

21st South West Pacific Hydrographic Commission Meetings (SWPHC21)

Draft Minutes

1-Day SWPHC21 Pre-Meeting (p1-5) 16 February 2024 – VTC (Wollongong, Australia)

Opening

The Chair (Ms Hilary Thompson) opened the meeting with a traditional Welcome to Country and outlined the main objectives of the Pre-Meeting. The Chair then invited all participants to introduce themselves to the group.

Highlights of HSSC 15

HSSC Chair, Mr Magnus Wallhagen provided an update to the SWPHC community on the 15th meeting of the Hydrographic Services and Standards Committee meeting.

All participants were encouraged to be aware of the IHO S-100 timeline, which is critical if S-100 is to be implemented on time. Member states were encouraged to keep an eye out for the CL to endorse Edition 5.2.0 of S-100 – to be released in March 2023.

Product specifications for S-411 (Ice Information – WMO) and S-412 Weather and Wave Hazards (WMO) have been included in Phase 2 Route Planning Mode. This will provide important S-100 meteorology layers to be used in future S-100 ECDIS.

S-100 Infrastructure Centre - a project team has been established to develop the management documents for the proposed S-100 Infrastructure Centre. A progress report will be delivered to HSSC 16, 2024.

S-100 Security Scheme Project Team has been established.

HSSC continues to consider the "Sub-ECDIS" market – recognising that there are three stakeholders – smaller SOLAS vessels, commercial vessels and leisure craft. ECS Project Team has been established under the ENCWG to work through a number of identified issues affecting the Sub-ECDIS market.

A Stakeholders session was held alongside HSSC 15 – with some interesting perspectives:

- S-101 alone does not offer many benefits to end users

- Product specifications is only one requirement – we need to achieve S-100 data service coverage

- A roadmap that sunsets S-57 allows increased investment in S-100 ECDIS

Action 1: SWPHC Secretariat to arrange VTC workshops aligned to the release of S-100 Implementation IHO Circular Letters to provide support to member states for response.

Decision 1: To note the report of the highlights of HSSC15 and recommendations

Cyber Security

Nelson McMillan delivered a follow up presentation to the SWPHC on Maritime Cyber Security.

Four key takeaways as a part of an evolved leadership approach. Hydrographic leaders need new ways to carry out their responsibilities to stakeholders and to manage their risks.

A collaborative approach is needed across hydrographic agencies to secure our system of systems, which then evolves our collective systems cyber resilience.

The maritime sector has invested in cyber resilience, however operational technology is increasingly integrated and these physical assets (ships, tide gauges etc) are not necessarily as cyber resilient as other parts of the network.

In 2023, 4 major ports in the Asia Pacific suffered cyber-attacks, notably the DP World incident in Australia which had significant impacts on movement of freight into Australia. 5 incidents of damage to undersea cables were received – with significant impacts on millions of people.

S100 products and themes may increase the integrated sensors being used, which may increase the threat vectors for hackers into these systems.

Highlights of IRCC15

Mr Adam Greenland provided an update on the 15th meeting of the Inter-Regional Co-ordination Committee.

Decision 2: To note the report of the highlights of IRCC15 and recommendations

Highlights of report on GDMSS, MSI and NAVAREA Co-ordination (X, XI, XIV)

Mr Stuart Shepard (AMSA) provided an update on NAVAREA X.

JHOD delivered a presentation on NAVAREA XI

Mr David Wilson (MNZ) provided an update on NAVAREA XIV

It was noted that the area of the SWPHC encompasses three NAVAREAs, and whilst NZ and Australia are members of SWPHC, Japan is not, and greater communication is needed to assist JHOD in their NAVAREA Co-ordination responsibilities.

JHOD asked that SWPHC participants – Kiribati, Republic of Marshall Islands, Micronesia and Palau allocate points of contact to communicate with NAVAREA XI Coordinator.

NAVAREA XI also outlined capacity building activities undertaken in the region, and encouraged countries in NAVAREA XI to participate in future capacity building activities. All good -

Action 2: For increased communication between the SWPHC members of NAVAREA XI and the NAVAREA XI Co-ordinator in JHOD.

Decision 5: To note the reports from the NAVAREA Coordinators (X, XI and XIV)

Pacific Maritime Safety Program

Mr David Billington from Maritime New Zealand delivered a presentation on the Pacific Maritime Safety Programme, a joint initiative between the New Zealand Ministry of Foreign Affairs and Trade (NZMFAT) and Maritime New Zealand (MNZ). The programme started in 2012.

Working with seven countries; Cook Islands, Kiribati, Niue, Samoa, Tokelau, Tonga and Tuvalu.

The approach is a comprehensive framework, with five outputs:

- Community education and awareness, Regulatory capacity

- Supporting education and training of maritime personnel

- Domestic vessel safety, Search and Rescue and Marine Oil Pollution response

Overarching goal – Pacific maritime transport that is safe, environmentally friendly and meets international requirements.

Developed Pacific Maritime Safety Programme Country Plans – tailored to the requirements of each participant, supported by a calendar of events and projects.

AusSeabed

Dr Pip Bricher delivered an update on the AusSeabed Program.

AusSeabed was established in 2018 with the goal of improving the awareness, coverage, quality and accessibility and usability of sea bed mapping data through coordination and collaboration in the Australia region.

Achievements in the first five years have included empowering the community to deliver/co-ordinate better data through:

- Survey coordination tool, Product specs, Australian multi-beam guidelines
- Development of the QAX tool for data quality assurance
- Connection of first Hubs (CSIRO, AAD, WA DoT and NSW DPIE)
- AusSeabed Data Submission Service and Data Register
- AusSeabed Data Portal, Dynamic Coverage Services
- Ocean Mapping Wiki with Geoscience Australia/NOAA/CSIRO

Work Plan and Priorities Working Group

Mr Adam Greenland delivered a presentation on the work of the SWPHC Work Plan and Priorities WG. This work has mainly focussed on developing a Theory of Change Work Plan for the next three to five years, and to use the Theory of Change framework to structure the SWPHC Work Plan.

Mr Greenland and Mr Caie demonstrated the Work Plan development to date, in preparation for a more detailed activity at the SWPHC 21 meeting in Fiji where all participants would collaborate to develop the Work Plan and include priority action areas as identified by heads of delegations.

Decision 3: To note the work done by the WPWG to develop the SWPHC Theory of Change

ICCWG TOR Change Proposal

Ms Alison Cantrill (NZ) outlined the changes to the International Charting Coordination Working Group Terms of Reference. The changes have been developed to incorporate the role of the SWPHC S-100 Coordinator position. The draft ICCWG TOR document was circulated to the SWPHC attendees, with the revised TOR to be discussed and accepted at the SWPHC21 meeting.

Decision 4: To note the report of the ICCWG and to table the revised Terms of Reference at the SWPHC21 meeting in Nadi Fiji

Empowering Women in Hydrography

Mrs Hilary Thompson (AU), Chair of the SWPHC provided an update on the progress of the Women in Hydrography in the Pacific network. Highlights included Ms Agnes Goatee from the Solomon Islands Maritime Authority attending IHO Assembly and being presented with the Solomon Islands flag to mark Solomon Islands full membership of the IHO. SWPHC members have participated in a number of Women in Hydrography capacity building activities.

Close

21st South West Pacific Hydrographic Commission Meetings (SWPHC21)

Draft Minutes

3-Day SWPHC21 Meeting (p4 and 36)

28,29 February and 1 March 2024 – Nadi, FIJI

1. Welcome address by the Chair of the SWPHC

SWPHC Chair, Ms Hilary Thompson (AHO) welcomed participants.

Confirmation of quorum for meeting

Address by Minister for Home Affairs and Immigration, Hon. Pio Tikoduadua

Minister for Home Affairs and Immigration, Hon. Pio Tikoduadua addressed the Commission, congratulating the commission on their successes over the past years including with the Hydrographic Leaders Programme supporting leaders to engage internationally. He concluded with encouraging collaboration and partnerships for the lasting benefits of the region.

Address by the IHO Director

Address by Dr John Nyberg

2. Introductions

The Chair requested all participants both in person and online to introduce themselves to the meeting.

3. Approval of Agenda

[Doc. SWPHC21-05](#)

The Chair introduced the Provisional Agenda and invited comment before adopting the agenda. A minor change to Day three was proposed to accommodate flights.

Decision 6: To approve the agenda of SWPHC21

4. Approval of Minutes of SWPHC20 Meeting

[Doc SWPHC21-04](#)

The draft minutes of SWPHC20 had been circulated to the participants and is available on the website. adopted as the approved (final) version.

Decision 7: To approve the minutes of SWPHC20.

5. Matters arising from Minutes of SWPHC19 Meeting

[Doc SWPHC21-05](#)

Referring to the list of actions from SWPHC20, the Chair stated that some actions were complete, and the remaining were ongoing issues which will continue to be discussed at the Commission meetings and actioned as appropriate.

The Chair and action owners provided updates on the status of the actions as indicated in red below.

No	Agenda Item	Action	Responsible	Deadline and Status
1	4	Liaise with IMO, IALA and SPC to encourage Coastal states that are not yet Members to join the SWPHC	Chair	Permanent
2	4	Consider identifying opportunities in national/regional/international donor agencies to incorporate hydrography in development projects.	All members	Permanent
3	4	Review their entries in the IHO Yearbook (P-5) and Status of Hydrographic Surveying and Charting Worldwide (C-55) and to provide the IHO Secretariat with the appropriate updates or to report no change.	All members	Permanent
4	4	Consider submitting papers for publication in the International Hydrographic Review. Submissions to Elizabeth de Bol (elizabeth.debol@defence.gov.au) IHR Regional Representative by July / January.	All members	Permanent
5	4	Standardise MSI reporting template for RHCs via National Reports to reflect changes in service providers Template under review by WWNWS Document Review Working Group	IHO Secretariat	SWPHC21
6	4	Members to provide images to the Seabed2030 Image Stream	All	Permanent
7	4	Members to provide bathymetric data to the Seabed2030 Project using the Contributing data form.	All	Permanent
8	4	IHO Members to review their policy on data release and consider submitting a positive response to CL 21/2020 (IHO CSB Data for Public Domain)	IHO Members	SWPHC21
9	4	Non-members (IHO) to review their policy on data release and consider submitting a positive response to IRCC CL 01/2020 (IHO CSB Data for Public Domain)	Associate Members, Observer States and other Coastal States	SWPHC21
10	4	Coastal states to identify points of contact and means of communications for the SWPHC Disaster Response Framework.	TO, TK, TV	By June 2023
11	4	SWPHC WG to review the SWPHC Disaster Response Framework, to produce a 'redline' version and distribute to Members	NZ (lead), FJ, US	By June 2023
12	6.1	SWPHC is invited to encourage and propose to the IHO Secretariat High Level visits to those States not yet IHO Member States	Chair	SWPHC21
13	6.1	Members are encouraged to participate in the Empowering Women in Hydrography project.	All	Permanent
14	6.1	Members are invited to provide contributions for the IHO	All	SWPHC21

No	Agenda Item	Action	Responsible	Deadline and Status
		e-Learning Centre at KHOA		
15	6.2	SWPHC to consider extending the role of the Charting Regional Coordinator for the implementation of the S-100 Implementation Roadmap.	ICCWG	Agenda item 21.1 Complete
16	6.2	SWPHC to coordinate the efforts on the implementation of S-100, promote the cooperation and exchange of experiences, and identify CB requirements.	ICCWG	Agenda item 21.1 Complete
17	6.2 - 6.3	SWPHC to include the measurement of the SPI attributed by IRCC and HSSC in their annual Work Plans.	Work Plan WG	Complete
18	6.3	Members are encouraged to participate in the new HSSC Project Teams i.e., Baseline Symbology (subWG of NCWG) to support the automated production of paper charts from S-101 data.	All	Complete
19	6.4	SWPHC to consider role of regional charting coordinator to include S-1xx Products as RHC WEND Coordinator.	ICCWG	Agenda item 21.1 Complete
20	8	SPC to invite SWPHC Chair and IHO Sec-General/Director to the next meeting of the Pacific Regional Energy and Transport Ministers Meeting.	SPC	May 2023
21	8	IHO and SWPHC to engage with new IMO regional representative.	Chair IHO Secretariat	SWPHC21
22	8	SWPHC to engage with SPC to develop a consistent and coordinated approach to safety of navigation in the Pacific, between countries and interested partners and to engage with IMO through Pacific position papers and formal requests for support.	Chair, SPC, Members, Coastal States	SWPHC21
23	9.2	Members are encouraged to join the SWPHC MSDIWG.	All	Complete
24	12.2	Members to provide feedback on the Draft ToR and RoP of the SWPHC Work Plan & Priorities WG to the WG Chair.	All members	Complete
25	12.2	Members to provide feedback on the SWPHC Draft Work Plan 2022-2024.	All members	Complete
26	12.5	Host an intersessional workshop for the SWPHC on <i>S-100 and you – the impact of S-100 on all nations</i> .	US, CB Coordinator	Complete
27	13.2	Host an intersessional workshop on the IGIF-H for the SWPHC to raise awareness and lead the adoption of the framework by Coastal states in the region.	MSDIWG, CB Coordinator	Agenda item 16 Complete
28	13.3	Develop an open data value proposition for the region through collaboration with international/regional actors.	MSDIWG (lead), SPC	Agenda item 21.2 Complete
29	14.1	Share Pacific Resilience Project LiDAR data (MH, TO, VU) with charting authorities.	SPC	Q1 2023

No	Agenda Item	Action	Responsible	Deadline and Status
30	15.3	SWPHC to consider initiatives in support of the UN Decade.	All Work Plan WG	Complete
31	15.3	Members to register to attend virtual labs for UN Decade.	All	Complete
32	15.3	Members to consider submitting a concept note to participate in up-coming International Virtual Ocean Decade Laboratories	All	Complete
33	16.2	Host an intersessional, regional Seabed 2030 webinar	SWPHC CSB /Seabed 2030 Coordinator, IHO DCDB Director, CB Coordinator	Complete
34	16.2	Members are encouraged to participate in regional CSB activities	All	SWPHC21
35	19.2	SPC to make available SoN Project AtoN Risk Assessment report for Tonga to NZ.	SPC	Complete
36	20	Items to be raised at IRCC14 for discussion at 6 th Council Meeting (C6)	Chair	Complete
37	21	Members to consider producing content for WHD 2022	Chair	Complete
38	25	NZ to confirm hosting of SWPHC20 in NZ in February 2023	NZ	Complete

Participants updated the actions list and agreed on new deadlines.

6. SWPHC Statutes

[SWPHC Statutes](#)

No discussion required. No changes identified by members either prior to the meeting or in the meeting itself.

7.1 IHO Secretariat Report

[Report](#) and [Presentation](#)

Dr John Nyberg presented the IHO Secretariat Report. Dr Nyberg asked members to note the reformat of the report – highlighting content that is of interest to the members whilst trying not to repeat information that is covered by other IHO references.

2024 will be a critical year for IHO S100 implementation, Dr Nyberg asked all members to please note CL 43 that provided the timeline for Phase 1 S100 product specifications. The aim is to make all these standards operational by the end of 2024. By 2025 hoping that HOs will have the standards available so that they can start populating them with data. IHO CCL calling for the adoption of the new standards – planned to be issued in March with the outcome expected in HSSC in May 2024.

Status of IHO membership in the Commission – 99 members, with two currently suspended. UN member states are automatically accepted. IHO and Government of Monaco ready to assist nations to go through this process.

Please make sure that P5 and C55 are updated for your country.

Dr Nyberg noted that access to technology and internet speed in the regions is noted issue for virtual meetings, and thanked the UKHO for their support of the GEOMAC training course.

Dr Nyberg recommended that SWPHC members monitor Circular Letters and vote when appropriate – this is exercising your membership.

Decision 8: To note the IHO Secretariat Report and recommendations, particularly encouraging members to engage with IHO Circular Letters and to Vote.

7.2 Outcomes of the 7th IHO Council

Report

Adam Greenland, LINZ briefed the meeting on the outcomes of the 7th IHO Council, where the SWPHC was represented by NZ and Fiji with 30 nations in attendance.

Meeting outcomes included:

- Member states shared their national strategies for the establishment of S100
- HSSC – establishment of the electronic charting systems project team – under ENCWG – what is the future of the sub ECS market. Respond to those questionnaires.
- IRCC – establishment of an IHO Fund Generation Project team
- Council approved the new version of the S100 Roadmap for the S100 Implementation decade.
- Preparation of a new strategic plan – current is still relevant at a strategic level, so the objective is revision of the current plan

Greater Inclusion proposal – specifically for SWPHC member states. Assembly recognised the challenge – and tasked the SWPHC to come up with possible solutions. At C7 papers were provided from the IHO Sec General as well as from the AUS, UK, NZ.

Technology to increase participation as much as possible. A survey of member states, and chairs of WG and regional commissions has been developed. Timeline – within this Calendar year, for the results of both the survey and the resolution will be submitted to the IHO Secretariat for further action.

QR code for the survey put up on the walls of the meeting venue – provide feedback to Adam Greenland – encourage interaction and feedback.

8th Council – full in person meeting – however there is Live streaming on request – IHO member state can request to be a part of this Live-Stream.

CDRE Humphrey Tawake Republic of Fiji Navy– urged attendees to participate in the survey, ensure that inclusivity for small island states in the Pacific for our voices to be heard in the region. Take time to read the report itself.

US (John Lowell) thought Council was very productive this year. IHO Fund Generation project team being stood up, not enough members at this point. Would be excellent if there were some participants were from our small island nations. Industry, IGO and NGO can also participate in this Project Team in particular, a spectrum of voices are needed in the Project Team.

Decision 9: To note the report from the IHO 7th Council.

- Action 2:** For all members to participate in the IHO Survey on Inclusive Meetings and respond to the CL.
- Action 3:** For SWPHC Secretariat to provide a workshop opportunity to discuss the Inclusive Meetings CL prior to deadline.
- Action 4:** IHO Fund Generation Project Team – encourage participation from the SWPHC region.

8. National Reports and Presentations

Docs: SWPHC21-08B to 08U

The Chair Ms Hilary Thompson, invited States to present their National Reports.

8B. Australia

[Report](#) and [Presentation](#)

- Hydroscheme – three programs underway at any time – one in preparation, one in delivery and one in finalisation. HydroScheme Review Panel in August each year to talk about the priorities and collaboration. The HydroScheme forward plan is then released in October each year.
- As a major milestone, funding for the next 10 years of the HydroScheme Industry Partnership Program has been confirmed by the Australian Government. Deeds have been refreshed and there are 9 prime contractors.
- Annual meetings with our Primary Charting Authority countries – this has also included a Tri-Partite meeting with JICA regarding their projects in Solomon Islands and attendance at PNG NMSA meeting

8C. Fiji

[Report](#) and [Presentation](#)

- Vice Chair for the SWPHC – small Pacific country – large island state and through this was a part of a delegation that supported IHO to Council.
- Successful visit from HMNZS Matataua – consultation before they came regarding the areas that needed survey – and personnel from FHS deployed on board
- Fiji became 49th member of IC-ENC
- Successful visit to the UKHO in September – thank you to UKHO as PCA for their support
- Training – female team member successfully qualified as a Cat B – and is now a practicing Cat B surveyor. Women in Hydrography achievements – 27 office staff, 12 are women and this is a great achievement.
- Acknowledged the contribution of partners, IHO, UKHO, AHO, NZ, SPC support regarding technical issues with the equipment.

Future Focus

- Opportunity to utilise SDB in certain areas – particularly where it is expensive to collect and survey in the outer islands of Fiji.
- National hydrography co-ordination committee. Moving to Maritime Essential Services Centre (MESCC). Trying to get more people into the hydrographic department.
- MOU with the UKHO has been approved.

8D. France

[Report](#) and [Presentation](#)

- Main achievements during the year – surveys on the Loyalty Islands, Chesterfield Islands, Ile de Pins, French Polynesia – Hau Atoll, Rapa Is
- Challenges regarding surveys – promising surveys for French Polynesia and Tahiti, LIDAR survey, to support the hosting of the surfing events for the Paris Olympic Games.

- Green light to begin Lidar survey in New Caledonia. New boat in the region (1 year), not a survey boat, but has survey capability including a moon pool. Another ship in the region now as well.
- Crowd Sourced Bathymetry - direction from the French Prime Minister
- SDB – active on this very important topic – Bathy-Sat – not a black box, you need to understand what is happening inside the process.
- Trials for ground truthing in Ile de Pins – New Caledonia- expecting a fully operational solution in 2025.
- Develop the S101 program. Three phase – prediction, distribution and display.
- Portal available for any mariner to access maritime safety information – PING project – to be launched in March.
- 27 Feb 2023 – agreement signed between SHOM and SPC concerning; environment protection, water level monitoring, role of the ocean in climate change.

8E. New Zealand

[Report](#) and [Presentation](#)

- Rebranded charts for Samoa and Tonga published.
- Produced the first official high density ENC (hdENC) in conjunction with the Port of Napier.
- Collaboration between NIWA-Nippon Foundation to map the seabed following the Tonga volcanic eruption.
- Collaborating with other NZ agencies to test the value of a cloud-based data mesh.
- Challenges with Maritime Digital Transformation, in particular adequate resourcing to deliver S-100 implementation roadmap and delivering existing products whilst moving to S-101.
- Challenges in developing the NZ MGI WG work programme.
- IMO Member State Audit for its maritime obligations, LINZ is working the Maritime NZ on an action plan to respond to the findings. The Chair suggested that those States who have impending audits to reach out to others who have already undertaken IMO Audits.
- New Zealand also launched their S-100 video – which provides a very simple explanation of the benefits of S100.

Action 5: NZ National Report – post the results of the hydrographic risk assessment to the SWPHC website

8F. Papua New Guinea

[Report](#) and [Presentation](#)

- Procurement of a single beam capability CEESCOPE – to be used for survey of ports and harbour areas, with data provided to the AHO for charting purposes.
- Stakeholder awareness workshop held 7-9 August in PNG – covering ATON, nautical charts – with 25 attendees from Dept of Ports and Transport, NMSA, AHO, RAN
- Recognising the need to align hydrographic activities, national planning department attending the meetings as well. Recognition of the need for a National Hydrographic Co-ordination Committee
- Ship Inspectors Workshop 21-23 August 2023 – importance of hydrographic charts
- National Search and Rescue workshop 13-15 November 2023 – opportunity to present from Hydrography perspective.
- Chart of Rabaul – linked into disaster response activity. Well received by the Maritime provinces. Charts made available to these provinces as a part of disaster recovery.
- Training in MSI, applied hydrographic survey program at the Fugro Academy, AHO sponsoring S5 B and S8B programs.

- MOU with Youth with a Mission – ship going to remote areas – but have been collecting single beam data in the cruises – sometimes very remote areas – MOU in place to access the data and enable it to be shared with the AHO for charting action

SWPHC Vice Chair commended PNG commitment in expanding and improving their operations.

8G. Samoa

[Report](#) and [Presentation](#)

- Samoa ATon Regulations developed with SPC in 2023 – in final review in 2024. Thank you to SPC for assistance with these preparations.
- Challenges - Samoa – one commercial port – Apia. High traffic area between two Islands and the main Port for the country, and it is noted that the draught for the inter islands ferries are 2.35m and 2.5m which is the dredged depth of the main channel – this means that regular dredging is required.
- Climate change challenges in Samoa – 23 January 2024 – worst swell – which swept a private foreign fishing vessel aground. There is a project to upgrade the breakwater to mitigate strong swell entering the Main International Port.

8H. Solomon Islands

[Report](#) and [Presentation](#)

- MBES survey from 2022 JICA funded project that supports hydrographic surveying in Solomon Islands, in 2022 survey of main port in Honiara, in 2023, completed the survey of the second port at the port of Noro – was previously surveyed by the RAN in 2019.
- Second part of the project covers the entrance to the Port of Noro, Munda Bar to Diamond Narrows Bar – third area covers the Blakett Strait – supporting safe and efficient navigation.
- Very grateful and thankful for JICA assisting Solomon Islands in the conduct of these surveys.
- Mini survey to demarcate the limits of the races for the Pacific Games being held in Solomon Islands – members to consider opportunities for donor agencies to include hydrography – the hydrography to support the games is a good example of this.
- Engaging with the national government through the port committees, explaining what hydrography is all about.
- SIMA – medium and long term aspirations – procurement of Multibeam systems – charts available and accessible by all. This is more important for the small boat users in tribal and customary rivers.

Decision 11: To note the excellent progress of the joint JICA, SIMA and AHO project in Solomon Islands

8I. Tonga

[Presentation](#)

- New MSI appointed for Tonga
- ENC is now available (a first)
- TO is now the authority – the rebrand has now reflected Tonga sovereignty
- New charts of the Haapai group
- National hydrography committee met in December 2023 – to discuss possible works for Tonga especially on surveying and bathymetric and coastal development
- Tide gauges installed after tsunami
- Only CAT A surveyor has resigned in December (no qualified surveyor), Tonga Navy building a hydrography office at the moment and hoping to build on this capability into the future.
- Need to survey Tonga waters after tsunami and volcano.

8J. United Kingdom

[Report](#) and [Presentation](#)

- GEOMAC course – highly recommended, it is the beginning of a lifetime of engagement.
- Kiribati – Outer Islands Infrastructure Development Project – Seabed 2030 data, would love to provide that to SEABED 2030 – let us know if you are willing for your data to be shared.
- Revised MOU signed with Cabinet for Fiji.
- S100 – La Manche/English Channel – joint project, international boundary, maritime boundary, cross grids, and different systems – this is putting pressure on companies to provide products.
- Culture change – attitude to our customers – customer first. Focus on customers, SOLAS commitments. S100 obligations that are coming – we collectively have a job on our hands not just to get the technology right but to also sell the benefits of S-100
- Support for the SPC – Commonwealth Development Office, High Commission in Fiji. Two RN ships in the region, and encouraging members to visit.
- Offer substantial support for the HLP in the coming year.
- Admiralty charts – not moving away from paper until such time as the users are able to move across to electronic services.
- Crowd Sourced Bathymetry – draft policy in place

8K. United States

[Report](#) and [Presentation](#)

- NOAA has two new hydrographic vessels under construction with legacy vessels are coming off line
- Additional work done for Kiribati whilst they were in the region. NGA using industry to collect SDB for Tuvalu and Palau.
- Sail drone – autonomous vessel - derived automatic product of seamounts useful to confirm or deny the existence of these sea mounts. Partnered with Australia and New Zealand – trial in international waters.
- Prepare for S100 – try to rescale and simplify the product framework in 2025 – need to almost create partnered s100 data for s101 and s104 to create value for the users. We are mostly dealing with the same technology for the product globally. HOs need to learn who owns the data we need for these new products – who is going to create the new products. There is no overarching strategy for all this.
- No-one is doubling your workforce just because you are doubling the product you manage – working on the leadership aspect. Making sure that the decision makers are buying into the S100 framework. Complicating this – legacy production lines are still in place.
- HADR – open up the data holdings, on a publicly available website – disaster analysis, impacts to the land side, global traffic density service – heat map of vessel traffic product from NGA – all publicly available.
- Beyond the Blue – multi agency project – Illuminating the Pacific campaign. – First target is Palau in 2024 through a multi Agency program

Action 6: Consider inclusion of: [Satellite Derived Bathymetry](#), [Regulation of Autonomous Vessels](#) and [Electronic Chart System Regulations](#) for future meetings

Action 7: Coastal states encouraged to respond to the ECS Project Team survey on ECS regulations in their maritime states

8L. Vanuatu

Presentation

- Organisation structure slide. Draft stage for their legislation, going to parliament in July.
- Government has endorsed the Hydrographic Governance Framework.
- Capacity building achievements – two Cat B qualified hydrographers – funded by JICA
- Install new Aids to Navigation – cruise ships significant aspect of the shipping traffic for Vanuatu.
- Construction of a domestic wharf in Port Vila – ten domestic wharves – construction of five pilot houses, and purchase of used tug boats from Australia as a part of the Port infrastructure.
- Hydrographic equipment is still needed.
- More than 70% of Vanuatu waters are not surveyed or the charts are out dated.
- Approval to establish Hydrographic Office in 2020 – with Charlie Maniel joining last year.
- Main goal: 2028 – 80% of waters to be surveyed.

8M. Cook Islands

Presentation

- LiDAR collection by Woolpert for coastal and flood mitigations collected and will be made available.
- Challenges in engagement with government, funding, capability; lack of a Hydrography & Geospatial Strategy for Cook Islands.
- Considering replication of IGIF work done in Kiribati, and to modernise geodetic network.
- Capacity building on the outer islands as a part of the survey deployment
- GNSS reading on boat at sea level to complement manual tide gauges.
- Providing updated charts and made available through LINZ – data available next month. LIDAR data set will be shared with the PCA for safe keeping.
- Three companies undertaking exploratory surveying – willing to make this available to Cook Islands – then LINZ and SPC and to GEBCO 2030 <http://www.sbma.gov.ck/csd-1>
- Geospatial data licence agreement (short form and long form) Cook Islands government agencies licencing form for other institutions.
- IHO membership in discussion with Minister for Foreign Affairs.

8N. Indonesia

Report

- Updated Charts Charting progress – 642 paper charts, 610 ENC cells created.
- March to May 2023 Flores Sea, 36 locations discovering 24 undersea features including sea mounts. Names features submitted to SCUFN 36.
- JalaCitra 3 in the Flores Sea – successfully identifying undersea features, international cooperation.
- Increasing capacity. MSDI Portal significant achievement in changing data access and collaboration.
- Contribution to working groups and regional hydrographic commissions:
 - WHD International Seminar
 - Hosting of ENC WG 8 (Sept 2023) and HSWG 5 (Sept 2023)
 - Hosting of EAHC Steering Committee 9 and NIOHC 22 meetings
 - MSS ENC demonstration in January 2024
- Personnel attending - Long Hydrographic Course India (Cat-A), H2 Course Australia (Cat-B), IHMEP US (Cat-B), UKHO Cartography (Cat -B) SHOM Cartography (Cat-B)
- Training delivered: Cat- A Joint Pushidrosal and Bandung Technology Institute, Cat-B Pusdikhidros and Pushidrosal
- MSDI Portal – Developed and maintained by Pushidrosal Indonesian Hydrographic Data Centre

- Linked to related maritime national portals including Energy, National Geospatial Agency, DGST
- Joint Survey Activities;
 - Sumatra Campaign – Indonesia and France – Malacca Straits June to August 2023
 - Indonesia and Australia Timor Sea – September to October 2023.
- New Ocean-Going Survey Vessel being built, ready in Q4 2025 (Pushidrosal) and BRIN acquiring two 75m vessels.

8O. Kiribati

[Report](#) and [Presentation](#)

- Surveys conducted within the Gilbert group under contract to IIC with UKHO undertaking the role of client rep.
- Growing team – training underway supported by AHO and KOTIIP – focus on women in hydrography
- Infrastructure development – contractor doing design and build for ATOns on Gilbert Island Group
- Development of a Roadmap for the Marine Division (supported by Asia Development bank and a draft Kiribati National Hydrographic Strategic Plan to be tabled with Cabinet by July 2024.
- Sea riding and training opportunities - collaborative project with Ink Fish
- UKHO delivered hydrography introduction, IIC “on the job” training, MSI Training in Fiji July 2023 and SPC Tides Training
- Development of MSDI – Marine Spatial Planning Coordination Committee – relevant subcommittees on developing plans and work plan.
- Future – interested to become a full member of the IHO – recognition of the need to have a sustainable program, moving forward.

8P. Nauru

[Presentation](#)

- New port and wharf under development
- Removal of tide gauge from old infrastructure with new gauge being installed April 2024
- Transfer of Nauru survey data set to UKHO as Nauru PCA underway – hoping to have 1st set of Nauru paper charts ready in time for new Port opening (November 2024) with ENC to follow.
- Challenges include poor weather affecting port project and changes in Government.
- Future - considering a cost benefit analysis of being a full member of the IHO

8Q. Niue

[Presentation](#)

- Aton risk assessment at Beveridge reef – special management area – it is Niue’s crown jewel. Risk assessment – SPC project, and HMNZS who transferred people to Niue for the assessment.
- Commanding Officer hosted a Women in Maritime event on board
- Niue tide gauge offline since 2020, team from SPC and BoM has brought it back on line.
- Enhancing Climate Information and Knowledge Services (ECIKS) project – across 5 island nations in the Pacific. To establish integrated climate and ocean information services and multi-hazard early warning systems (MHEWS) in the Cook Islands, Niue, Palau, RMI and Tuvalu
- Wave buoys deployed, and Tsunami warning equipment procured with a 12 nm range
- [Ocean Conservation Commitments \(OCC\)](#) sponsor - \$250 helps protect 1 sq km of Niue waters. All about helping with marine resilience – only available to individuals at the moment
- Still in the process of resolving legislation – still need to agree maritime boundary with Tonga.

8R. Palau

[Report](#) and [Presentation](#)

- Established new leading light at West Passage entrance. Continued with upgrades to AToN. Two new personnel on how to do Maritime Safety Information – providing cross training to existing staff.
- Challenges include, no Terms of Reference for the NHCC
- Plan to apply for a grant to establish a hydrographic office, will discuss further with the PCA, in particular to produce local charts to improve safety for visiting super-yachts. Cost benefit analysis to be done on IHO membership

8S. Republic of Marshall Islands

[Presentation](#)

- Secure web portal – share relevant data back and forward – sharing SDB for disaster response purposes.
- MOA with the US. NOAA coming out in 2024-2025 for survey.
- AToN replacement project on point.
- Hydrographic Governance – progressing slowly - need to enact legislation for hydrography.
- Capacity Building – is an obvious constraint – and more information to the community on hydrography
- MSI work and communication with Japan as the NAVAREA CO-Ord has commenced.

Decision 10: To note all National Reports and presentations.

Day 2

10. Relevant International/Regional Organisations Reports and Activities

10A. International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA)

Mr Omar Frits Eriksson gave an overview of IALA's work, promoted membership and their work to encourage locally produced aids to navigation and develop standards. Of particular note the South West Pacific region is becoming more standardised with their buoyage. IALA invite coastal states to engage with them to help meeting international obligations for maritime safety, including providing education.

A major activity for IALA is the shift of IALA from a Non-Government Organisation to an Inter-Governmental Organisation. New convention for a new IALA being developed, with agreement at the 14th General Assembly. French government is the supporting nation. Paris Convention – 51 countries signed the IALA Convention – which means that those countries will then ratify through their own parliaments.

30 ratifications are needed to start transformation (27 signed and ratified already) – need three more – Turkey has signed off on this. 29 Countries (almost) so only need one more!

Transition period can take up to 9 months – terminate the IALA, create new IALA, transfer all assets - first general assembly of the new IALA in Singapore late 2024 or early 2025.

World Wide Academy – has been working for 12 years – supporting worldwide compliance – using the harmonised system. Enlighten, educate, engage are the three pillars of the Academy.

The Chair thanked IALA for their continued work in the region and noted their progress towards transition to an Inter-Governmental organisation.

10B. International Maritime Organisation (IMO)

[Presentation](#)

Mr Vincent Job – Senior Deputy Director, Subdivision for Maritime Development • Technical Cooperation and Implementation Division.

ECDIS performance standards – NCSR 10 (May 2023), approved amendments to resolution MSC.530(106) to facilitate a standardized digital exchange of ships' route plans. Amendments are expected to be adopted by MSC 108, in May 2024.

Phase-in implementation starting with ECDIS equipment installed on or after 1 January 2026. Information providers will need to provide data in accordance with both the new and the old standards.

Recognition of Iridium as a GMDSS provider. Amendments to SOLAS chapter IV adopted to change the traditional concept of using a single GMDSS satellite service provider (i.e. Inmarsat)

Working with NAVAREA and METAREA Co-ordinators, to consider the implications of multiple GMDSS providers – critical safety related activity.

IMO Integrated Technical Cooperations Program (ITCP)

- Targeted approach – undertake a needs assessment, use of the country maritime profile and then IMSAS audit results, aligned to the UN Development Goals.
- Support for Technical Co-operation – Regional Presence Office. 7 regional offices – Pacific - signed MOU for Fiji regional presence, and commenced recruitment of regional coordinator aiming to recruit before the second quarter of 2024.

10C. Pacific Community (SPC)

[Presentation](#)

Mr Salesh Kumar delivered a presentation on the work of the [Geoscience, Energy and Maritime Division](#) of SPC.

Pacific Safety of Navigation Project funded by International Foundation for Aids to Navigation (IFAN) Three Phases; Governance, then Capacity Building (risk assessments, MSI knowledge workshops), and finally – Infrastructure phase – for the actual aids.

Bougainville Coastal Waters project – provisions of the Maritime Zones Act – autonomous region of Bougainville. Provide PNG with the skills and knowledge of GNSS Surveying and Mapping.

Maritime Boundaries looking at extending to three-year project. 40 countries participating, and over 50% women. A good example of the Pacific way – Fiji and Vanuatu agreed to resume maritime boundaries talks. Extended Continental Shelf Claims – focus of the project. Areas identified include: Ontong Java Plateau – FM/SB/PG • Eauripik Rise – PNG • Massau Ridge – PNG • Enclave between AU/SB/PG

Climate and Ocean Support Project in the Pacific (COSPPac) – climate, ocean and sea level information to strengthen climate resilience, a collaborative partnership with SPC, Australia (DFAT) and New Zealand (MFAT). Extended to a 3rd phase now - \$45M in funding (DFAT and MFAT) over four years. Ocean prediction services – increasing ocean warning services – real time wave observations.

FAME Division of SPC vessel – tender out for a new vessel custom built MBES 2500m deep, with a focus on fisheries research, hoping to be on line by end 2026.

Action 8: SPC and SWPHC to collaborate to better synchronise training opportunities and capacity building in the region

Action 9: SPC encouraged to share data with the IHO DCDB

Action 10: SPC to advise SWPHC of the geographic extents of missing data from extended continental shelf claims so that members can see if they can assist or advise ships of opportunity for collection

10C. Pacific Geospatial and Surveying Council

Presentation

PGSC Chair, Mr Vaipo Mataora, updated the SWPHC on the work of the Pacific Geospatial Surveying Council.

Independent regional body advancing geospatial standards and capacity working to the PGSC Strategy 2017-2027. Supported by SPC. The PGSC Strategy is a world first regional survey and geospatial strategy.

Vision: Sustainable development in the Pacific enabled by world class geospatial information and surveying services

PGSC Charter has been signed by 11 Pacific Islands Countries and also been ratified by the Fiji parliament.

5th PGSC Meeting – 2020 Outcome Statement.

6th PGSC – 11 December in Sydney – Council election, with Vaipo elected as Chair. PGSC Charter Review Terms of Reference for PGSC Women network, PGSC Young Surveyors Geospatial network.

PGSC working groups as aligned to their strategy. Supporting countries to modernise their Geodetic Reference Frames and align to the Global model.

Highlight the recent activities of the PGSC over the year. Deployment of SPC staff in Solomon Islands. PGSC aligned to UNGGIM.

Fiji has completed their Country Action Plan. Tonga plan has been launched (National Geospatial Action Plan) as well as Kiribati.

Activities with SPC – country member states to manage their geospatial requirements, providing capacity building in the member states. Communications into the community communicating and promoting to understand what GIS is all about, and what it can offer the community.

10D. Japan International Cooperation Agency (JICA)

Presentation

Mr Kei Takashita provided an update on Technical Cooperation of Hydrographic Survey and Electronic Navigational Charts.

Japan commitment to a free and open Indo-Pacific – promote regional stability and prosperity. At 9th Pacific Islands Leaders Meeting in 2021 Japan committed to capacity building training for marine charts in the Pacific.

Hydrography for Charting and Disaster Management Training – six month course in Japan in cooperation with Japan Coast Guard. Recognised by IBSC as Cat-B program, 456 trainees across 45 countries from 1971 until 2023.

The Project for Development Support of Electronic Navigational Charts for Honiara and Noro Ports– improvement of Honiara Port. 12 experts for capacity building hydrography and ENC training in Japan – with hydrographic survey equipment and software being provided to Solomon Islands at the completion of the project. Outcome will achieve a significant improvement to navigation safety for Honiara and Noro Ports.

Products produced with AHO – ENC QA/QC training at AHO. Thank you to the AHO for support.

Decision 12: To note the reports provided by international and regional partner organisations IALA, IMO, SPC, PGSC and JICA.

Action 11: JICA to provide details of how to apply for their hydrographic training programs to CB Co-ordinator and communicate to members

11. Pacific One Maritime Framework

Presentation

Ms Faranisese Kinivuwai Team Leader Maritime Transport SPC, introduced the [Pacific One Maritime Framework \(POMF\)](#) to the SWPHC, the first time this presentation has been delivered in any forum. The POMF has arisen from the 5th PRETM meeting in May last year, Resolution 39.

The development of a Pacific One-Maritime Framework (POMF) intends to create a single framework that articulates strategies to cater for sustainable maritime sector needs, priorities, and ambitions of PICTs in the context of the Blue Pacific and aligned with the technical support of regional and international maritime sector entities and development partners. Signed an agreement with the European Union

Provides a platform for PICTs to reflect on their current challenges and articulate their aspirations for safe, secure and sustainable maritime transport services comprehensively, informed by their circumstances, yet framed in the context of region-wide responses.

Expectation: the national and regional plans will be aligned to the mandates and plans of regional and international development partners ensuring that required technical and financial resources will be targeted to assist PICTs in implementing their maritime development objectives;

Framework focus: needs, priorities, challenges and emerging issues in the maritime sector in the Blue Pacific; with clear actions and targets focusing on mobilising appropriate resources, finances, infrastructure, technology and capacity building for a safe, resilient, green, clean, digital, gender-just maritime transport for the Blue Pacific Workplan for the Pacific One Maritime Framework – started in February 2024 – planned two steering committee meetings – planned for the month of April and December 2024, expecting to launch the framework in February 2025.

Invitation to the SWPHC to be a part of the POMF to include the hydrographic contribution. Save the date for the Steering Committee Heads of Maritime Meeting in Fiji 22-26 April 2024.

Decision 13: To acknowledge the progress of the Pacific One Maritime Framework and acknowledge the invitation for the SWPHC to attend the Pacific One Maritime Framework Steering Committee

Action 12: IHO and SPC to commit to refresh the IHO SPC MOU to reflect current strategies and frameworks in the region – aim to sign in GEBCO Week in November (Fiji)

Action 13: Connect the gender programs – Women in Hydrography, Women in Maritime and PGSC Women in Spatial and Women in Surveying

12. SWPHC Work Plan and Priorities Working Group

Presentation

Mr Adam Greenland, LINZ, Chair of the SWPHC WP&PWG updated the SWPHC on the development of the SWPHC Work Plan for the next 3-5 years. The Work Plan has been developed using the Theory of Change framework. This has resulted in two draft outputs,

- [Theory of Change Narrative](#)
- [Draft Workplan Diagram](#)

The SWPHC then worked in small groups to consider the draft Workplan – and provide feedback on IHO/SWPHC Goals, Targets, Activities, pathways & narrative. Heads of Delegations to identify 3 highest priorities.

Group 1 – Daniel Miners

Target with most votes – use capacity building to improve capacity of members states.

Evolving the goal hydrographic capacity for safety of navigation whilst this might not be a PCA priority it is a priority for the Pacific Islands.

IHO Goal 2 – is also a priority. Improving knowledge of the worlds oceans and sea floors, and countries not being left behind was important.

Gap analysis too broad, need to be more focussed, supporting SPC, sharing resources with other forums, expanding risk assessments, highlights of IGIF 8. All linking to hydrographic capacity building. Promoting value proposition to Government officials, if we don't do this then none of the rest will happen.

Group Two Tion Uriam

IHO – priority area – adoption of UNIGGIM Hydro – Goal number 2 increasing the use of hydrographic data for the benefit of society.

Commission – new activities: communication plan/strategy, MSI countries allowing ships to go through waters without going through appropriate applications – further training in terms of competency, is it possible to streamline funding for that?

Empowering women is a key area. Data capacity and data portal, strengthen and take a regional approach for this. S121 – maritime boundaries, S122 marine protected areas.

Key focus areas – value increase influence and resources, place at the table, more increased focus on sustainability in the region, Increase confidence, global partnerships. Broader network beyond the IHO linked to a Louder Pacific Voice.

Group Three – Vaipo Mataora

Priority areas – split in two IHO strategic goals and climate change – split two things. No country left behind – priority.

Outcomes – prioritised in terms of funding and resource mobilisation – funding to enable the region to attend IHO meetings.

Activities: gap analysis – be specific on what is the gap – human resources, equipment – be clear on what the gap analysis is focussed on.

Non ECDIS mandated vessels – include in the strategy.

Data sharing, and broader network beyond the IHO, linking together the gender programs. Engage with the IHO and IMO on various projects. SPC MOU.

Important comment – to include gender inside the long term outcomes of the goals.

Group 4 – Nick Pion

5 stickers – priority area – process of assessing need for each of the countries –IHO technical visits, CB surveys and gap analysis are a priority for the PICs. Know exactly what is needed.

Broader networks beyond the IHO and with a louder Pacific voice, HLP cohort 2, create an engagement plan with the SPC and other communities.

Delivery of S100 goals, delivering these goals will require us to deliver differently, move past paper and S57 production, S100 co-ordination and S100 workshops.

Already talking about open data and making this accessible.

Create a strategy for hydrography in all areas related to maritime safety – HO is valued in the government and has increased resources

Decision 14: To note the effort of the WP WG to develop the SWPHC Theory of Change as a key artefact to support the development of the SWPHC Work Plan

Action 14: Members to review the SWPHC Theory of Change Work Plan Narrative and provide comment back to Chair of the WPWG by March 2024

Action 15: WP WG to provide updated draft WP to members and members to provide comments by May 2024

13. Highlights of WEND WG 14

[Presentation](#)

Mr Michael Andrew (AHO) delivered an update on WEND WG meeting 14, held in Norfolk Virginia 20-23 February 2024. The meeting was well attended with 43 attendees.

WEND has also been tasked to update S11 ENDS – the S100 products beyond S101. [WEND principles](#) remain the same for consistency.

Determine the preparedness for the 2026 S100 objectives. HOs have provided reports – and the Chair will take this and report back to the IRCC. Readiness evaluation has been quite varied.

Close interest in [S128](#). Paper from Canada, outlining their position. Wish to use 128 as a co-ordinating tool across their agencies, so that the customer knows which Agency to go to.

PRIMAR are providing very high level of technical support to IHO, recently delivered tool set to IHO and training will be provided to IHO.

IC-ENC providing member co-ordination, and providing funding support to the development of standards, so that we can get as close as possible to achieving s100 standards.

Industry stakeholder forum – interesting discussions and presentations at the links. [Chartworld](#) and Furuno – HO need to reconsider their data division models – users want all their data in one place, and then choose what they want to use. Ship charterers want to be able to access the route planning aspects so that they can benefit from the reduction in emissions – discussion on how to fund further studies to for the real world benefits of S100 implementation.

Q1 2025 for first S100 products. Challenge – availability of test data across all the themes.

We will use national returns to determine readiness, and to understand coverage.

Post 2026, WEND hopes to improve the survey methodology to automate the reporting. First ECDIS availability, Q1 2025 – this is fast – OEMs do care about S100. Systems will be available for the mariners.

Next WEND WG in 2025 in Wollongong Australia

Decision 15: To note the report from the WENDWG14

14. S100 Implementation Progress

[Presentation](#)

Mr Robert Cario and Verena Bosselmann-Borsos delivered a joint presentation on S100 progress in Australia and New Zealand as well as the S100 Coordinator role.

Australia and New Zealand – S-100 Stakeholder WG established under the Intergovernmental Committee on Surveying and Mapping (ICSM). Broad group of stakeholders covering variety of themes in the S1XX series.

S100 WG members will:

- Participate in meaningful discussions and consultations to drive the harmonized implementation and maintenance of S-100 based services;

- Facilitate and coordinate S-100 products' generation, their quality and usage; ensuring the alignment of these products with the S100WG goals set in the S100WG Work Plan;

- Work collaboratively to ensure that product management activities are in alignment with the established priorities of the affected organisations to enable sound decision making;

- Facilitate cooperation in international engagement with S-100 relevant international bodies and provide a forum for evaluation of international work and its impact on Australia. Harmonised implementation of s100 services.

S100 roadmap endorsed by the Members in August 2023 and a workplan developed around these milestones. In 2024, looking to accelerate the S100 education and awareness at a national level.

Focus group has 14 members. Priorities, scope, budgets and requirements, Port Adelaide, Sydney, and then look at more complex areas like the Torres Strait later.

Dual fuel – Q1 2025 – starting with our high priority Ports.

Verena Bosselmann-Borsos introduced herself as the SWPHC S-100 Coordinator, and outlined the results of her S100 questionnaire – 13 replies. Key challenges for SWPHC include: difference in readiness amongst member states, getting stakeholders together, limited access to technology and internet connectivity in some areas, diverse languages in the region and not keeping pace with the implementation.

Addressing these challenges will need strategic co-ordination. Understanding priorities and the regional need – raising awareness and maintaining communication on progress and challenges.

This year – workshop focussed on the benefits of S100 – capacity building workshop that could provide hands on experience in our region. And a report that demonstrates the complexity of implementing S100 in each country of the SWP Region.

Decision 16: [To note the progress towards the implementation of S-100 in the SWPHC region](#)

15. Highlights of the IHO MSDI WG

[Presentation](#)

Ms Caitlin Johnson, Chair of the IHO MSDI WG briefed the SWPHC on the highlights from the 14th MSDI WG held in Genoa Italy, February 2023.

UNGGIM – collaboration, Open Geospatial Consortium and IHO MSD WG – holding joint meetings.

Update C17 3.0 Strategy for MSDI. Goal of a relatively finalised document for IRCC 15. Governance aligned to the IGIF 9 goals.

Members participated in a drafting session for IGIF H – which was then adopted at the UNGGIM WG MGI Grounding event in the Arctic used to progress the Federated Marine SDI Pilot.

UNGGIM – next meeting in Bali, C17 Adoption. Highlight the achievements of the SWPHC MSDI WG.

Decision 17: To note the presentation on the IHO MSDI WG 15

17. FIG/IHO/ICA International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers

Presentation

Rod Nairn, CDRE Rtd, updated the SWPHC on the programme of the IBSC, outlining recent changes to board composition and the IBSC workplan.

The IBSC programme is facing a number of challenges including deficient submissions, working across multiple time zones and locations and board succession.

Recognition of individual subjects – developing guidelines at the moment. Full subjects from the syllabus with aim to make hydrographic education more viable for both individuals and institutions. Will also assist Continuous Professional Development activities, and the professional certification schemes when they find gaps in individual knowledge.

IBSC Guidelines Review - Since 2017, massive changes in technology – data volumes have increased exponentially, IT processing power and transfer speeds increased, and move towards cloud and processing and storage. S100 is being implemented.

All of these changes lead to a case where we need to look at the standards are the sufficient to take us through the next decade. IRCC has endorsed a plan to review the S5A and S5B – by 2026. First consultation workshop in London in 2023. Expect an IHO CCL which will ask for consultation and input to the review. Annual meeting in Hamburg, FIG Commission 4 in working week in May, and then Brisbane further consultation workshops with the regional HCs.

Hope to have this approved by IHO in 2026. A series of questions have been developed by IBSC and will be promulgated by Circular Letter, encouraging everyone to contribute to inform the new standards.

Action 16: IBSC to request that Canada release their Future Hydrographer paper to the SWPHC members.

Action 17: SWPHC Secretariat to engage with SPC to identify training and sea time opportunities to support professional hydrographic certification in the region.

17. Australasian Hydrographic Society – SWP Region Update

Presentation

John Maschke CAPT Rtd updated the SWPHC on the activities of the [Australasian Hydrographic Society](#) in the SW Pacific region. AHS is a non-profit organisation promoting hydrography including:

- AHS Achievement Awards – organisations and individuals
- AHS Education Award – \$3500 annual award for individuals who are students within an academic organisation, such as a university, technical college or other approved tertiary, secondary or

- vocational organisation, and b. are conducting study or research into subjects directly or indirectly related to hydrography, the maritime environment or maritime spatial history
- Encourage the general public to be a part of the society to increase the awareness of hydrography.

Pacific membership of the AHS (\$15 FJD) hoping to get some more members in the SWP – to make hydrography something that is spoken about across the region.

Conferences and seminars – Fiji/Suva, regional hub. Seminars in December and in June. Around WHD, workshops – 80 to 100 attendees. Regular seminars in Australia and New Zealand, happy to use these seminars as a platform for IHO and other capacity building.

Key event in 2024 - HydroSpatial Conference – 9-12 April in Hobart.

Open to arrange events in SWP if funding is made available, seeking assistance from IHO and regional hydrographic commission to provide education and capacity building. Seminars – include broad audience – law, tourism, research, academia, tourism. Support from industry to put the seminars on. Facilitate things happening through networking.

16. Solomon Islands – Digitalisation of Navigation

[Presentation](#)

Mr Thierry Nervale, Director Solomon Islands Maritime Authority presented to the SWPHC on the Solomon Islands Strategy for Digital Navigation.

SIMA Act of 2018 has formalised SIMA responsibility for hydrographic survey and charting. SIMA Corporate Plan 2024-2027 focus on improved safety of navigation, environment protection and response

By 2050, expectation is that Solomon Islands population will double, and SI is expecting that the domestic fleet will double – travel between islands will double – safety of navigation is very challenging. Need to increase the connectivity across the Islands.

Improve security and maritime safety – e-navigation for all, navigation safety information available at all times.

New Committee in Solomon Islands - Oceans 12 Steering Committee - excellent opportunity to explain how hydrography serves other purposes, so that the stakeholders could understand what hydrography delivers for SI.

Challenges - Solomon Islands – cannot afford developing programs for MBES – it is too expensive. Looking at the available options, ways to achieve the e-navigation strategy.

Decision 18: To note the report from Solomon Islands Maritime Authority on their progress and plans towards digitalisation

Decision 19: To note the presentations from the AHSCP, IBSC and the Australasian Hydrographic Society

18. Hydrographic Leaders Program

[Presentation](#)

Pleased to announce that SWPHC will be running HLP Phase 2 with support from the UK Government. UKHO has agreed to fund the HLP Phase 2.

HLP 1 feedback - Investing in hydrographic leadership development contributes to building a leadership pipeline that represents the nations of the region. A leadership programme is part of achieving this. • The

core elements of the programme are the right ones. An active and engaged Steering Group, a Programme Convenor (from the region), weekly meetings, a mentor programme, workshops focused on behavioural and technical leadership skills, guest speakers and the opportunity to work together as a group of participants on real issues faced by the region. • Running the programme online works. A face-to-face event would have a significant positive impact on building a participant network and on learning. • Keep the principle of a development focused programme and not a participant evaluation or assessment.

Practical aspects of the program will be informed by HLP1 lessons, and recognising that a face to face event as a part of the program would build on the network and learning.

Vaipo Mataora – Cook Islands spoke to his experiences from HLP1 – improved his leadership skills during the 6-month program, a lot of different areas covered under the program, capability, obligations under the SOLAS program. Law of the Sea and maritime boundaries. Participants learning from each other – managing governance requirements, communicating with PCAs. Awareness of where information is available on the IHO website.

Dan Miners spoke to his experience – as a PCA participant, he learnt a lot from the Pacific Island participants on the program, as well as building friendships in the region.

Legacy from the program – a long lasting program for the region, just the beginning, still be with the commission in many years to come, and being looked at by other Commissions.

Decision 20: To note the support of the United Kingdom Hydrographic Office to enable the second Hydrographic Leaders Program in 2024

Action 18: SWPHC to implement Cohort 2 of the Hydrographic Leaders Program

Action 19: Members to note the second round of the Hydrographic Leaders Program, consider nominees and respond to the CCL

19. Capacity Building

Presentation

CDR Matt Borbash, USN provided an update on SWPHC Capacity Building. Three key meetings held since SWPHC20.

- CBSC21 Intersessional Meeting VTC, 13 March 2023
- CBSC21 Meeting 7-9 June 2023, Tokyo, Japan
- CBSC22 Intersessional Meeting VTC, 7 February 2024

COVID postponed training activities complete, and there has been an increase in the volume of capacity building activities completed. E-learning remains a focus, and as the CB program funds decline we will need to rely more on e-learning.

CB budget is now set at 60,000 EUR. This is insufficient to meet capacity demand which is estimated at 578,000 EUR.

IHO Fund Generation Project team established to seek alternate methods for funding for capacity building. Workloads for capacity building management needs to be acknowledged.

Regular Programmed Capacity Building Activities

- Master of Science Programme in Hydrographic Science at the University of Southern Mississippi (USA), 2 students, Cat A, sponsored by the Republic of Korea (1 year) [CL27/2023] - Normal invitation in August of previous year
- GEOMAC courses in Cartography, 7 students, Cat B, UKHO - sponsored by Nippon Foundation (5 months) [CL03/2024] - Normal invitation in February
- Hydrographic Survey Programme in Nautical Cartography, 10 students, Cat B, sponsored by the Republic of Korea (20 weeks) [CL44/2023]

MSI Training July 2023 – held every two years (last one in 2018) – COVID contributed to five-year gap between programs. High turnover in MSI co-coordinators – lot of new people getting trained.

Disaster Response Framework Feb 2024 – review the draft Disaster Response framework and then test the framework and consider lessons learnt in the region. A recommendation from the workshop - establish a Disaster Response Co-ordinator – to manage updates to the framework, maintain the contact lists for Annex B (annual), support the Chair as necessary in the time of a disaster.

Capacity Building Strategy Working Group has met five times in 2023-2024. Capacity building audit undertaken, but the development of the CB Strategy for SWPHC will be deferred to SWPHC22. 8 responses- Cook Is, Fiji, Kiribati, Palau, Papua New Guinea, Samoa, Solomon Islands, Vanuatu. Key findings included: demographics, desire to grow, personnel/workforce, equipment, capability state of governance and relationship with PCA. All respondents want to grow their capability base. All of the PIC are constrained by resources available for the work they want to do and countries that have an active institutional arrangement are in better health – hydrographic governance is critical.

Key Questions:

- How are we going to do capacity building into the future?
- How do we get CB activity funded?

Future capacity building efforts – equipment donations, excess equipment that can be donated? Software and training, limited licence capability – to provide some training, opportunity for industry to seed a potential customer base. Legal consulting – broader PCA nations, articulating policy issues. Institutional arrangement technical visits – we need to show the value of the work we do. How do we communicate or build a marketing package on the benefit of what we do to the nation.

Jens Kruger – we need this to ground us. Pacific is defined by strong collaboration – regional organisations, tertiary education, environmental and applied research. All our members have the same aspirations and the same challenges. Not necessary for every country to go through meeting the maturity model of the IHO – one of the reasons we set up the regional hydrographic survey team. These are technical resources. SPC is your regional body, who will work at your request to meet needs.

SPC have led and supported countries with legislation – maritime legal advisor as a part of the maritime transport team – legal drafting, policy development.

SI: Funds to train Cat B – no budget for hydrographic survey – be trained in theory, but not actually do a survey for 5 years – will it be possible for funding to include after training, practical surveys – using SPC equipment, qualified and then certified. Systems to do some surveys following the professional training.

Practical example – survey in Vanuatu – modernise the charts – good support from UKHO. Survey brought the SI hydrographer over to work with SPC on that Vanuatu survey – an example on how this can work.

Decision 21: To note the Capacity Building Co-ordinator Reports to the SWPHC

Decision 22: To note the report from the 2-Day Capacity Building workshop on Disaster Response

Action 20: SWPHC Secretariat to add Disaster Response as a permanent agenda item for SWPHC meetings

Action 21: Upload the Disaster Response Framework to the IHO Website

Action 22: SWPHC Capacity Building Strategy to be developed and presented (rolled over from SWPHC21)

Action 23: Australasian Hydrographic Society to provide historic paper on Pacific Capacity Building opportunities to CB Coordinator

Action 24: All to provide capacity building ideas and concepts to the Capacity Building Coordinator for development into CB bids

Action 25: Establish a Disaster Response Co-ordinator role

Action 26: Industry partners to articulate capacity building activity they can do to bridge the gaps – Chair to write to industry partners.

Action 27: SPC to provide inventory of equipment accessible to the SWPHC members and processes for access and deployment

Action 28: Consider inclusion of contract management and procurement training as a part of capacity building workshop

21. IHO Data Centre for Digital Bathymetry

IHO DCDB – recognised IHO repository, FAIR principles – committed to providing easy and open access for all public data. 3700 surveys -70tb uncompressed data. Main contributor to the GEBCO grid. – 25% of the grid filled.

SWPHC 2022 webinar series. – these resources are available on the IHO website.

When you are going somewhere just turn on your echosounder – contribute the data to GEBCO.

Contracting surveys – whenever the vessels are in transit, they should have the MBES turned on – even if you don't have the capacity to process – contribute to SEABED2030 and we will process it for GEBCO grid and return to you.

Permits for collecting data in other countries waters – LINZ approach is a very easy way to directly grant permission to collect data transiting in NZ waters – please collect this data, send it to us. [LINZ template](#).

SEABED 2030 – Peru – engaged in the meeting and creating new connections in the same country.

Building bridges between the east and the west. Next year meeting happening in Nadi, November 2025. Similar format – two days Pacific voices space to present their work. Workshop to follow similar format to last year, if there are specific topics you'd like to contribute please let Belen know. Two for one, Seabed 2030 and GEBCO guiding meetings together. Extend invitation. Small budget available for travel, can't promise everything, but try to support presenters to the meeting.

20. Crowd Sourced Bathymetry

[Presentation](#)

Mr Stuart Caie provided an overview of Crowd Sourced Bathymetry (CSB) in the region.

CSB is seen as an opportunity to gain data in areas that are not of priority interest to the national hydrographic offices by collecting depth measurements from individuals using standard navigation instruments doing normal activities.

CSB in the Pacific

- PALAU • 17 Data loggers installed • Data from 6 vessels successfully retrieved and shared with SB23030
- KIRIBATI • 2 Data loggers installed • Signed the IHO-CL to allow CSB data during SWPHC21
- FIJI & SAMOA • Seabed2030 Data loggers for testing purposes

Data loggers are accessible technology – free, small and easy to use. Reach out to Seabed 2030 for how we can support you with this work.

Decision 23: To note the reports of the SeaBed 2030 Pacific Regional Centre, SWPHC CSB and Seabed2030 Co-ordinator

Decision 24: To note the report from the IHO DCDB and the potential of this resource for the Pacific community

Action 29: AU/NZ to investigate the development of survey portal for the SWPHC region to request hydrographic surveys and identify areas of hydrographic interest

Day Three

22. UNGGIM IGIF Implementation and Case Studies

Mr Andy Coote – Director Consulting Where – updated the SWPHC UNGGIM IGIF Implementation referring to two case studies – Philippines and New Zealand.

22A. Philippines

Strengthening their Geospatial Infrastructure – project has been underway for over a year, across the marine and land domains. Using the World Bank methodology to create an Action Plan that links needs of the country to socio economic impact.

Baseline assessment – to socialise the project with stakeholders. Spatial information management – recommended quick wins, things that can get you into a better position whilst the work is undertaken and demonstrate value to decision makers.

Second tool used align projects align to the policy documents in the country – using the language of the decision makers. Identify the geospatial alignment to policy drivers, for example, improve government services, climate change, and improving human and social development. Tip – make sure you use the language of your government policy advisors.

Political commitment in the Philippines, a number of different angles where geospatial can achieve govt objectives – agriculture, automation for govt services, or responding to climate change. Weaving in geospatial into your govt objectives.

Assessing these benefit in terms of economics – Asia Pacific economic production – earth observation – estimated value of applying into different fields - \$650M per annual USD.

22B. New Zealand – Marine Geospatial Information Group.

Working for a number of years to increase the impact of Marine Geospatial Information over the country and different sectors. High level of stakeholder engagement across all sectors.

MGI Group recognised a number of issues with the project.

- Not particularly well aligned to the Government agenda.
- Lack of case studies which cover the whole of the sector.

- No business case for investment
- Missing Strategy

Collaboratively deliver outcomes that deliver social, environmental and economic benefit. Identify the key drivers, what are the use cases for the policy drivers and define what successful would look like and a set of actions to deliver to that.

Three on line workshops – adopt the mind set of being government ministers – this is how we need to think to be able to express what we do in the ways they can understand.

Identify key govt policies – covering a wide range of govt objectives. Second session, developing a set of use cases that described a set of outcomes and key investments needed. Prioritised the use cases against criteria.

Return on investment and time scales for achievement. Identify initiatives that could be delivered quickly.

May take longer to achieve but can deliver benefits. Policy Clusters – these are the things that we expect our ministers to talk about. These are mostly the same across our communities. Some more important than others.

Second section – revenue generation, improved efficiency, societal benefits, decision support, investment, innovation and protect the environment – make sure that what we are putting forward can be easily expressed in terms of what the politician are looking for.

Next steps – complete the prioritisation, and the develop and advocacy package – put the outcomes, into proposition slides, summary of the use case and then the implementation in terms of time scales and cost – link to the business case to describe the benefit. Compelling and strategic case to take to decision makers.

22C. Kiribati

Mr Tion Uriam spoke to Kiribati IGIF Kiribati Marine Spatial Planning Coordinating Committee (KMSPCC) Hydrographic and Geospatial Data Management Committees as sub-committees • Building on previous knowledge of IGIF to continue refining country action plan/work plan • Data management, policies, access, etc.

Looking for advice from SPC and industry partners in developing physical infrastructure • Workshop with IUCN BIOSCAPE (through MFMRD) – Marine Spatial Planning • 11th of March workshop to be facilitated NZ and NIWA (focusing on the restructuring of the PIPA in terms of MSP). • Kiribati is now part of the SWPHC MSDI WG

Kiribati acknowledges support from partners in progress to date and notes the need for higher levels of co-ordination.

SPC Supporting Comment we need to articulate the value chain for politicians (outputs and activities). It is fundamental to have these messages clear – for example, a cost benefit ratio of 4.40 for every dollar invested you get \$4.40 in return. This is powerful messaging for the decision makers.

The [World Bank Blue Transformation of Maritime Transport](#) report – makes number of recommendations but it didn't give us the fundamental case for investment.

Additional resources from the World Bank on [Sustainable Finance](#)

Action 30: SWPHC, SPC and PGSC to collaborate on potential World Bank projects in the region

23. UKHO Update – IGIF Maturity Assessment

[Presentation](#)

The IGIF-MSDI Maturity Roadmap is intended to provide guidance for those within Governmental departments or agencies, who are actively planning an MSDI (Marine Spatial Data Infrastructure) implementation, which is independently aligned with the broader IGIF (Integrated Geospatial Information Framework) developed by the United Nations. Such stakeholders include all organisations who create or consume geospatial data. Using the roadmap created under the tool kit that has been updated by the IHO helps you to identify your roadmap, to develop your pathway and to then assess through a numerical score how far you have progressed.

UKHO hasn't assessed itself before and it is important to see where we are now, and where we need to go. UKHO has improvement activities underway, so this tool helps to value those improvements.

What do we want to achieve?

- improve understanding of MSDI – more than just a portal it is a data management infrastructure
- Involve all, to make sure there were no blind spots. MSDI is about the whole organisation.
- Creating a gap analysis.

How? Workshop – invested time in the stakeholders being involved. Reviewed all the questions in the tool kit, made sure that the language of the questions was relevant to the UKHO, so the team can understand what is being asked. One workshop for each of the 9 puzzle pieces, light hearted approach and contributions from all. Communications plan, and keeping colleagues in the loop.

[IGIF road map](#)

Decision 25: To acknowledge reports on the UNGGIM IGIF implementation including updates on projects in the Philippines, Kiribati and New Zealand.

Action 31: Members to consider preparing an IGIF Baseline Assessment for their countries that could be collated and presented to Ministers in 2026 at the 6th PRETMM (SWPHC & SPC PGSC)

24. SPC Pacific Sea Level Rise Project.

[Presentation](#)

Andrick Lal (SPC) presented on the COSPPac Pacific Sea Level & Geodetic Monitoring program, which has been running since 1991 with dedicated support from the Australian and New Zealand governments and SPC.

5 deliverable themes – infrastructure, products and services, communication, capacity development and governance, supporting a primary goal to generate an accurate record of variance in long-term sea level for the Pacific and to establish methods to make data readily available and usable by Pacific Island Countries. Collecting both sea level and land motion data in order to understand the dynamics of sea level rise and effects on Pacific Islands communities.

Phase 3 has commenced with \$45M from DFAT(Australia) and a further \$15M from MFAT (New Zealand) 15 countries – 14 sites in the Pacific which does not include Palau and Tokelau at the moment.

[Report](#) presented on the vertical land movement – published by GA. Analysis on the combined GNSS and land data together. Aim of Pacific Sea Level and Geodetic Modelling component – precision levelling monitoring survey done every 18 months in the PICs – one dimensional – collecting the heights, and then

reference to the GNSS core station as well. Assessment telling how much the land is moving – data is stored by GA, and accessible on line. Tide gauge station data, available on the BoM website.

GNSS refresh stations upgrades – solar panels to provide power to cores, install satellite communications.

Tides training – happened in March 2023 – BoM SPC and GA. Visited tides and GNSS stations in Lautoka.

Showcasing the QR codes for the COSPPac Pacific Tide App. Managing the project data for this as well.

Tides apps and [calendars](#) are valued by the Pacific community.

Data access – University of Hawaii website, GNSS cores incorporate to IGIS network as well. GA through their data centre provides the data to the Pacific Islands communities as well. BoM has released the [Absolute sea level in the Pacific](#) report.

Palau discussed the issues of not having a tide gauge on the northern island. SPC looking to mobilise some of the temporary gauges in Palau. To be taken off line.

Decision 26: To note the presentation from the Pacific Sea Level Rise Project

25. SWPHC International Charting WG

[Report](#)

Mr Robert Cario, Chair of the SWPHC ICCWG provided an update on the work of the group since SWPHC20.

Achievements

- Awareness – virtual S100 Workshop – hope to hold these more regularly to educate and provide an opportunity for engagement and interaction with regional co-ordinators.
- Engaging with the WEND WG on our SWP direction
- Update to the SWPHC ICC WG Terms of Reference to reflect the establishment of the S100 Coordinator role. Circulated prior to SWPHC21.

From an INT Charting perspective, the region is very stable. Currently have 56 int charts in region L. Please see report for detailed list of updates and new editions.

Paper INT Chart Update: NOAA is completing a five-year program to end all raster and paper nautical chart production by 2025. Production of all NOAA paper nautical charts (including paper INT charts), raster navigational charts (NOAA RNC®), and related products will cease in December 2024. For a list of latest editions and pending chart cancellations, visit: <https://www.charts.noaa.gov/MCD/Dole.shtml>

The SHOM project “Unified Cartographic Source” will review methodology (included automation) to produce French charts with a data-centric approach and the principle of “single charting scale per area”. This project will include a homogenisation of chart scales by Usage Band and a review of all the French charts to eliminate discontinuities between products: SHOM plans to start its production (by France) with this new method mid-2024. The southwest Pacific should be reviewed after 2028.

NOAA’s Office of Coast Survey is in the process of re-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. Additionally, re-schemed ENCs will have a standardized size with two scales per usage band. See report for detailed tables.

NGA’s Maritime Safety Office is in the process of transitioning its DNC coverage into a worldwide ENC grid lease see report for detail on the standardized grid and sizes.

UKHO is in the process of re-scheming their ENC portfolio. Started around the UK, but plan to apply their “model grid” to GB ENCs in other regions in due course.

Status of ENC coverage in the area – 1505 cells in the region.

SWPHC ICC WG Terms of Reference – have been updated to reflect the establishment of the SWPHC S-100 Coordinator. The changes were outlined to the meeting.

Decision 27: To note the report from the SWPHC International Chart Coordination WG and their progress to co-ordinating S100 efforts across the region

Action 32: Publish the SWPHC International Chart Coordination Working Group Terms of Reference Revision 1.2

26. SWPHC MSDI WG

Presentation

Was established in 2021 with the purpose to promote sustainable development and use of the oceans, seas and inland waters in line with the United Nations Sustainable Development Goals.

Achievements have included:

- six virtual working group meetings
- review and update to Terms of Reference
- Focus on the SWPHC Work Plan – progressing action Adoption and Implementation of the UN GGIM IGIF (H)
- Sharing policies
- Communicating “[Why should we share data?](#)”
- Introduced [video recordings](#) to increase accessibility

Dr Pip Bricher has stepped down as Vice Chair. It has been a privilege to work with Pip in this role.

Seeking a new Vice Chair – if you are interested in the role or joining this group, please see

helen.phillips@ukho.gov.uk

[IGIF Hydro](#) published in 2023. Specific to the marine domain – supplements the main IGIF docs. How are we going to break this down into something we can achieve this year.

Video recordings: The 9 IGIF Strategic Pathways were studied in detail and then a 15 minute video created to provide an insight to the pathway for people across the SWP region – special thank you to LINZ for hosting these videos on the LINZ YouTube channel.

Why should we share data? The publication has been well distributed. Broad (non hydrographic) interest including articles on AusSeabed, as well as social media. Thank you to Belen Jimenez Baron for taking carriage of the communications plan.

Solomon Islands: raised a question regarding royalties from SI data, and whilst this isn’t a huge amount it is significant for a small agency like SIMA.

Helen Phillips: raises a valid question – we need to recognise the value for hydrographic data. Important to note that open data is very important, open doesn’t always mean free. Open data can also mean discoverable data – and there may be a fee to go alongside it.

Decision 28: To note the report on the SWPHC MSDI WG and to acknowledge the achievement of the “Why we Should Share Data” publication

Action 33: Secretariat to investigate royalty payments for data and provide information back to Solomon Islands

30.1 EOMAP Presentation

Presentation

Dr Magnus Wettle – Managing Director EOMAP Australia delivered a presentation on Satellite Derived Bathymetry focussing on the Pacific. – SDB

Please see presentation for details of recent Pacific SDB projects over Fiji, PNG, Torres Strait, Fauro Island (Solomon Islands). Over 20,000 sq km of area covered – validate against ICESAT.

Dr Wettle presented a number of slides detailing the basics of Satellite Derived Bathymetry, these are available in the presentation.

The merits of training data, machine learning and AI was discussed. All about being fit for purpose – if an SDB method provides training data (for example machine learning algorithm). ICE Sat is not the same as airborne LIDAR. Even if you have good quality data the transects can be 90km apart. Bottom line - be aware of what you are using.

Requesting SDB can be easy – specify the extent, spatial resolution is the pixel size. Refer to the UKHO survey specs for SDB. The provider needs to then do all the work.

Moving onto technology developments – WATCOR X – stand-alone SDB software

SDB Online – running in the Cloud, directly hooked up to the European space agency – draw a square, process it on line – once you are happy then you can down load just the SDB, can use multi image processing. All you need is a browser and run it on your phone. Use cases can be reconnaissance planning – so optimise your planning so that your ship is out for the best time.

Sponsored and delivered a workshop at the 22nd Pacific Maritime Boundaries meeting – well attended, with around 10 agencies contacted EOPMAP for on line demo accounts.

IHO SDB Best Practice Project Team final stages of turning the standard into a final release.

Chair: Disaster Response - how quickly could we use SDB for change detection in various areas to support disaster response. Answer - How quickly can you see the sea floor again – water turbidity is the main issue. Perhaps it is an area that doesn't have up to date charts – there is an opportunity to archive the data in the week or two before the event, for example predicted tropical storms.

30.2 Consulting Where

Presentation

- Business Consulting - business planning, strategy development, business process transformation, value proposition assessment and investment appraisal.
- Research – market size and future growth prospects and national studies into the value of geospatial information to the economy in terms of GDP.
- Technical Consulting – due diligence, customer-side advisory services, defining solution architectures, project management, data audits and standards expertise.
- Training – courses in business case development, project management, principles of geospatial technology and quality assurance, all delivered by experts in their field.
- Overseas Aid projects – IT support for donor organisations.

Expertise in different domains in terms of geospatial data – undertaking economic impact assessment, and highlighting where we can see are the non-market benefits, which is very important if you are presenting to politicians and other decision makers.

<http://www.consultingwhere.com/>

30.3 Fugro

Presentation

Paul Seaton – Director Hydrography and Coastal Resilience delivered a presentation on Fugro projects of interest in the region.

Australian Maritime College (AMC Search) and Fugro partnering to deliver a CAT A program in Tasmania. This will be a great achievement having a CAT-A hydrographic surveyor program in the region.

Fugro is also a partner with the UN Decade of Ocean Science – embedded staff in UN. Have donated more than 2M square km of survey data to this program, encouraging data sharing, and getting more out of the data that has been collected. Alignment between Fugro goals and the Sustainable Development Goals.

[Sea 'ties Regional Workshop](#) July 2023 - The Sea 'ties Initiative aims to facilitate the development of public policies and the implementation of adaptation solutions to support coastal cities threatened by sea level rise. [Sea 'ties Regional Report – Adapting Coastal Cities and Territories to Sea Level Rise in the Pacific: Challenges and Leading Practices](#). Working closely with the various stakeholders in the region – simulating sea level rise, current historic and coastal flooding, available on line and available real time, mapping and digital surface models. Using the AI and machine learning to monitoring, looking at how the seabed habitat is changing over time. Meaningful tools that people can use to adapt.

SmartCoast - Partner with EOMAP and James Cook University – creating a digital twin of parts of the Torres Strait. Horn Island – extensive mangroves – monitoring mangroves – map with Lidar, overlay with EOMAP tools and monitor change without having to resurvey. Scientific validated data assets to provide to the carbon credit market.

[Fugro | Creating a Safe and Liveable World | Leading Geo-data and Consultancy Services | Fugro](#)

30.4 Ocean Infinity

Presentation

Andrew Price from Ocean Infinity provided an overview of Ocean Infinity achievements in 2023.

This has included a significant upgrade to the Ocean Infinity fleet and increased use of the DriX unmanned survey capability.

The efficiencies realised from using the DriX in the survey of Nelson New Zealand were also briefed, and the use of DriX in this project meant that 22 fewer Sea worker (ship) days were required. This is not only an efficiency for the company, but it also results in a “greener” hydrographic survey with less fuel burnt. These same efficiencies were realised with DriX use off Darwin, but in this case 41 days ship time were saved.

DriX use does require more development including working with AMSA to bring DriX into Class 2 which would enable over the horizon operations.

Future – a 36m survey vessel is earmarked for the region, and remote control centre planned for Hobart.

www.oceaninfinity.com

30.5 P&O Australia

[Presentation](#)

Mike Drake, Director Marine Operations presented on P&O Australia operations in the Pacific, with a focus on chart improvements that could be expedited in the region.

Vigias – a reported danger, in deep water, whose position or existence is doubtful.

Impacts on route planning, safety and efficient operations, case study example of a 5m depth reported on planned track between Tonga and Fiji.

Second example of a nav warning on the planned passage between Vava'u, Tonga and Lautoka, Fiji.

Inter Island Trading - Regular Domestic and International trading between South Pacific Nations. Impossible to avoid poor quality ZOC when trading in this general region.

Risks identified in 2014 have largely been addressed for Tonga domestic traffic. Recent near miss has highlighted the need for sea lanes between South Pacific nations to be better charted.

Potential solution of well surveyed highways – similar to the approach used for the Kimberly. Does sufficient data already exist to support this approach? This could support new routes and aspirational destinations where communities want tourism to address urban drift and provide opportunity for their youth.

Pacific Explorer in Samoa to support CHOGM 2024. The Theme, "One Resilient Common Future: Transforming our Common Wealth, "looks at the core pillars of the Commonwealth through a resilience lens". Marine resilience is a perfect fit.

Action 34: Secretariat to include links to economic studies from SPC and P&O available into the Minutes

30.6 Teledyne Geospatial

[Presentation](#)

Peter Schwarzberg provided an update on Teledyne Geospatial operations which includes CARIS software, Lidar and three dimensional mapping.

S100 is a major focus this year CARIS experts providing input to the IHO and the community.

What are the goals – plan for the journey to S100. S100 to be the base of the data into the future. Move their data source into S100, includes migrating S57 and converting S57 to s100. Need to ensure that you are taking the staff with you on that journey, bottom line, plan for your organisation moving forward.

Sharing information with the community.

Tools are becoming available to do these activities. Increasing the workload, but hydrographic offices are not getting any more people.

30.7 Raymarine

Reflections on the industry and where we are at. Producing products mainly for the recreational market – 50,000 SOLAS, 200,000 semi professional, 200M pleasure craft – it is a very large segment, who also need safe navigation. From the past it is quite obvious that HO's are producing charts for the commercial sector, but there is little consideration for the leisure sector.

Sub ECIDS market – concerns in the industry as to what the S100 world will mean for them – closely monitoring what is happening with the development of s100.

Recreational market can be the first group to use products – S111 and s104 in particular.

There is a very thorough and proper quality assurance before these products can be produced and put out into the market – these users still need information, and there is often not enough info in the ENC for them. This type of data can come from local companies, local state, private producers and SDB, LIDAR surveys that have been done by industry and government. Can also come from Crowd Sourcing.

Valuable data and possible to use – for our types of users. Final word please take into consideration that there are large numbers of pleasure craft in the waters and that group need proper and good data to enable access to the good data for safer navigation.

US question – use of digital information on smaller class vessels (Sub Ecdis) as Ray Marine consider their future – when do you think you could deliver an S100 capable system. And at what point do you think you could get to the user being able to enhance the data provided by the HO. Certain vessel classes may need additional data, crowd source information, when will this type of deliverable be met by industry.

Not a matter of when – need to have more data available. Currently there are still places in the world where you cannot get ENC, and sometimes new charts are not available due to copyright as well. Not s57 coverage in all places. Some hydrographic offices are very advanced – Raymarine already testing data and introducing into their systems.

When we see that we have a lot of data available, we have already done tests – together with Caris, to transfer own crowd sourced data in a good way. Been successful. Industry has partnerships for other data for points of interest etc. Industry should be better in sharing data with the community. Anders a part of the crowd sourced bathy WG. Industry needs data from HOs and it is a give and take.

30.8 IIC Technologies

[Presentation](#)

David Crossman delivered a presentation focusing on IIC activities in the Pacific.

NaVIC Electronic Chart System - Released Feb 23 is a free downloadable mobile app utilising national authoritative S-57 data with fortnightly updates. Cloud based it presents a free safety and planning tool for small boat users, and recreational water users, real time positioning, route planning and emergency reporting/community communications functions.

Bathymetric surveys of Kiribati

IIC strong focus on S-100 projects with over 50 S-100 projects undertaken to date.

Training and capacity building focus – with bespoke short courses on geodesy, datums, water levels, quality, LiDAR & other geospatial data, GIS, data management, data manipulation, equipment, processes

Modules from IBSC recognised training for individuals and HO's

On the Job Training: Kiribati

Delivery of IBSC recognised IHO Capacity Building on behalf of KHOA (alternately S5b and S8b)

Decision 29: [To note the presentations from Industry / Expert Contributors.](#)

31. Other Business

Republic of Marshall Islands has requested to be recognised as an Associate Member of the SWPHC. As a member state of the SPC this is supported by the SWPHC Statutes.

Action 35: Chair to acknowledge Republic of Marshall Islands request to be an Associate Member to the South West Pacific Hydrographic Commission

Action 36: Members to accept inclusion of the Republic of Marshall Islands as an Associate Member of the South West Pacific Hydrographic Commission

World Hydrography Day 2024. Reflection – what is the objective of WHD – if it is to engage broadly it is a bit difficult for the uninitiated to engage with. We need to engage with the IHO regarding themes.

Action 37: WPWG to consider providing words and slides for unified WHD Celebrations.

Palau has volunteered to host SWPHC 22 in February 2025. After considering the IHO Calendar and other events, the week of 24-28 February 2025 was tentatively planned for SWPHC 22.

Decision 30: To hold the next meeting (SWPHC22) in Palau in Week of 24-28 February 2025

France volunteered to host SWPHC 23 (2026) in New Caledonia

Decision 31: To hold the SWPHC23 meeting (2026) in New Caledonia

32. Closing Remarks

We have achieved much over the past five days of workshop and meetings. This would not have been possible without the support of the Fiji Hydrographic Service as our gracious hosts, and the wonderful staff here at the Tokatoka Resort.

Thank you to the IHO Technical Director and the IHO Capacity Building Fund supporting our regional attendees.

Thank you to Matthew Borbash and Stuart Caie for developing and delivering the Capacity Building Workshop on Disaster response, and their efforts to develop the SWPHC Disaster Response Framework.

And a very special thank you to the teams at the AHO and LINZ for their management of the meeting and workshop, overcoming IT issues to enable virtual attendance, which enabled some excellent presentations from stakeholders located in the UK, Europe and in Australia.

Finally, we have some farewells.

I would like to thank Matthew Borbash for his work as the SWPHC Capacity Building Coordinator. Please get in touch if you are interested in this role.

Action 38: Chair to reach out to interested potential CB Co-ordinators and advise members of appointed CB Co-ordinator

This is the last SWPHC meeting for our US colleague, John Lowell, I would like to thank you for your thoughtful questions and contributions over the years, these have always added to our discussions.

And our longstanding colleague Jasbir Randhawa is retiring. Jasbir was a part of the SWPHC from our first meeting in 1993, and this year we are celebrating 30 years of SWPHC activities.

Jasbir's parting note – it has been a privilege to be a part of this commission since its inception in 1993, the largest of the 15 regional HC in terms of the extent of the geographic area. SWPHC has achieved a lot over the years, supporting collaboration between international and regional orgs, industry and the Pacific. We can all be proud of the work we've put into the SWPHC, with our Commission respected in our community.