observations, including seabed mapping and custodianship/availability of that data;

There is an increasing body of international policy that the hydrographic community needs to be aware of - particularly the ‘UN Decade of Ocean Science for Sustainable Development (2021-2030)’ and the UN Sustainable Development Goals (SDGs). Hydrography and spatial data are essential in underpinning the important decisions to be made in achieving the SDGs as part of the 2030 agenda. In this regard it is worth SWPHC engaging with Mr Peter Thomson of Fiji, UN Special Envoy for the Ocean, who will be a keynote speaker at the IHO Assembly in April 2020.

Mr Thierry stated that SPC would organise a workshop in May 2020 focussing on the needs of science to prepare and implement the UN Decade in the Pacific. It will be exploring opportunity in gathering partners, industry, stakeholders to be involved in this work.

Mr Adam Greenland (CB coordinator) stated it was essential to collaborate within the region, as well as with IMO and IALA, to address the challenges for implementing the SDGs of the UN Decade of Ocean Science for Sustainable Development. The meeting agreed that UK and NZ would work with SPC to look into how the SWPHC should start addressing these challenges.

**Action 11: UK and NZ to work with SPC\* and look into how the SWPHC should start addressing the challenges for implementing the SDGs of the UN Decade of Ocean Science for Sustainable Development.**

**(\*Office of the Pacific Oceans Commissioner – part of Pacific Islands Forum)**

Decision 12: To note the CB activities reports under item 10 (docs. SWPHC17-10.1, SWPHC17-10.2, SWPHC17-10.4A, SWPHC17-10.4B)

**11A. SWPHC International Charting Coordination Working Group (SWPHC ICCWG)**

Mr Robert Cario (Chair, SWPHC ICCWG) provided an update of the Working Group’s activities since the last meeting. (*doc. SWPHC17-11)*

Current membership comprised the PCAs in the region, i.e. Australia (Chair), France, New Zealand, UK and USA. Its main responsibility is for the coordination of Nautical Charting in the region, ensuring the Paper Chart INT series is comprehensive and current and the ENC coverage is appropriate. The main focus is on paper Charts at 1:500,000 and smaller, and ENC Nav Purpose 1 and 2 coverage.

SWPHC is a fairly stable region in terms of INT Chart scheming. Current standards and procedures work for the countries involved

The following paper INT charts and ENCs have been produced or are underway since the last meeting:

1. New Zealand - NZ14628 (INT628) of Cook Islands published in August 2019. Corresponding new ENC NZ214628 was published and ENCs NZ200093 and NZ214631 withdrawn.
2. France – Two INT Charts around New Caledonia at scale 1:300,000 expected to be published in 2020, i.e. FR6768 (INT6844), FR6686 (INT6843).

NOAA (USA) is undertaking a five-year program to end all raster and paper nautical chart production, which includes INT charts. Survey is in the process of scheming its ENC suite. Current ENC boundaries are based on the paper nautical chart extents, but will transition to a rectangular grid following latitude and longitude lines.

Australia is currently carrying out a review regarding future requirements for INT paper nautical charts. A number of INT charts have been identified as suitable for withdrawal without replacement. The intention is that remaining INT paper charts will be the minimum necessary to:

* Facilitate route planning and monitoring in areas not fully covered by the coastal series (e.g. offshore reefs, neighbouring countries and Antarctica)
* Display maritime claims (EEZ and Continental Shelf limits).

An IC-ENC report indicates a couple of low severity ENC overlaps in the SW Pacific. The overlaps are in very deep, little trafficked water and PCAs are working to resolve these.

Decision 13: To note the SWPHC ICCWG Report (*doc. SWPHC17-11*)

**11B. NOAA Electronic Navigational Chart Rescheming Plan**

Lt. Sydney Catoire provided a presentation on NOAA's Electronic Navigational Chart Rescheming Plan. The motivation for it was based on feedback from mariners on the ENC, i.e.

* Too many alarms on caution areas
* Need more detailed depth areas in key locations
* Need accurate least depths on wrecks and obstructions
* Discontinuities in ENC suite
* Symbology is not good for recreational mariners

The National Charting Plan aims to improve NOAA nautical chart coverage, products and distribution. The current ENC footprints come from paper chart products, i.e. boundaries of ENCs are directly from raster products. There are currently 131 RNC scales and 120 ENC scales. The legacy data issues are:

* Too many scales
* Scales don’t conform to IHO (S-57 & S-101) recommended scales
* Duplication of coverage
* Lacking uniformity, consistency, and coherence
* Not a smooth transition from scale to scale while navigating on ECDIS systems

The Re-scheming Plan will comply with IHO Standards and the number of ENC scales reduced from 120 to 11, based on:

* Standardized progressive scales
* Reduced number of scales
* Standardized size and scope
* Boundaries/limits following lines- of longitude & latitude
* Interlocking boundaries through the scales

The benefits of rescheming are outlined as follows:

* Smooth transition from scale to scale while navigating
* Smaller cell size in case of too much data in one cell
* Simplified naming convention
* Ease of planning for extending coverage

**11C. The end of NOAA traditional paper chart production**

The presentation by Lt. Sydney Catoire outlined the following:

In November 2019, NOAA announced it was starting a five-year process to end all traditional paper and raster nautical chart production.Since 2008, sales of traditional paper charts have dropped by half, while ENC sales have quadrupled.

NOAA is undertaking a three-pronged sunsetting process to ease the transition to ENC-based products while continuing to support safe navigation. The process includes:

* Improving data consistency and providing larger scale ENC coverage
* Providing access to paper chart products based on ENC data
* Ultimately, shutting down all traditional paper and associated raster chart production.

The five-year process to end all traditional paper nautical chart production will shut down all other raster chart products and services associated with traditional NOAA paper nautical charts, including:

* Print-on-demand or POD paper nautical charts
* Full-size and Booklet Chart™ PDFs
* NOAA raster navigational charts or RNCs
* The NOAA RNC tile service
* And NOAA’s online RNC viewer

The expected cancellation date of these products and services is January 2025. NOAA is coordinating details of the sunsetting effort with its primary charting partners such as the US Coast Guard, the Army Corps of Engineers, and the National Geospatial-Intelligence Agency. Other federal agencies are involved through NOAA’s participation in the Committee on the Marine Transportation System, Future of Navigation Integrated Action Team. In addition NOAA is working with some of its largest traditional paper nautical chart print-on-demand vendors, that is NOAA’s POD chart agents, to develop ways in which they will be able to provide large format plots of charts created with the NCC application in a manner similar to the way POD agents now sell standard traditional NOAA paper charts.

**12. Report on GMDSS, MSI and NAVAREA Coordination**

The meeting noted the following reports submitted to SWPHC17:

1. NAVAREA X Annual MSI Self Assessment Report submitted by Australian Maritime Safety Authority to the IHO WWNWS Sub-Committee Meeting held in August 2019 (*doc. SWPHC17-12.1*).
2. NAVAREA XIV Report to SWPHC17 submitted by New Zealand (*doc. SWPHC17-12.2*). It included reports received from the following 10 National Coordinators in NAVAREA XIV:
3. National MSI Self Assessment – New Zealand
4. National MSI Self Assessment – France – New Caledonia
5. National MSI Self Assessment – France – Tahiti
6. National MSI Self Assessment – Fiji
7. National MSI Self Assessment – Samoa
8. National MSI Self Assessment – Kiribati
9. National MSI Self Assessment – Tonga
10. National MSI Self Assessment – Cook Islands
11. National MSI Self Assessment – Niue
12. National MSI Self Assessment – Tuvalu

**13. Professional Pathways and Continuing Professional Development (CPD)**

**13.1 Training and Technical Assistance**

Mt Alberto Neves inquired whether there are plans to conduct more hydrographic training courses in the region, as currently the only IBSC-recognised programme is the Category B Hydrographic Surveying Course at the RAN Hydrographic School. Mr Greenland stated that it had proved quite challenging to engage the academia to reinvigorate past courses or commence new courses. Mr David Crossfield stated IIC Technologies has a proposal for running a modular-based Category B course in the region.

 Mr John Maschke informed that the SSSI Hydrography Commission is looking into engaging with a number of universities to put together a Category A course and it seems that a minimum of 10 students are required for the course to be cost effective. The Chair stated that the HydroScheme Industry Partnership Program (HIPP) in Australia has potential to identify more demand for hydrographic surveyors, and this may lead to reinvigorate discussions with academia and industry.

**13.2 International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers (IBSC)**

Mr Ron Furness (Chair, IBSC) provided a brief update on the work of the IBSC *(doc. SWPHC17-13.2).* The Standards were extensively reviewed in a period up to 2020. Although these have changed considerably many long standing submissions are not being made in accordance with the current guidelines. The IBSC has a massive task of assessing nearly 20 submission per year. Presenters, from institutions making the submissions, are encouraged to attend the IBSC meetings and address any queries from the Board. IBSC43 Meeting will be held in Colombia in March 2020.

He outlined the issues faced by the Board, Hydrographic Surveyors and Nautical Cartographers

• Issues for Submitters

- Guidelines are not read or are ignored

- Older courses are not reviewed against the Standards

• Issues for Board

* Increasing workload
* Need for intersessional reviews because submitters do not adhere to the guidelines
* Need for two meetings a year
* Succession planning given aging of Board Members – long serving core

The vital advice to submitters is to have a thorough read of the Guidelines and comprehend the Standards.

**13.3 The AHSCP Certification Scheme**

Mr Neil Hewitt provided a presentation on the Australasian Hydrographic Surveyors Certification Panel (AHSCP) Certification Scheme (*doc. SWPHC17-13.3*). It is a regional (Australasian) process for professional certification of hydrographic surveyors established in 1995 and has been recognised by the IBSC since 2012. The AHSCP is structured within the SSSI Hydrography Commission and is sponsored by, and comprising members of, the Surveying & Spatial Sciences Institute (SSSI) and Survey and Spatial New Zealand (S+SNZ).

The AHSCP recognises that competence is a combination of knowledge and the ability to practically apply that knowledge gained through relevant experience. These factors are assessed against recognised international standards (S-5A and S-5B) and an applicant awarded certification accordingly, i.e. Certified Professional Hydrographic Surveyor Level 1 (CPHS1) or Certified Professional Hydrographic Surveyor Level 2 (CPHS2). Each level has different pathways based on Education, Experience in practical hydrography (Logbook), Sea Time, and Time in-charge.

To maintain certification an individual has to comply with the CPD policy in the case of an SSSI/S+SNZ member. Non-members hare required to reapply on an annual basis. The current List of CPHS is available on the SSSI website:

<https://sssi.org.au/SSSI/files/69/69592841-d7b1-43d1-9718-6e2e136530a0.pdf> Currently there are 75 Level 1 certified surveyors and 42 Level 2 certified surveyors.

**13.4 Australasian Hydrographic Society (AHS)**

Mr John Maschke, Chair AHS South West Pacific (SWP) Region, outlined the AHS activity in the region. (*doc.* *SWPHC17-13.4*)

Seminars, information evenings, etc. are held in Suva, Fiji annually (in June and December) to meet the needs of SWP members. The events provide excellent opportunities for networking. Attendees include various government ministries, geospatial science, environmental science, academia, regional assistance bodies, commercial maritime bodies, etc. About 30-40 participants attend the evening events. The full-day seminar held on World Hydrography Day on 21 June 2019 had a total of 83 attendees – including the Australian High Commissioner, who presented a paper, and the Hydrographer of Fiji. It is proposed to hold an AHS SWP Region Seminar & Training Workshop

on 18-19 June 2020.

The AHS also provides the following awards annually:

* Achievements Awards - for excellence and achievement in hydrography and related areas, including maritime safety
* Education Award - AUD$ 3,500 grant awarded to one individual studying or researching in hydrography or related areas

In order to attract SW Pacific members a discounted individual membership fee of $15 is offered (normal $70).

**14. Industry / Stakeholders Session (Expert Contributors)**

 The presentations were as follows:

**14.1 Carnival Australia**

Mr Mike Drake’s presentation ‘SW Pacific Operations Update’ (*doc. SWPHC17-14.1*) provided some “end user” feedback on charting within the region. The predominant reason is the lack of infrastructural berths (mainly in Sydney and Brisbane) for the cruise ships. The fleet is undergoing transformation, i.e. trying to get more commercially beneficial tonnage using larger ships.

P&O Cruises, Australia activities in 2019 comprised:

* Australian & New Zealand Port Pilotage project (Pilotage on Government safety watch list) – part of this requires better ENC coverage in many ports; in many cases high density band 6 ENC. (PPU=ECDIS)
* Port Vila Harbour: Instigated survey of both wharf areas and approaches to enable safe berthing of larger ships (to enable production of IHO recommended scale ENC)
* EDEN : Maiden call to berth by “Pacific Explorer” 15 September 2019; three additional unscheduled ports calls by P&O ships in support of bushfire damaged Sapphire coast communities.
* Continue to work closely with DFAT and Australian, NZ & British High Commission in regards to economic benefit to SW Pacific region.
* Developing an in house “ENC usability” app to encourage more feedback from the Fleet & ultimately to hydrographic offices.

Participation in the projects involved interaction with pilots and harbour masters and it was noted that the ENC process within ports is not well understood. Some of the observations being:

* Old datums persist and contribute to above
* Pilot’s perceive the process to be slow and therefore often adopt private vector software solutions in their PPU
* Harbour Masters often lack awareness of ENC & ECDIS use - technology leap
* Some of the benefits of real time electronic navigation and positioning are therefore being lost ( e.g. RTK, Oceanstar positioning in combination with highly accurate picture of available space)
* Bigger ships going to the same small space increasingly require above

In Cairns Port (Australia) recent dredging and the high density (Band 6) ENC showing actual navigable water was crucial in getting “Queen Elizabeth” to be the first large ship to berth alongside on 28 February 2020.

**14.2 EOMAP Australia**

Dr Magnus Wettle provided a presentation ‘Developments in Satellite-Derived Bathymetry for hydrographic applications’. *(doc. SWPHC17-14.2)*

There were two main SDB approaches:

1. Empirical – involves fitting satellite values to survey data

Pros: Rapid and easy

Cons: No control of uncertainties outside the training area; high quality training data required; issues with varying seafloor types; vertical accuracies

(e.g. GEBCO Cookbook)

(ii) Physics-based – fully modelling the light pathway

Pros: Quantification of uncertainties; quantitative measure without in situ data, vertical accuracy, sensor and location agnostic

Cons: Difficult

Heron and Sykes Reef, Great Barrier Reef = SDB @ 2 metre grid resolution

A SDB of the entire Great Barrier Reef was carried out for a project in which the Great Barrier Reef Marine Park Authority, University of Queensland and Australian Institute of Marine Science were partners. All the 3,000+ reefs were mapped at 10-metre grid resolution. In addition to the predicted coral types, the maps reveal bathymetry, geomorphic zonation’s and bottom types. Approximately 16.000 sq. km of the area had depths ranging from 0-20 metres.

The new edition of the IHO Standards of Hydrographic Surveys (S-44) will include a new specification Matrix for other types of hydrographic surveys carried out for purposes beyond safety of navigation. This is likely to accommodate SDB specifications.

New developments in Software to enable SDB capability for national agencies:

1. Watcor-X: A Physics-based SDB standalone solution that allows generation of SDB anywhere on the globe without any previous information.
2. eoLytics SDB: A more rigorous solution involving combination of Physics and Machine Learning. It requires limited but good quality survey data, and is low cost and easy to use.

Development in Hardware acceleration is being funded by the European Space Agency. It is expected to reduce processing time by 95% or more, and provide near real time SDB (in the field, defence, emergency response, etc.), improved accuracy

**14.3 FUGRO Australia Marine**

Mr Mark Sinclair’s presentation outlined FUGRO’s activities in the region. *(doc. SWPHC17-14.3)*

Some of the surveys have not been driven by pure hydrography (nautical charting) but other requirements such as inundation mapping, tsunami modelling and climate change perspective.

Projects completed:

* Papua New Guinea (2017-2019)

– MBES and ALB survey of 30 locations for charting purposes and to promote coastal trade, tourism and development. It was funded by Asian Development Bank and involved over 20,000 linear kilometres of MBES data combined with 27 ALB Flights

* Marshall Islands (June 2019)

– Acquired ALB data over Majuro Atoll and Eybe Island, Marshall Islands to help future proof coastal areas and communities.

* Fiji (May-June 2019)

– Acquired topographical data over Nadi Airport, for future upgrade planning.

* Tuvalu (May-June 2019)

– ALB survey of 9 atolls, acquiring ridge to reef data to manage the threat of ongoing sea level rise and changing incidence of severe tropical storms.

Current project

* Queensland, Australia (July 2019 to June 2020)

– IHO Order 1b survey, using ALB and SDB, over an area 200 sq. km. to monitor coastal dynamics over 12 months.

Fugro’s Asia Pacific fleet participate in the global effort to support the GEBCO Seabed 2030 project. Data covering more than 500,000 sq. km has been donated to date.

It is participating in the United Nations Economic and Social Commission for Asia Pacific (UNESCAP) Sustainable Business Network task force on disaster and climate risk reduction:

Pilot 1 - Tsunami Detection using Advanced GNSS deployed at sea on Vessels

Pilot 2 - Utilise helideck monitoring systems on offshore installation to augment tsunami warning systems.

Fugro’s unmanned survey vessel, FAS900, is currently undergoing trials for broad area mapping of the seabed with MBES for nautical charting applications.

The Applied Hydrographic Survey Programme is an accredited Cat B course that Fugro conducts in Plymouth. The 24-week course was first run in 2019 and the current (2020) course is training students from Australia (Fugro), PNG (NMSA), India, Africa, etc.

**14.4 IIC Technologies**

Mr. David Crossman’s presentation outlined the various activities IIC Technologies had undertaken in the region/globally and the planned work. (*doc. SWPHC17-14.4*),

In 2019 it carried out the following activity useful for development of capacity within the region:

* SDB Training (teleconferencing) – National Authorities, Industry, Academia
* ENC and Chart Production (contract work) – LINZ, AHO
* MBES Survey – Vanuatu (for Carnival Cruises)
* Development work – LINZ

IIC Technologies is also able to carry out a ‘Technical Review’, which consists of:

* Visit by IIC SMEs (subject matter experts covering hydrographic, cartographic, etc. specialisations) meeting with the relevant national authority. This is often paired with training and/or stakeholder engagement.
* Develop understanding of: current capability and the directed and desired outcomes
* Outcomes - Gap analysis, Proposed resolves, Road Map, Indicative costs.

Technical Reviews have been conducted for LINZ and the HOs in Brazil and Taiwan.

Training Courses based on the IHO S-5B and S-8B standards of competencies have been provided at the IIC Technologies facilities for a number of years now. Recently it has developed a global delivery methodology for conducting the S-5B programme – i.e. taking the training to students. The Theory component, which is covered in 11 weeks in a residential course, is delivered through Distance learning over a 6-month period. The Practical component (5 weeks) is conducted at a consolidated location, followed by a 4-week Final Field Project.

There is strong interest from regional academia, training providers, professional bodies and National Authorities for this mode of training. Achievement will require:

* Buy-in by hydrographic community and academia
* Approx. 10-12 students per course (from any location)
* Local partner/s to provide learning environment and equipment for Field Labs and assessment phase

**14.5 Teledyne CARIS**

Mr. Daniel Kruimel’s presentation ‘Teledyne CARIS Update and Regional Inputs’ focussed on geospatial solutions and learning resources for S-100. (*doc. SWPHC17-14.5*)

The S-100 Online Workshop is an e-Learning for IHO S-100 standard and S-101 ENC product specification. It provides examples of creating S-100 products. Registration fee is waived for CARIS software users with active Software Subscription.

(Visit [www.elearning.caris.com](http://www.elearning.caris.com) to register)

Regional User Group Meetings (UGMs) for 2020 have been planned as follows:

1. The Netherlands – 9-11 June
2. Singapore – 7-9 July
3. Panama – 15-17 September

The three-day agenda will include the following sessions:

• Journey to S-100: Current and planned pilot projects, roadmaps and initiatives

• S-100 in CARIS: Current and planned capabilities and workflows

• Preparing for S-101 ENC production: Considerations, and differences between S-57 ENCs and S-101 ENCs

• Automation from Ping-to-Chart: Opportunities to streamline production through automation

• Artificial Intelligence (AI) and cloud based services: Current and future applications for the marine environment

• Marine GIS and the broader view: Broadening the scope of data management

• Products and Services: Creation, maintenance and distribution of new products and services

• Getting Ready for S-100: What can you do today?

Recent activities in the SW Pacific:

Geoscience Australia – Set up a Processing Pipeline in Amazon Web Services (using Cloud facility) to address one of the challenges for Seabed 2030 initiative is processing of backlog dataset from different sources (ports, RAN, scientific).

Fiji Hydrographic Office – Developing Paper Chart Production Capability: A CARIS trainer on-site assisted with the training for 3 weeks (November 2019).

Some new products pertaining to Autonomy and Automation:

• CARIS Onboard – automation for processing in near real time (on board vessels)

• Sonar Noise Classifier – Artificial Intelligence approach to cleaning sonar data for more efficient processing times

• S-100 Data as a service – trial project with Canadian Hydrographic Service and PRIMAR to serve

**15A. 2nd Session of IHO Assembly (A-2), Monaco, 21-24 April 2020**

The Chair stated that the IHO Secretariat had circulated the agenda for the Assembly (A-2). TH IHO Secretary-General had requested RHCs to submit their reports by 15 December 2019 (*doc. SWPHC17-15A*). The SWPHC Report had been submitted in accordance with the requirements, i.e. outlining the activities in the region during the 3-year intervening period between the Assemblies (A-1 and A-2). The report also highlights the Achievements, Challenges and Lessons Learnt. One of the lessons that the SWPHC constantly reiterates at the IHO is the benefit gained in combining the workshop with the regional meeting. This arrangement of enabling attendance at workshop followed by participation in the meeting has been very beneficial in furthering the capacity within the region.

Director Abri Kampfer informed that the Proposals to be considered by the Assembly had been published and Member States were requested to provide comments. The Proposals were being consolidated into the ‘Red Book’ and expected to be circulated within a week or so.

**15B. 4th IHO Council Meeting (IHO C-4), Monaco, 20-22 October 2020**

The meeting discussed selection of the SWPHC Representative to the IHO Council (in accordance with Section 9 of the SWPHC Statutes). USA stated that Australia had offered to continue as the regional representative and proposed that it be considered favourably in appreciation of Australia’s leadership in the last Council. United Kingdom seconded the proposal. As there were no other nominations, it was agreed that Australia continue as the SWPHC representative on the IHO Council. The Chair will inform the IHO Secretariat accordingly.

Decision 14: To select Australia as the SWPHC representative on the IHO Council

**Action 12: Chair to inform IHO Secretariat that Australia has been selected to occupy the seat (on IHO Council) allocated to the SWPHC.**

**16A. Letter from IHO DCDB**

The meeting discussed Ms Jennifer Jencks\* letter dated 27 February 2020 addressed to SWPHC (*doc. SWPHC17-16A*).

(\*Director of the IHO Data Centre for Digital Bathymetry (DCDB) and Chair of the IHO Crowdsourced Bathymetry (CSB) Working Group).

It related to the single-beam and multi-beam bathymetric data held and referenced in the DCDB in the South-West Pacific Region, and provided a summary indicating exactly where the data is and consequentially where the gaps are. Similar work was being carried out relating to CSB and ENC data holdings and the information made available as soon as possible. Ms Jencks requested SWPHC’s feedback into the DCDB re Seabed 2030 and CSB collaborations – in the form of requests, suggestions, etc.

[Note: Ms Jencks had subsequently circulated an amended letter (dated 3 February 2020), based on feedback from France (SHOM)]

Members decided to inform the DCDB Director that Seabed 2030 and CSB form an essential part of the regional meetings agenda. Furthermore, SWPHC is continually conversing with nations and data holders on these matters. The national reports submitted to SWPHC meetings provide information on their plans for CSB and Seabed 2030.

Decision 15: To note the letter from the IHO DCDB Director dated 27th January 2020 (doc. SWPHC17-16A)

**Action 13: Chair to inform DCDB Director to refer to national reports as submitted at SWPHC17 Meeting regarding their plans for CSB and Seabed 2030.**

**16B. Crowdsourced Bathymetry (CSB)**

Director Abri Kampfer provided a presentation on ‘IHO Crowdsourced Bathymetry Initiative’

(*doc. SWPHC17-16B*)

This is an IHO-led collaborative project to better enable mariners and professionally manned vessels to collect “crowdsourced bathymetry”. Crowdsourced bathymetry (CSB) is the collection of depth measurements from vessels, using standard navigation instruments, while engaged in routine maritime operations. It is valuable data with scientific, commercial & research value at no cost to the public sector.

CSB data has an important role in the following:

* Support national and regional development activities
* Fill gaps where data is scarce
* Useful along shallow, complex coastlines that are difficult for traditional survey vessels to access and may be more frequently visited by recreational boaters
* Identify uncharted features
* Assist in verifying charted information
* Confirm whether charts are appropriate for the latest traffic patterns.

IHO CL 11/2019 requested Member States (MS) approval of IHO Publication B-12 “Guidance on Crowdsourced Bathymetry”. 35 MS approved the adoption of B-12 (out of 38 replies).

Annex B of the CL was a questionnaire related to “Acceptance of Crowdsourced Bathymetry Activities in National Waters of Jurisdiction”. 13 MS replied “positive” and this CL 47/2019 provides a summary analysis of these responses. The IHO DCDB will filter out CSB data collected from the waters of all coastal countries not included on the positive list. This will include MS that have not replied as well as Coastal countries that are not IHO MS.

The IHO encourages MS who have not responded to review Annex B CL 11/2019 and, if possible, offer a positive response before the IHO Assembly in April 2020.

Similarly, the IHO encourages all coastal states of the SWPHC to provide their official position on CSB Activity in their areas of national jurisdiction to the Chair of SWPHC.

(Note: A MS / Coastal State can include "conditions" or "prerequisites" as needed.)

Director Kampfer summarised by stating that the CSB activity contributes to the greater goal

“To complete our global image of the planet”. All data contributions will help improve the accuracy of the GEBCO grid as the sole global dataset of seabed topography available. The GEBCO grid is where CSB and Seabed 2030 data collections are combined.

**Action 14: IHO Members who have not responded to CL 11/2019 to review Annex B of the CL and consider offering a positive response**

**Action 15: Chair to circulate Annex B to CL 11/2019 to Non-Members (IHO) in the region.**

**Non-Members (IHO) to review CL 11/2019 and consider sending a response to the IHO Secretariat (through the SWPHC secretariat)**

**16C. Disaster Preparedness and Response (in accordance with IHO Resolution 1/2005 as amended)**

Mr Adam Greenland briefed the meeting regarding the discussion on ‘Disaster Framework for SWPHC’ during the workshop held earlier in the week.

IHO Resolution 1/2005 ‘*IHO Response to* Disasters’ has an action for RHCs to include ‘Disaster Preparedness and Response’ as a permanent agenda item for their meetings. The SWPHC held a couple of workshops funded by the IHO CB Fund in which Disaster Response Framework was discussed. A framework for the SWPHC was introduced at the workshop held in conjunction with SWPHC16 Meeting in 2019. Recently the Meso American & Caribbean Sea Hydrographic Commission (MACHC) published the results of their framework and this work was considered at SWPHC workshop held on 10 February 2020. A draft Disaster Response Framework for the region was prepared and circulated to the workshop participants for review and subsequent adoption of the draft document at this meeting (SWPHC 17), followed by the initial work of identifying the coastal States points of contact and means of communication.

Members decided to adopt the Draft Disaster Response Framework (Version 10/02/2020) as an ongoing work (*doc. SWPHC17-16B*). Following SWPHC 17 the Chair will circulate the draft document and request Coastal States to identify points of contact and the means of communication (as per item 2 of the document). This information will be published on the SWPHC page of the IHO website.

Decision 16: To adopt the Draft Disaster Response Framework (Version 10/02/2020)

**Action 16: Chair to circulate the Draft Disaster Response Framework (version 10/02/2020), requesting Coastal States to identify points of contact and the means of communication.**

**Chair to collate the information.**

**17. Date and Venue of Next Meeting**

Lieutenant Commander Holokaukau Lakai offered to hold the next meeting in Tonga in February 2021, subject to the approval of relevant authorities in Tonga. As there were no other offers for hosting of the event it was agreed that SWPHC18 be held in Tonga in February 2021.

Mr Adam Greenland offered New Zealand as a back-up venue, if required.

Decision 17: To hold the next meeting (SWPHC18) in Tonga in February 2021, subject to the approval of relevant authorities in Tonga.

**Action 17: Tonga to confirm hosting of SWPHC18 Meeting in Tonga in February 2021 (deadline end September 2020).**

**18. Election of Chair, Vice Chair and CB Coordinator**

The Chair invited the Commission to consider nominations for the Chair and Vice Chair, taking into account Article 2 of the SWPHC Statutes.

Vanuatu proposed and Fiji seconded New Zealand as the Chair. Mr Adam Freeland accepted the proposal, and as there were no other nominations, New Zealand was elected the Chair.

Tonga proposed and Fiji seconded Solomon Islands as the Vice-Chair. Mr Tony Hanuagi accepted the proposal, and as there were no other nominations, Solomon Islands was elected the Chair.

The Chair stated that Mr Adam Greenland would be stepping down from the position of CB Coordinator. This was a key role in the region and excellent work was done in recent years under Mr Greenland’s stewardship – expanding the capacity building opportunities CB securing and securing IHO CB funding.

Mr John Lowell (USA NGA) proposed and United Kingdom Commander Matthew Borbash (USA Navy) as the CB Coordinator. As there were no other nominations, Commander Matthew Borbash was elected the CB Coordinator.

On behalf of the SW Pacific Island States, Lieutenant Commander Gerard Rokoua thanked Commodore Fiona Freeman and Australia for the pro-active role in leading the SWPHC for the past few years and assisting in the rapid expansion of hydrographic capability in these nations.

Decision 18: To elect New Zealand as Chair of the SWPHC

Decision 19: To elect Solomon Islands as Vice Chair of the SWPHC

Decision 20: To elect USA as the SWPHC CB Coordinator

**19. Review of the Actions and Decisions**

Chair invited the Secretary to present the draft list of actions and decisions agreed during the meeting. This was reviewed and agreed by the meeting participants. The List of Actions and Decisions is in **Annex A**.

**20. Closing Remarks**

In closing, the Chair thanked all participants for their valuable contribution and proactive discussions during the meeting and the workshop. A whole range of topics was covered and useful information exchanged in the national reports and the presentations by the external contributors. She reiterated that the SWPHC has a very strong reputation for proactively engaging, raising awareness and supporting capacity building. There have been many successes in recent years and there is need to keep moving forward with the prevailing good momentum.

The Chair acknowledged Mr Adam Greenland for his role as the SWPHC Capacity Building Coordinator for many years and the large amount of success in the region has occurred as a result of his efforts. The Commission looks forward to USA continuing the good work in the capacity building area.

She thanked Mr Robson Tari (Vice Chair) for the support and welcomed his continued engagement in the leadership role in the future. She also acknowledged the Australian Hydrographic Office team (Mrs Hilary Thompson, Mr Jasbir Randhawa, Mrs Melinda McMullen and Ms Alex Jara) for the excellent work in organising the week’s events.

On behalf of the participants, Director Abri Kampfer thanked Australia for the generous hosting of SWPHC17 and the Technical Workshop. He congratulated the Chair for her superb management of the meeting and the excellent arrangements and logistics.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Annex A**

**17th South West Pacific Hydrographic Commission Meeting**

**12-14 February 2020**

**Wollongong, Australia**

**LIST OF ACTIONS AND DECISIONS**

**ACTIONS**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Agenda Item** | **Action** | **Responsible** | **Deadline and** **Status (21/02/2020)** |
| 1 | 4 | to liaise with IALA and SPC to encourage coastal States that are not yet Members to join the SWPHC | Chair | permanent |
| 2 | 4 | to consider identifying opportunities in national/regional/international donor agencies to incorporate hydrography in development projects. | All members | permanent |
| 3 | 4 | to review their entries in the IHO Yearbook and C-55 and to provide the IHO Secretariat with the appropriate updates or to report no change. | All members | permanent |
| 4 | 4 | to consider submitting papers for publication in the International Hydrographic Review | All members | permanent |
| 5 | 5.3 | Chair to identify regional representative on the International Hydrographic Review Editorial Board. | Chair | 31 March 2020 |
| 6 | 5.4 | SWPHC MSDIWG through correspondence prepare draft ToR and RoP and seek volunteers for Chair and V/Chair among members. | MSDIWG members | 31 July 2020 |
| 7 | 6.2 | Chair to circulate the draft amended version of the SWPHC Statutes for comments by the Members. (post adoption of Resolution 2/1997 at A-2) Members to provide comments to Chair for collation and adoption prior to SWPHC18. | ChairMembers | 15 May 202015 September 2020 |
| 8 | 9.2 | SPC to invite SWPHC Chair and IHO Sec-General/Director to the next meeting of the Pacific Regional Energy and Transport Ministers Meeting. | SPC | Early 2021 |
| 9 | 10.3 | All members to provide CB requests to the CB Coordinator.  | All members | 29 February 2020 |
| 10 | 10.3 | CB Coordinator to compile the CB requests for support and submit to the CBSC18 Meeting in coordination with the Chair. | CB Coordinator& Chair | 31 March 2020 |
| 11 | 10.4 | UK and NZ to work with SPC\* and look into how the SWPHC should start addressing the challenges for implementing the SDGs of the UN Decade of Ocean Science for Sustainable Development.(\*Office of the Pacific Oceans Commissioner – part of PIF)  | UK (Sam Harper - lead), NZ and SPC | SWPHC18 |
| 12 | 15B | Chair to inform IHO Secretariat that Australia has been selected to occupy the seat (on IHO Council) allocated to the SWPHC.  | Chair | 21 February 2020  |
| 13 | 16A | Chair to inform DCDB Director to refer to national reports as submitted at SWPHC17 Meeting regarding their plans for CSB and Seabed 2030 | Chair | 29 February 2020  |
| 14 | 16B | IHO Members who have not responded to CL 11/2019 to review Annex B of the CL and consider offering a positive response  | Members | Ongoing |
| 15 | 16B | Chair to circulate Annex B to CL 11/2019 to Non-Members (IHO) in the regionNon-Members (IHO) to review CL 11/2019 and consider sending a response to the IHO Secretariat (through the SWPHC secretariat) | ChairNon-Members | 29 February 2020On-going |
| 16 | 16C | Chair to circulate the Draft Disaster Response Framework (version 10/02/2020), requesting Coastal States toIdentify points of contact and the means of communication.Chair to collate the information. | ChairAll coastal StatesChair | 29 February 2020 31 May 2020 |
| 17 | 17 | Tonga to confirm hosting of SWPHC18 Meeting in Tonga in February 2021 | Tonga | end September 2020 |

**DECISIONS**

|  |  |  |
| --- | --- | --- |
| **No.** | **Agenda Item** | **Decision** |
| 1 | 2 | To approve the Minutes of SWPHC16 (doc. SWPHC17-03) |
| 2 | 5.1  | To note the IHO Secretariat Report (doc. SWPHC17-05.1) |
| 3 | 5.2 | To note the Report of the 3rd meeting of the IHO Council (doc. SWPHC17-05.2)  |
| 4 | 5.2A | To note the IHO SPRWG Status Report (doc. SWPHC17-05.2A) |
| 5 | 5.3 | To note the SWPHC Report to IRCC11 (doc. SWPHC17-05.3) |
| 6 | 5.4A | To note the HSSC Report (doc. SWPHC17-05.4A) |
| 7 | 5.4B | To note the WEND Report (doc. SWPHC17-05.4B) |
| 8 | 5.4C | To note the MSDI Report (doc. SWPHC17-05.4C) |
| 9 | 7 | To note the national reports under agenda item 7 (docs. SWPHC17-07A to SWPHC17-07K) |
| 10 | 8 | To note the national reports under agenda item 8 (docs. SWPHC17-08A to SWPHC17-08G) |
| 11 | 9 | To note the organisations reports under item 9 (docs. SWPHC17-09.1 to SWPHC17-09.4) |
| 12 | 10 | To note the CB activities reports under item 10(docs. SWPHC17-10.1, SWPHC17-10.2, SWPHC17-10.4A, SWPHC17-10.4B) |
| 13 | 11 | To note the SWPHC ICCWG Report (doc. SWPHC17-11) |
| 14 | 15B | To select Australia as the SWPHC representative on the IHO Council |
| 15 | 16A | To note the letter from the IHO DCDB Director dated 27th January 2020 (doc. SWPHC17-16A) |
| 16 | 16C | To adopt the Draft Disaster Response Framework (Version 10/02/2020)  |
| 17 | 17 | To hold the next meeting (SWPHC18) in Tonga in February 2021, subject to the approval of relevant authorities in Tonga. |
| 18 | 18  | To elect New Zealand as Chair of the SWPHC |
| 19 | 18 | To elect Solomon Islands as Vice Chair of the SWPHC |
| 20 | 18 | To elect USA as the SWPHC CB Coordinator |