



IIC Technologies:

Doing our part in
**Delivering the
Goals of the
IHO Strategic Plan**

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24 Feb 23

SWPHC20



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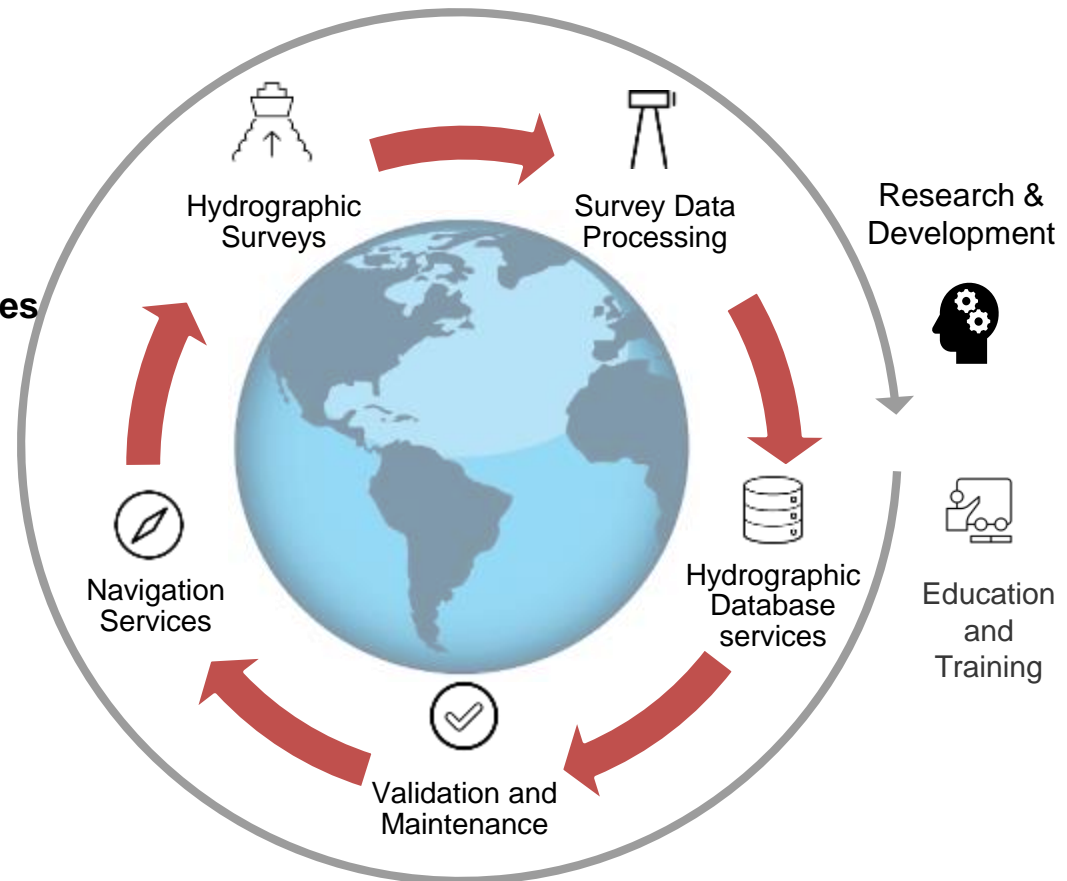
- ❖ **Intro**
- ❖ **Goal 2 Standards**
- ❖ **Goal 2.5 eNav & MSDI**
- ❖ **Goal 3.3 CB Activities**
- ❖ **Goal 3.7 Training**

Turnkey Surveying, Mapping, and Charting Solutions Company

- Established in 1993
- More than 1500 employees
- ISO Accredited
- NATO Secret Facility
- 8 offices, 4 continents
- 30+ National Authority Customers

Six Divisions, focused on Geospatial Sciences

- Terrestrial Services and Solutions
- Geo Surveys
- Geospatial Engineering
- Innovation Centre
- Marine Services and Solutions
- IIC Academy



Regional Client List



- Australian GEOINT Organisation (AGO)
- Australian Hydrographic Service (AHS)
- Australian State of Victoria Department of Environment, Land, Water and Planning
- Fiji Hydrographic Office
- French Hydrographic Office
- Geoint New Zealand (GNZ)
- Geoscience Australia
- Indonesian Navy Hydrography and Oceanography Center
- Korea Hydrographic and Oceanographic Agency
- Land Information New Zealand (LINZ)
- LandGate Western Australia
- Ministry of Lands and Natural Resources Tonga
- National Oceanic and Atmospheric Administration (NOAA)
- National Institute of Water and Atmospheric Research NIWA
- Niue Ministry of Natural Resources
- NMSA Papua New Guinea
- Open Geospatial Consortium (OGC)
- Royal New Zealand Navy
- Secretariat of the Pacific Community
- UK Hydrographic Office (UKHO)
- US National Geospatial Intelligence Agency (NGA)
- SA DEW Geospatial Panel
- World Bank Kiribati Bathymetric Survey

- **NOAA**
 - ENC Conversion Study
 - ECDIS Transition to S-101
 - S-64 test datasets
 - Realtime data in S-100
 - S-121 Catalogue creation
 - S-100 metadata database
- **CHS/CHC**
 - Grid Study and Arctic Grid Study
 - S-100 HPD Restructuring
 - CHC S-100 Multi-language Metadata Support Design
 - CHS S-131 Database API Software Development
- **CHS/USN Oceanographic Office**
 - Creation of 1st S-102 Bathy Surface prototype
- **NGA**
 - S-100 Database Consult
- **Geoscience Australia**
 - Revised S-121 product spec. and Encoding document
- **KHOA**
 - Grid and implementation study
 - S-100 HPD Restructuring
 - S-100 Middleware System
 - JPA (KHOA & NOAA)
 - S-98 Interoperability Catalogue Design
 - Streamlining S-100 ECDIS Portrayal
 - S-100 Testing Infrastructure
 - S-102/S-104/S-111 Testing Rules
 - S-98 IC V2 Authoring
- **UKHO**
 - S-100 Grid
 - S-100 Exchange Set



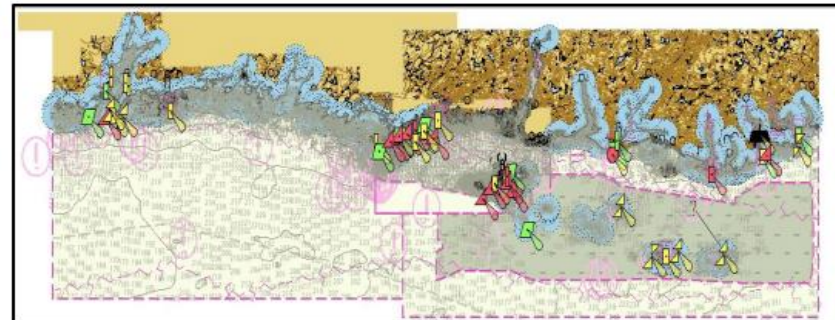
2.1.2 S-100 Activities

Canadian CG S-100 Projects

- S-129 UKC Policy Review
- S-127 Data production for Canada
- S-100 Metadata Proposal
- S-100 Training Materials Development
- AtoN DB Conversion Roadmap
- S-123/S-127 Portrayal Development
- S-100 Workflow Visualizations
- S-421 Sample Data Production
- S-123 and S-127 Geoserver Data Loading and Visualization
- AtoN DB Sample Conversion
- UKC Safety Analysis

Other S-100 Projects

- OGC S-121 S-121 Maritime Limit and Boundary schema and GIS plug-in
- GeoNovum S-100 OGC API
- Toolset Development
- Canada's Ocean Supercluster S-100 Dissemination System Development
- IIC Nautilus Cloud
- *IIC S-100 Linked Series*



2.5 Support to e-Navigation & MSDI

NaAVIC: Electronic Chart System

- Released Feb 23
- Free downloadable mobile app
- Utilises National Authoritative S-57 data
- Fortnightly Updates
- Cloud based
- Free safety and planning tool for small boat users, and recreational water users such as kayakers, SUP, jet skis etc
- Numerous land and maritime layers.
- Real time positioning
- Route planning.
- Allows user defined editing
- Built in emergency reporting function.
- Community communications functions



2.5 Support to e-Navigation & MSDI

NaAVIC ECS

- Thanks to LINZ! We went live we went live for NZ Feb 23
- Please download it now and have a play while I chat!
- Note I have hit the man-overboard to show where we are!



2.5 Support to e-Navigation & MSDI

NaAVIC ECS

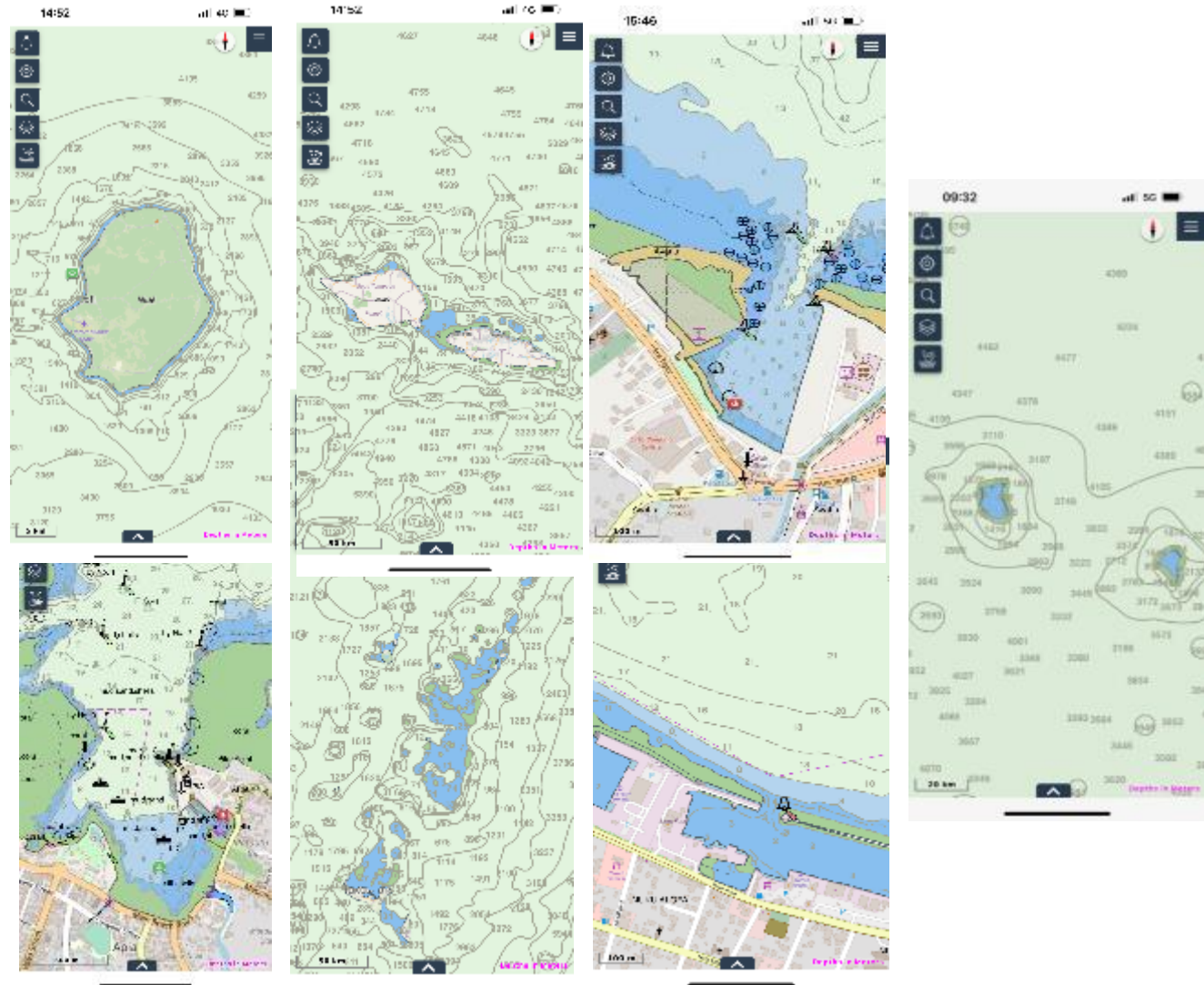
- Benefit to the USA!



2.5 Support to e-Navigation & MSDI

NaAVIC ECS – The Pacific Islands!

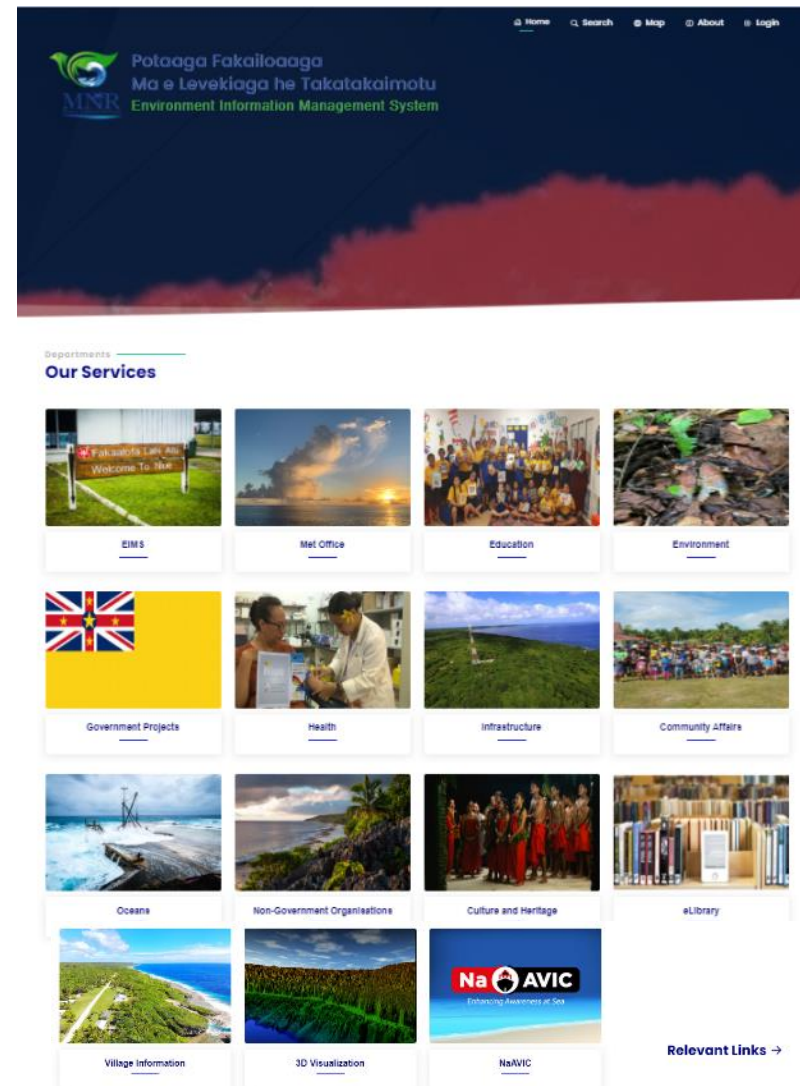
- Pleased to Announce:
 - Tonga,
 - Samoa,
 - Niue
 - INT Charts
- Others –
Provide or discuss with your PCA's.



2.5 Support to e-Navigation & MSDI

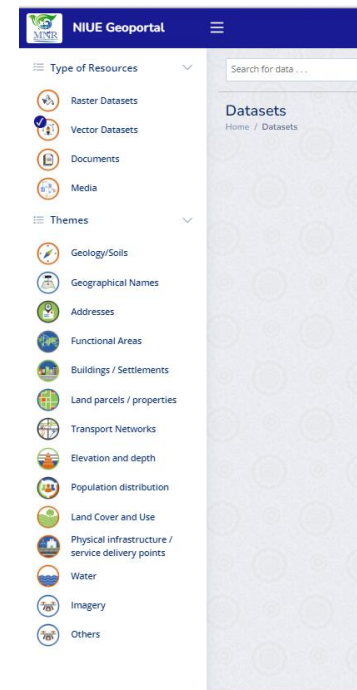
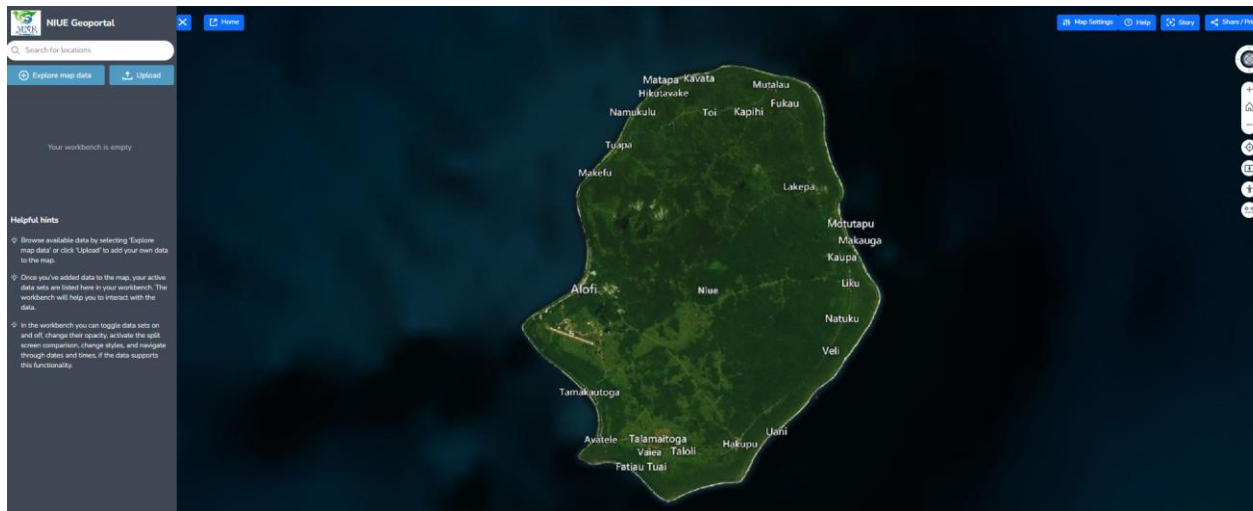
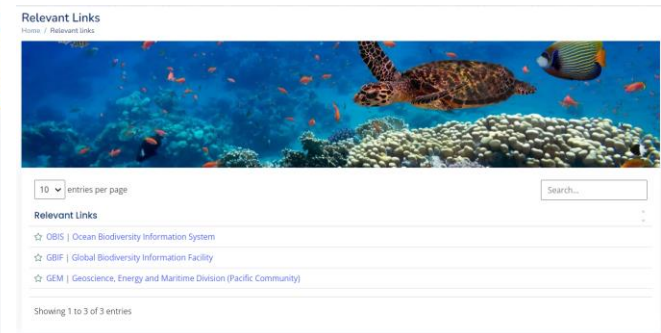
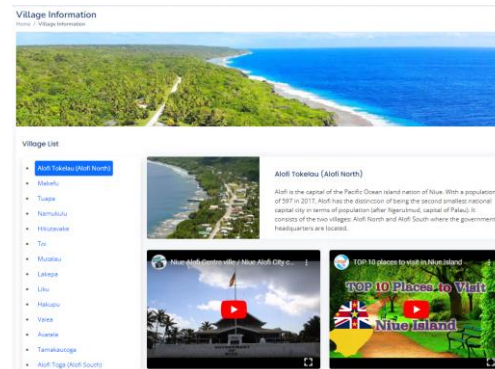
Niue Electronic Information Management System

- Spatial Data Infrastructure ++
- Full data capture, management, analysis, visualisation and reporting
- Full GIS back-end
- All of govt supporting
- Numerous formats (incl non-spatial)
- Managed multi-level access
- Strong community interest Incl academic and environmental
- 400% increase in data holdings to date
- Will capture Niue culture, History, language and traditional environmental practices
- Promotes Open data, and maximises use of Open Standards and freeware



2.5 Support to e-Navigation & MSDI

- Goes Live next week
- Physical infrastructure install Jun 23
- Is a common issue that IIC are happy to assist nations to resolve.
- Is being developed as a resolve that can be re-used across any SWP nation.



This Project is supported by the Niue Govt and Niue Ministry of Natural Resources, and is part of the Ridge to Reef program funded by GEF via UNDP



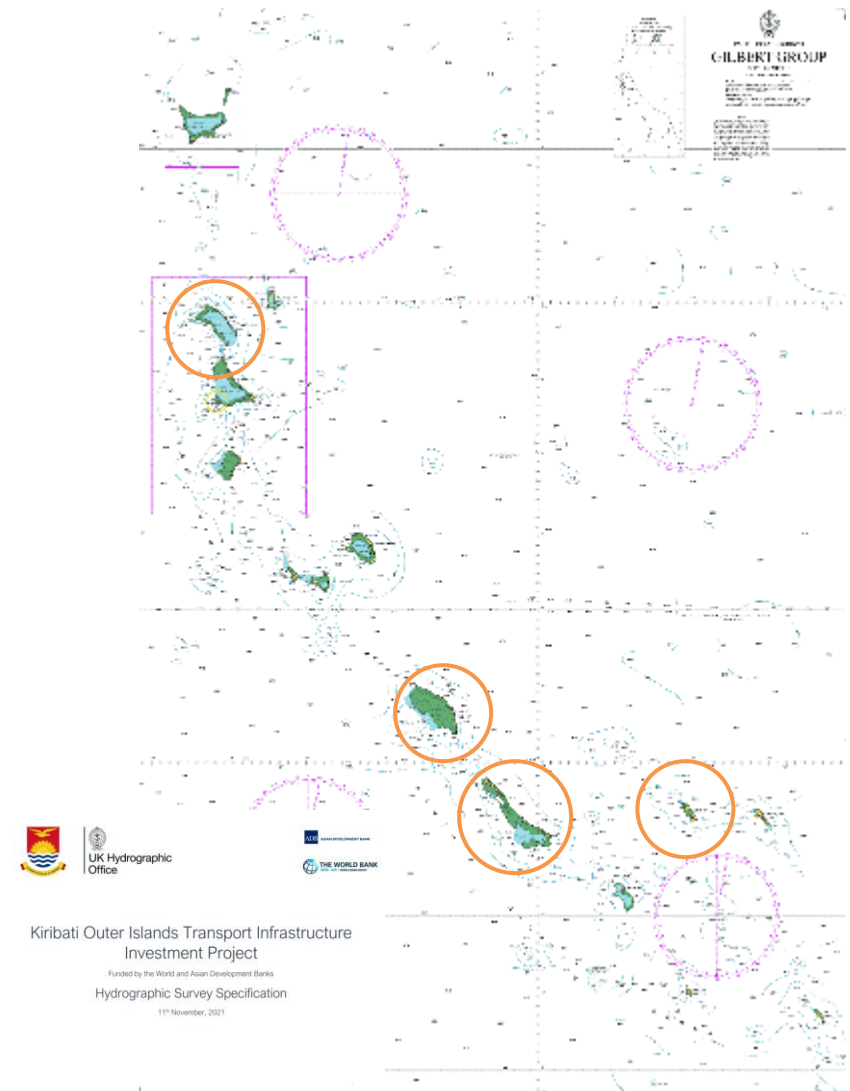
3.3.9 Capacity Building

Technical Visits / Assessments

- In discussion with several nations to conduct this year

Projects:

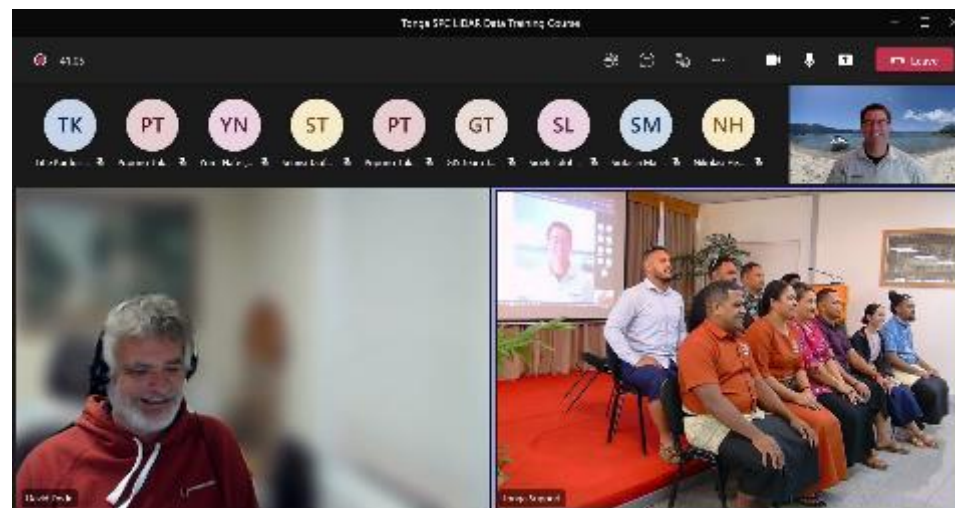
- **SPC LiDAR QA / QC**
 - Tonga, Vanuatu & RMI
- **GEOID Development**
 - RMI & Vanuatu (SPC)
 - Tonga
- **Kiribati Bathymetric Survey**
- 4 Areas
- LiDAR, ALB MBES
- Safety of Nav, economic Development, resilience planning etc
- Kiribati Govt (MICT) / WB / ADB / UKHO partnership
- Mar 23+



3.3.9 Capacity Building - Training

Short Courses (bespoke):

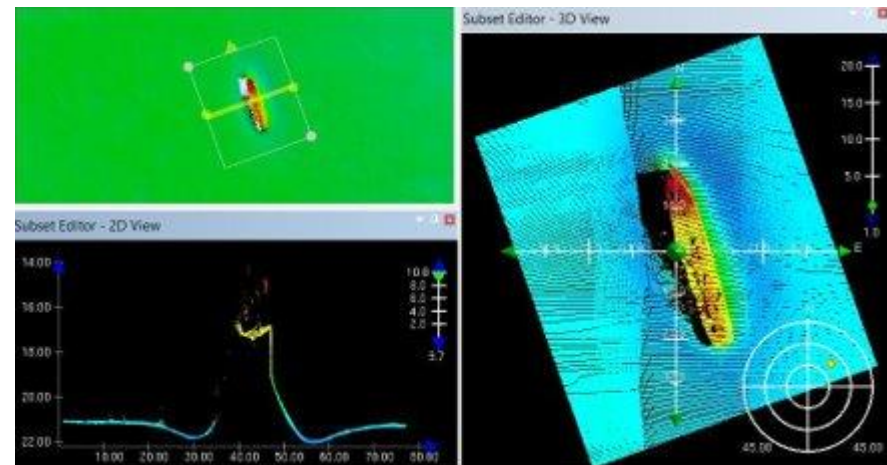
- **SPC LiDAR Data Training**
 - Geodesy, datums, water levels, quality, LiDAR & other geospatial data, GIS, data management, data manipulation etc
 - Promote Open data, Standards and freeware
 - All material, guides and procedures provided to students
 - Four country specific deliveries, remainder online group deliveries
 - **90+ Students, 10 countries + SPC**



3.3.9 Capacity Building - Training

Short Courses (continued):

- **Bespoke for Clients**
 - On request
- **S-5B & S-8B Modules**
 - Delivered ad-hoc as self-paced learning
 - Companies or individual
 - AHSCP have started recommending these as one of the options for AHSCP applicants requiring top-up training
- **OJT, S-5B & S-8B as part of Kiribati Survey**
- **RNZN Leading Hydrographic Surveyor Training Review**



3.7.1 Capacity Building - MSDI

MSDI Training Delivery

- Part of S-5B and S-8B courses
 - Global delivery
 - IHO KHOA etc
- Direct to Nations
 - PNG NMSA
 - Online to 12 Students complete
 - In person - in discussion in 2023



3.3.9 Capacity Building - Training

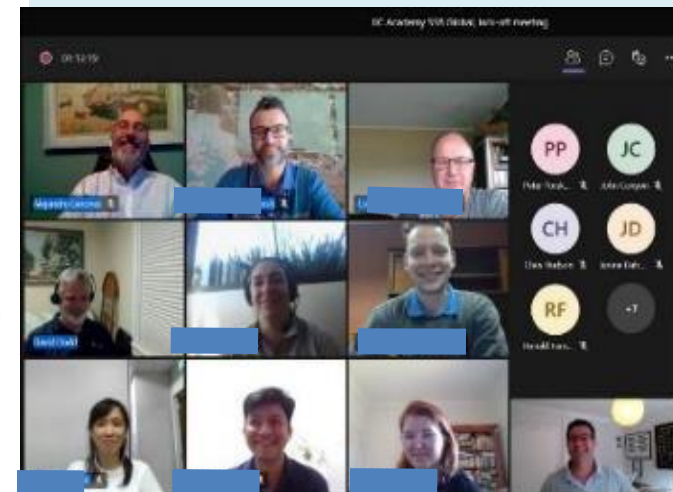
IBSC Recognised Training

- **S-5B Hydrographic Surveyors Program**
 - 13-week online theory over 22 weeks, then 7 week in person practical
 - Year 1 - 9 students (nil from SWP)
 - Year 2 - 16 students (1x Tonga)
 - In partnership with Deakin University & O2 METOCEAN
- **S-8B Nautical Cartographers Program**
 - 23-week online theory over 30 weeks, instructor supported assessment
 - Year 1 - 18 students (Nil SWP)
 - Year 2 - 8 students (2 x Fiji)
- Both Programs are now annual
- Request sponsorship of SWP Students
- **S-5A Hydrographic Surveyors Program**
 - Discussions commenced



Other IIC FIG/IHO/ICA S-5B & S-8B Courses

- **IIC S-5B Delivery**
 - CHS (full over 3 years)
 - NOAA
 - KHOA IHO CB delivery
- **IIC S-8B Delivery**
 - CAN DND (Bespoke DND (content not IBSC))
 - CHS
 - NGA
 - KHOA






Thank You

NEW PATHS. NEW APPROACHES

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Summary

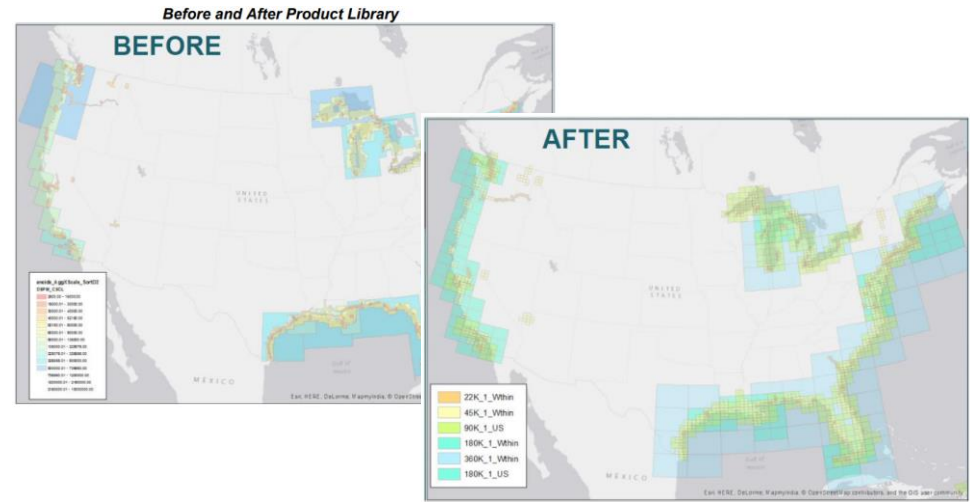
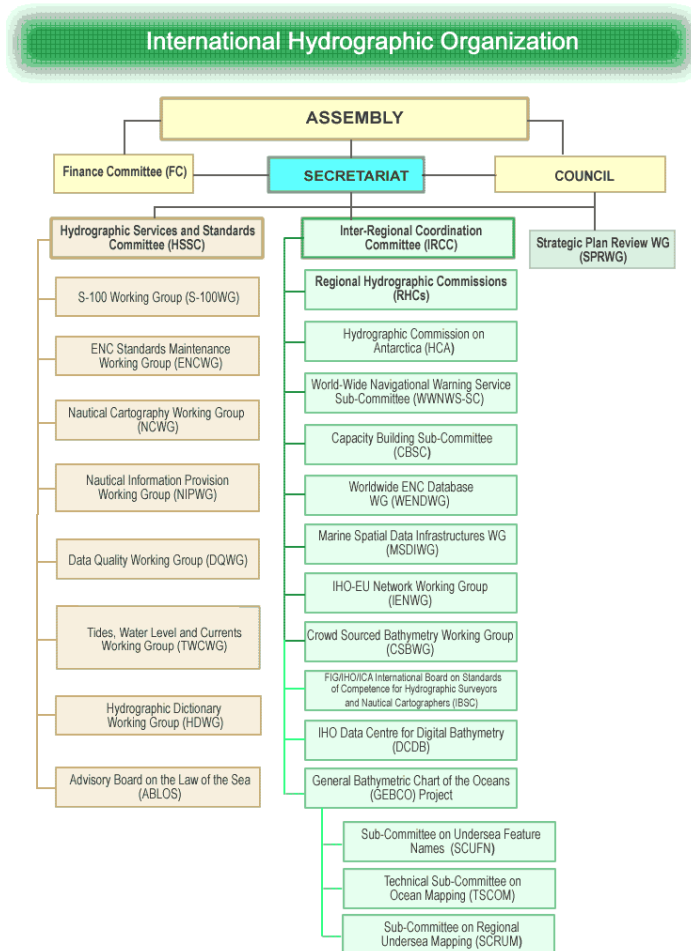


NaAVIC, is a **free and downloadable mobile app** and it represents a new approach to an ECS where the electronic **chart data does not physically exist within the onboard computer.**

The data for this particular form of ECS goes well beyond the traditional ENC content and **consists of an output from a database consolidating many different data products currently available in the marine domain.**

NaAVIC pushes the sailing experience further by **enabling all members of expeditions to engage in the voyage and share that voyage to fellow “marine friends”.**

2.3 S-100 Committees and WG's



S-100 Groups Supported by IIC

- S-100 WG
- HSSC - Hydrographic Services and Standards Committee
- Nautical Information and Publications WG
- ENC Standards Maintenance WG
- Nautical Cartography
- Advisory Board on the Law of the Sea
- Various IRCC's including Nth America and Australasia