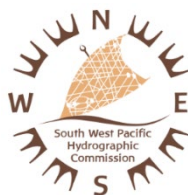




SOUTH WEST PACIFIC HYDROGRAPHIC COMMISSION

INTERNATIONAL CHARTING COORDINATION WORKING GROUP (SWPHC ICCWG)

Report for SWPHC 21
28th Feb – 1st Mar 2024, Nadi, Fiji



Coordinator: Mr Robert Cario
Australian Hydrographic Office

1. Background

The SWPHC ICCWG was established in 2012 as a subsidiary of the SWPHC. It is made up of Producer Nations who publish Paper chart and ENC's in the SWPHC geographic area.

Its main responsibility is for the coordination of Nautical Charting in the region, ensuring the Paper Chart INT series is comprehensive and current and the ENC coverage is appropriate. The main focus is on paper Charts at 1:500,000 and smaller and ENC Nav Purpose 1 and 2 coverage.

The group operates by correspondence and VTC.

2. Current SWPHC ICCWG Members

- Australia (Chair) - Robert Cario – robert.cario@defence.gov.au
- France - Nicolas David - nicolas.david@shom.fr
- New Zealand - Alison Cantrill - ACantrill@linz.govt.nz
- UK - Daniel Miners - Daniel.Miners@UKHO.gov.uk
- USA (NOAA) - Karl Wagner - karl.wagner@noaa.gov
- USA (NGA) – Caitlin Johnson - Caitlin.S.Johnson@nga.mil
- Fiji – Sulueti Savou- s.savou3@gmail.com
- NZ- Verena Bosselmann-Borsos – S-100 Coordinator vbosselmann-borsos@linz.govt.nz

3. SWPHC Countries and their Charting Producer Nations

SWPHC Members	Primary Charting Authority (PCA)
Australia	Australia
Fiji	UK
France	France
New Zealand	New Zealand
Papua New Guinea	Australia
Samoa	New Zealand
Solomon Islands	Australia
Tonga	New Zealand
UK	UK
USA	USA
Vanuatu	UK

Associate Members	Primary Charting Authority (PCA)
Cook Islands	New Zealand
Indonesia	Indonesia
Kiribati	UK
Nauru	UK
Niue	New Zealand
Palau	USA

SWPHC Observer	PCA
New Caledonia	France

Intergovernmental Observer Organization:

Secretariat of the Pacific Community (SPC)

Observer	PCA
Fed States of Micronesia	USA
Marshall Islands	USA
American Samoa	USA
Pitcairn Islands	UK
Guam	USA
French Polynesia	France
Northern Mariana Islands	USA
Tokelau	New Zealand
Tuvalu	UK
Wallis and Futuna	France

4. SWPHC20 Actions INT Scheme/ICCWG

No	Action	Responsible	Deadline and Status
35	Assign the role of the Charting Regional Coordinator for the implementation of the S-100 Implementation Roadmap to the ICCWG	ICCWG	Complete – Circular letter emailed 8 th Nov 2023 confirming Verena Bosselmann-Borsos as SWPHC S-100 Coordinator.
36	SWPHC to coordinate the efforts on the implementation of S-100, promote the cooperation and exchange of experiences, and identify CB requirements.	ICCWG	Ongoing agenda item – S100 Annual meetings, CB Coordinator informed, exchange of ideas with other RHC S100 experience. E.g. SAIHC, HCA.
37	SWPHC to consider the role of regional charting coordinator to include S-1xx Products as RHC WEND Coordinator	ICCWG	Ongoing - standing agenda item. ICCWG Chair presented SWPHC ENC coordination report to WENDWG Feb meeting 24.
38	ICCWG to review ToR with respect to the role of regional charting coordinator and circulate.	ICCWG	Get redline version ready for ICCWG ToR for Jan meeting. Final Draft version to be presented at SWPHC pre meeting VTC. ToR final draft to be sent for Approval at SWPHC21.

5. SWPHC INT Scheme

5.1 S-11 Part B, Region L updates

Updates are managed through IHO Web Manager.
See link [IHO Web Catalogue](#).

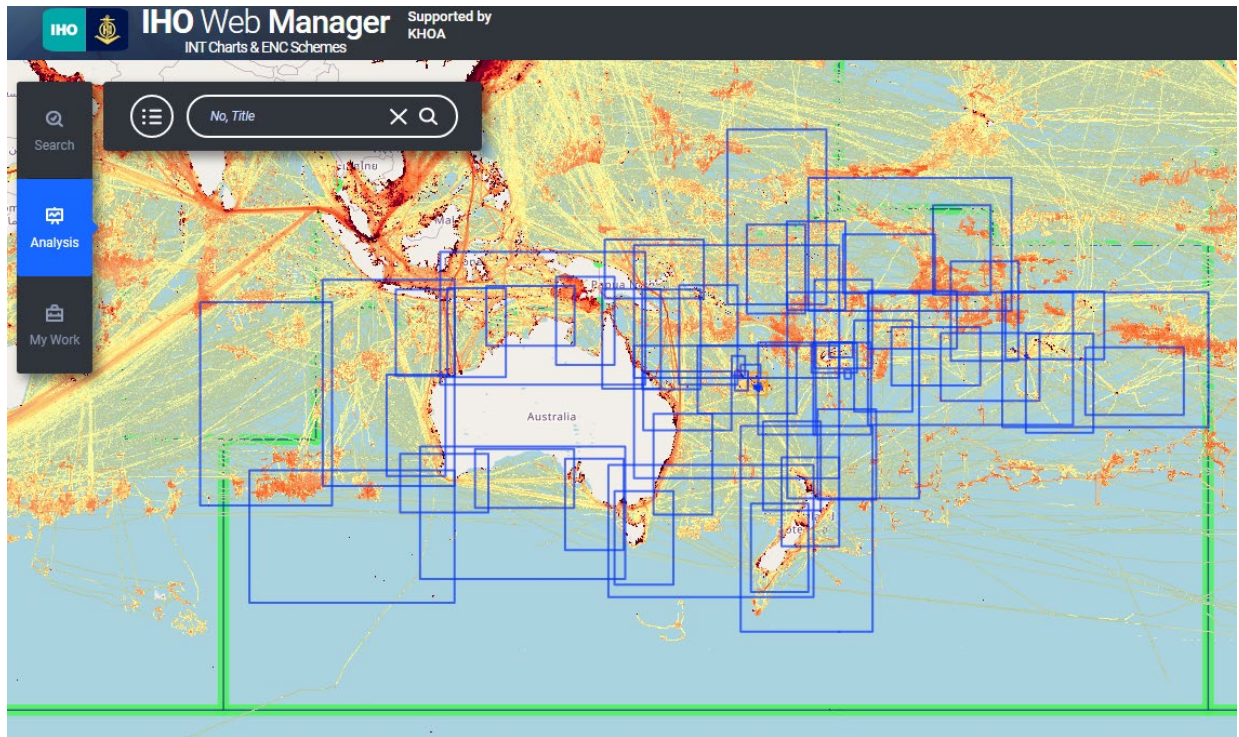


Figure 1: SWPHC INT paper chart Scheme

There are currently 56 INT Charts in Region L.

5.2 Paper INT charts produced since the last conference

UKHO

2 New Editions of INT charts previously adopted from France (SHOM).

No further new editions of GB INT charts produced since last conference.

SHOM

SHOM has produced the following new editions.

FR Chart Number	Title	Published	ENC
6686 (INT6843)	Nouvelle-Calédonie (partie Sud-Est) - Iles Loyauté	07 st July 2023	FR366860

On French waters around New Caledonia, SHOM is producing a chain at scale 1:300000. FR6768 (INT6844) - Nouvelle-Calédonie (partie Sud) - Ile des Pins - expected to be published in 2026.

AHO

No New editions of AUS INT charts within SWPHC.

LINZ

New Editions Feb 2023 - Feb 2024	Area	Published
NZ 14600 (INT 600)	New Zealand Including Norfolk Island and Campbell Island / Motu Ihupuku	December 2023

See Annex A for SWPHC INT Paper Chart Scheme.

5.3 Nav Purpose 1 and 2 ENC produced since last conference:**LINZ**

New Editions Feb 2023 - Feb 2024	Area	Published
NZ14600E	South Pacific Ocean - New Zealand including Norfolk Island and Campbell Island / Motu Ihupuku - East	December 2023

AHO

New Editions Feb 2023 - Feb 2024	Area	Published
AU130120	Australia - Northern Approaches	15/06/2023
AU160120	Australia - Southern Approaches	30/11/2023
AU210140	Ward Hunt Strait to Torres Strait	02/03/2023
AU220120	Timor Sea	19/10/2023
AU220130	Gulf of Carpentaria to Bathurst Island	18/05/2023
AU220140	Coral Sea (North West)	11/05/2023
AU220150	Coral Sea (North East)	12/10/2023
AU230140	Coral Sea (South West)	12/10/2023
AU230150	Coral Sea (South East)	05/10/2023
AU240130	Head of Great Australian Bight to Cape Jaffa	19/10/2023
AU240140	Cape Martin to Cape Howe	30/11/2023
AU240150	Bermagui to Coffs Harbour	28/09/2023
AU250140	Tasmania to South Tasman Rise	09/11/2023

UKHO

New Cells Feb 2023 - Jan 2024	Area	Week No.
	No New ENC Cells produced since last conference	

SHOM

New Cells	Area	Published
FR272680	Nouvelle-Calédonie	11/01/2023

See Annex B – D for Status of ENC Coverage across all usage bands .

5.4 INT Charts Update:

AHO

The AHO proposes extending an area of its ENC Usage 1 coverage east of Macquarie Island allowing Australia full coverage of its EEZ limit. Australia is liaising with LINZ with proposals to amend the UB1 cells with Australia extending its AU1 to cover its EEZ and retract data to the north so that New Zealand can extend its NZ UB1 ENCs to completely cover its EEZ.

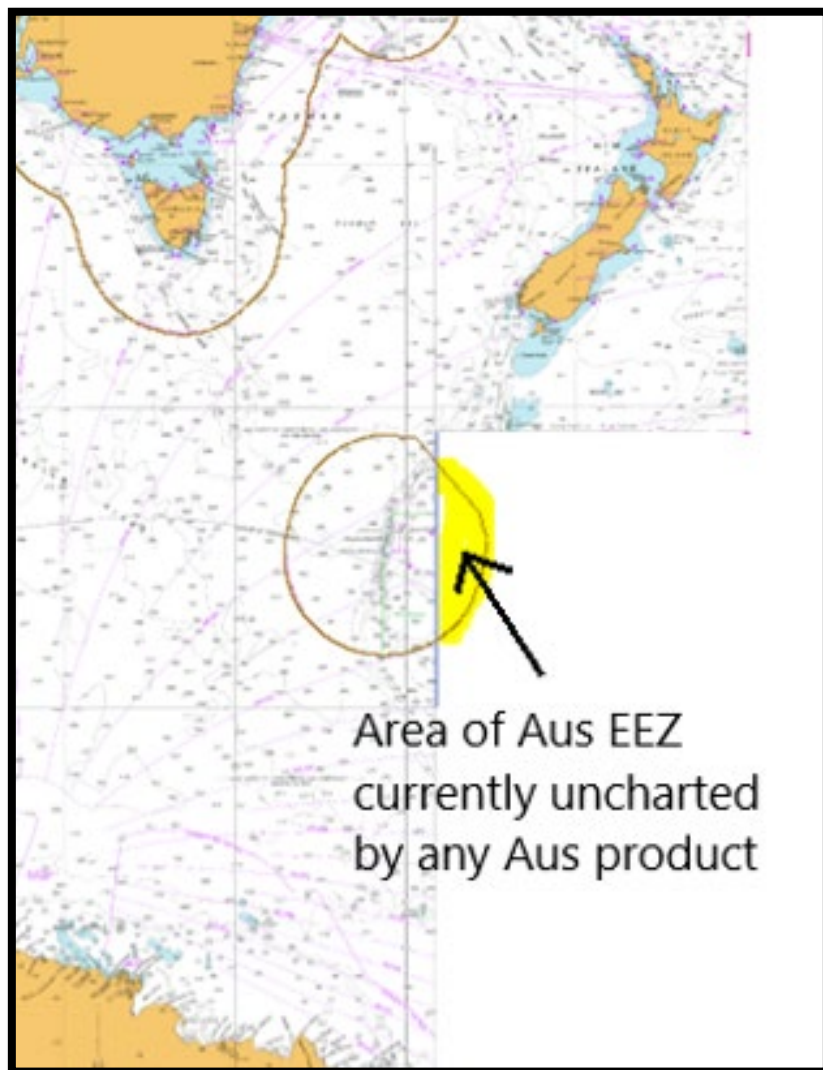


Figure 2: Uncharted AUS EEZ area

LINZ

As of December 8 2023, the following 4 INT charts have now been withdrawn
 NZ 21 (INT 641)
 NZ 22 (INT 639)
 NZ 25 (INT 648)
 NZ 23 (INT 640)

LINZ will also be working with the AHO to amend the coverage around Macquarie Island as part of the proposal put forward by the AHO.

NOAA/NGA

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>

SHOM

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.

6. Region L: Gridded ENC Scheme – An update

AHO

The current AHO ENC scheme is gridded scheme. See fig 4 below for proposed S-101 gridded scheme details.

Navigation Purpose Code	Usage	Area (as produced by AHO)
1	Overview	30° x 30°
2	General	10° x 10°
3	Coastal	1° x 1°
4	Approach	1° x 1°
5	Harbour	Customised to cover port and pilotage areas.
6	Berthing	Customised to cover channels and manoeuvring areas

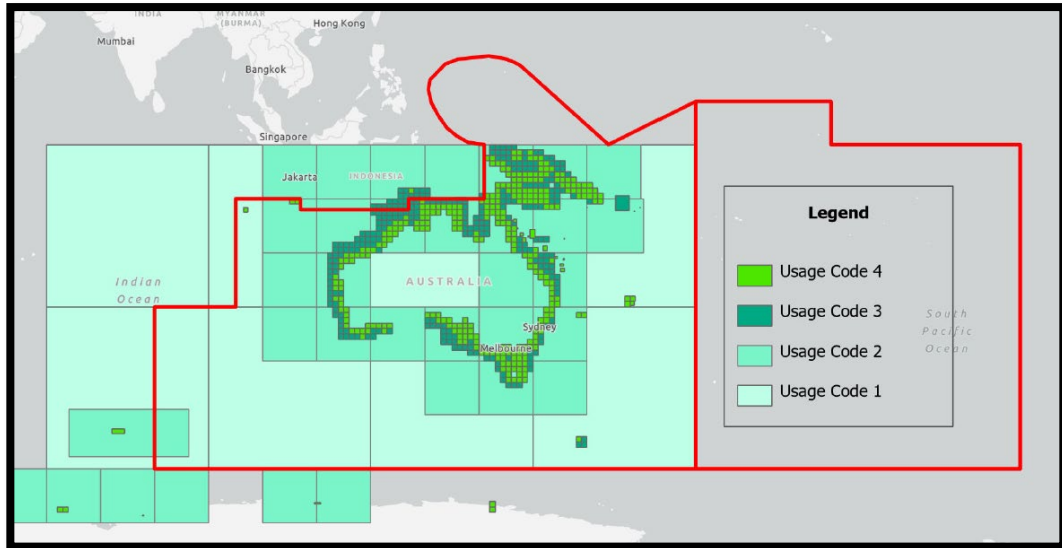


Figure 3: AHO S-101 gridded scheme

NOAA/NGA

Nav Purpose 1 and 2 ENC Updates:

NOAA’s Office of Coast Survey is in the process of rescheming 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, reschemed ENCs will have a standardized size with two scales per usage band.

NOAA Usage Band	Navigational Purpose	Cell Height	Cell Width	Reschemed NOAA ENC Scale
1	Overview	19.2°	19.2°	1:10,000,000
				1:3,500,000
2	General	4.8°	4.8°	1:1,500,000
				1:700,000

NGA’s Maritime Safety Office is in the process of transitioning its DNC coverage into a worldwide ENC grid following the standardized grid and sizes in the table below.

NGA Usage Band	Navigational Purpose	Cell Height	Cell Width	Reschemed NOAA ENC Scale
1	Overview	30°	30°	1:10,000,000
				1:3,500,000
				1:1,500,000
2	General	10°	10°	1:1,000,000
				1:700,000
				1:520,000
				1:350,000

The figures below represent the current NOAA and NGA ENC boundaries (black) and future NOAA and NGA reschemed ENC boundaries (blue and red respectively) for Nav Purpose 2 in Region L. NOAA plans to coordinate with other Hydrographic Offices and use a CATCOV solution to prevent ENC overlap.

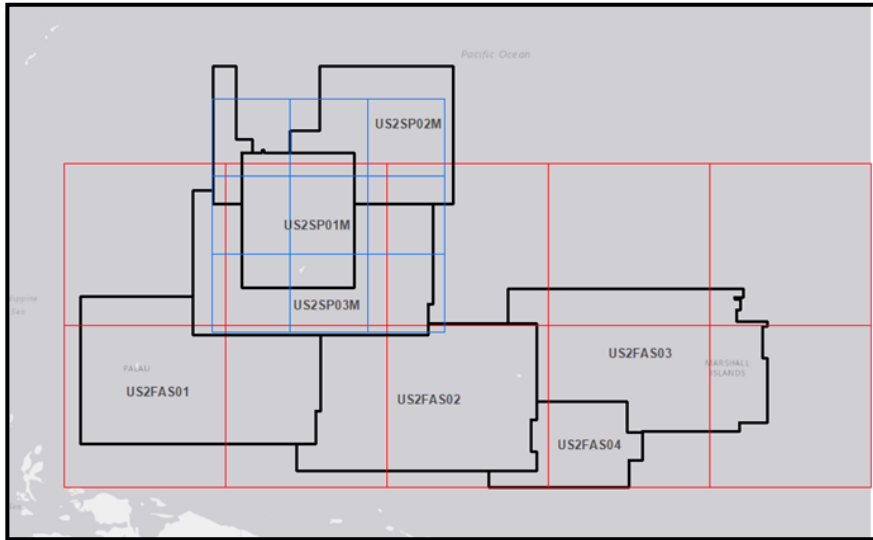


Figure 4: US current ENCs (outlined in black) with planned Nav Purpose 2 reschemed ENCs (outlined in blue and red)

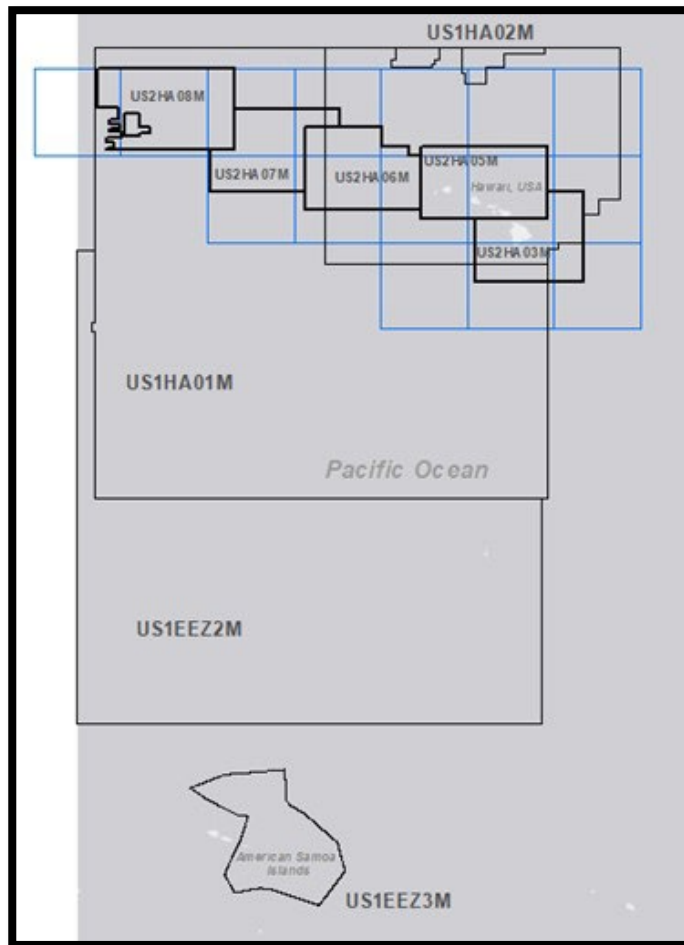


Figure 5: US current ENCs (outlined in black) with planned Nav Purpose 2 reschemed ENCs (outlined in blue)..

UKHO

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

Grid Size

Six different options of grid sizes were trialled and tested. Concluded that the grid parameters in the table below were the best fit for UKHO portfolio, taking into consideration number of ENCs created and how the grid fits with navigational data and scale of source data.

Navigation Purpose Code	Usage	Area
1	Overview	20° x 20°
2	General	4° x 4°
3	Coastal	0.8° x 0.8°
4	Approach	0.2° x 0.2°
5	Harbour	0.1° x 0.1°
6	Berthing	0.05° x 0.05°

UKHO Plan to “aggregate” grid squares, where appropriate, within the Usage Band 4 and 5 scheme to improve depiction of navigational data. Examples below show how the scheme may be “fine tuned” to avoid creating multiple incomplete ENC grid squares.

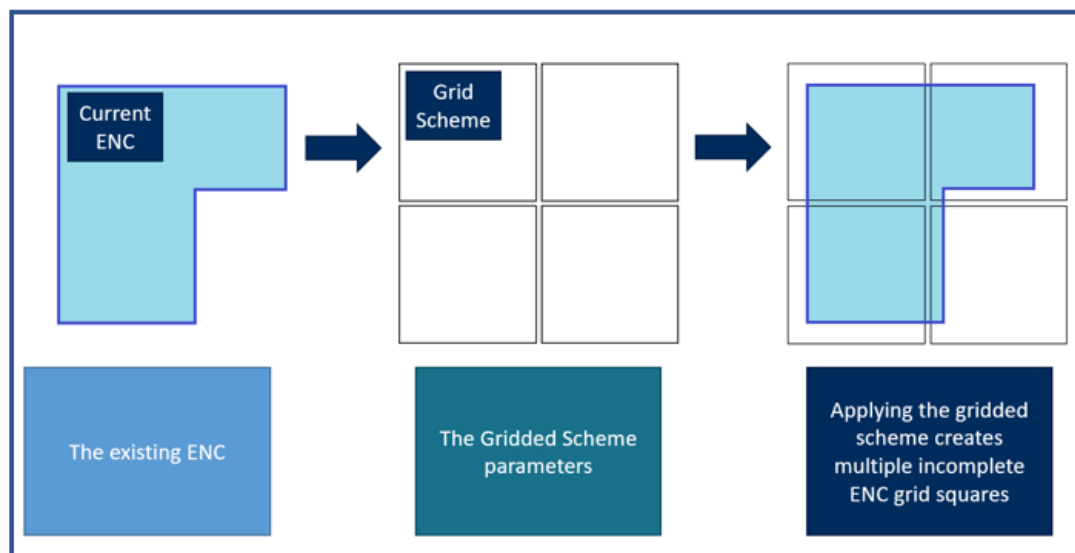


Figure 6: ENC Grid examples

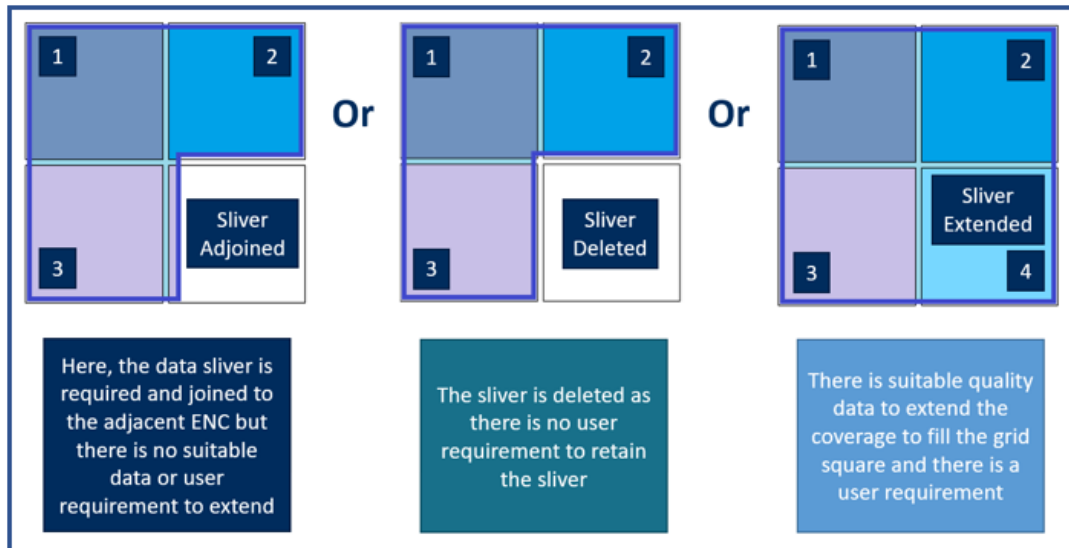


Figure 7: ENC Grid examples

UKHO will continue to co-ordinate with other Hydrographic Offices and use a CATCOV solution to prevent ENC overlap.

LINZ

LINZ has not yet determined what the proposed gridded schema will look like.

7. S-100 Implementation Roadmap

7.1 WENDWG

The WENDWG working group has prepared version 1.0 of the WEND100-IGIF Matrix to assist RHCs with conducting an S-100 readiness assessment at regional level in support of the IHO Roadmap for the S-100 Implementation Decade. The intent of this matrix is to help ensure that we are not leaving individual Member States or Regions behind as we progress through the S-100 Implementation Decade and that we work to ensure that geospatial best practices are being considered and agreed upon as new S-100 products are made available.

The matrix includes seven S-1xx product specifications for evaluation of the Readiness Level to indicate the various levels of maturity.

- S-101 (ENC)
- S-102 (Bathy Surface)
- S-104 (Water Levels)
- S-111 (Surface Current)
- S-122 (Marine Protected Areas)
- S-124 (Navigational Warnings)
- S-128 (Catalogue of Products)

7.2 Recommendations/Decisions from IRCC15 related to S-100 Roadmap;

Recommendation 7: RHCs to prioritize their participation in the WENDWG through the RHC Chart Coordinator or S-100 Coordinator.

Decision 24: To note the results of the WEND-100 IGIF Matrix, as of February 2023 and encourage the WENDWG to use it as a tool for monitoring the S-100 implementation, for each S-100-based top priority product, per RHC.

Recommendation 8: RHCs, if not done already, establish the S-100 Coordinator role or assign S-100 Coordinator duties as appropriate.

Recommendation 9: RHC S-100 Coordinators to update their WEND-100 IGIF Matrix submissions annually and share their schedule and roadmap to meeting the 2026 IMO target (S-100 ECDIS) at every WENDWG meeting.

Recommendation 10: RHC Chart Coordinators/S-100 Coordinators report their planned S-101 chart schemes, usage bands 1 – 4, by 30 September. Request that submissions use INTtoGIS III when commissioned.

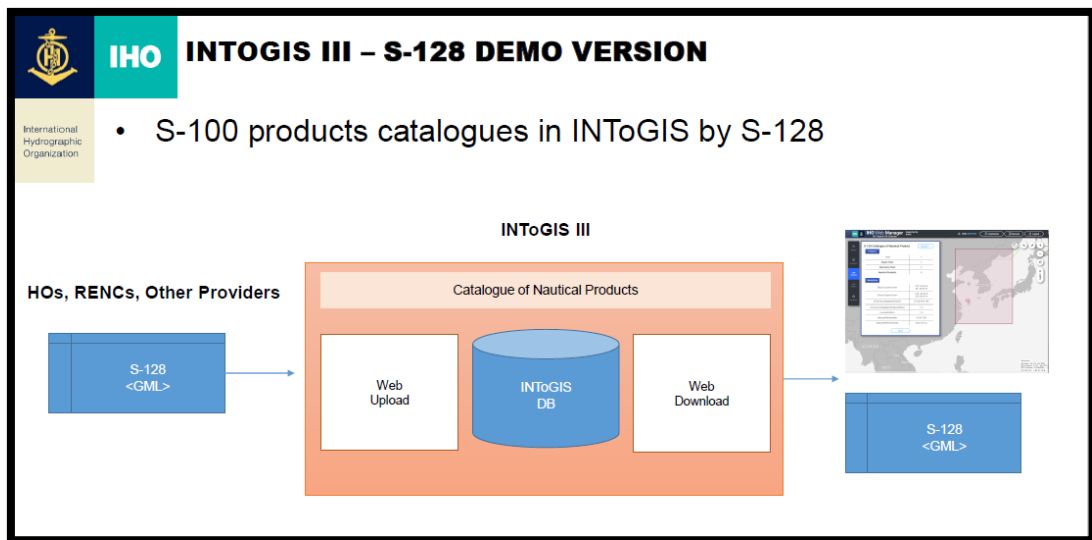
7.3 Draft Terms of Reference - ICCWG

At the 15th meeting of the IHO Inter-regional coordination committee there were a number of recommendations relating the establishment of RHC S-100 coordinator and assign S-100 Coordinator duties as appropriate. On the 8th Nov 2023 Verena Bosselmann-Borsos was confirmed as SWPHC S-100 Coordinator and sit within the SWPHC ICCWG team.

The Draft SWPHC ICCWG Terms of Reference (Version 1.2) has been updated to include the role and duties of the S-100 Coordinator.

7.4 INTOGIS III

Current INTOGIS II Service includes INT chart and ENC Web Catalogue Service, INT Chart Maintenance and planning. The new version of tool (INToGIS III) will be for managing and monitoring of INT and ENC schemes, catalogue and scheming of the S-101 ENCs and other S-1xx products (S-101, S-102, S-104, S-111, S-124, S-129) and share catalogue of nautical product through web-upload of S-128 dataset. INTOGIS III will be ready to provide the world wide coverage of S-100 based products by 2024.



Report of the development of INTOGISIII - S-128 by NIPWG

8. Overlaps of Navigation Purpose 1 and 2 ENC cells in SWP

The following is an extract from a report received from IC-ENC regarding overlaps of ENC in the SWP as of 1st Feb 2024. Further details can be provided by contacting the ICCWG Chair.

IC-ENC REGIONAL HYDROGRAPHIC COMMISSION OVERLAP REPORT - SOUTH WEST PACIFIC RHC - JANUARY 2024														
ID	STATUS	RENC Membership	RHC	ENC 1	ENC 2	Usage Band	ENC 1 Scale	ENC 2 Scale	ENC 1 Edn	ENC 2 Edn	Overlap extent (Kmxkm) (m/square NM)	Impact Assessment	Justification	Action requested
1183	LIVE	IC-ENC	SWPHC	NZ214628	NZ214629	2	1500000	1500000	1	1	3.7ms	LOW	overlap is consistent and in deep waters	
126	LIVE	IC-ENC	SWPHC/SAIHC	RU1B0PF0	AU160060	1	3000000	3500000	1	4	840Km x 558Km 135600 sq. NM	LOW	Overlap is located in the Antarctica, it charts very deep waters. There is a 119m shoal depth which is captured on AU160000 which is not captured on RU1B0PF0. Little traffic as expected.	HOs to discuss and resolve overlaps
127	LIVE	IC-ENC	SWPHC/HCA	RU1B0PF0	AU160090	1	3000000	3500000	1	4	560Km x 1700Km 273008 sq. NM	LOW	Overlap is located in the Antarctica, it charts very deep waters. Little traffic as expected.	HOs to discuss and resolve overlaps
128	LIVE	IC-ENC	SWPHC/HCA	RU1B0PF0	AU160120	1	3000000	3500000	1	7	560Km x 195Km 31605 sq. NM	LOW	Overlap is located in the Antarctica, it charts very deep waters. Little traffic as expected.	HOs to discuss and resolve overlaps
1103	ACCEPT	IC-ENC	SWPHC	GB24632W	NZ214631	2	1500000	1500000	6	1	3mxXKM	ACCEPT	3m Overlap is acceptable	
401	ACCEPT	IC-ENC	SWPHC	NZ406152	NZ461532	4	45000	22000	2	5	1.7 sq km (.6 sq NM)	ACCEPT	Small Overlaps concerning COALNE. These do cause display issues in TRANSAS 3000/4000 with both COALNEs displayed at the same time. Assumed low traffic area	LINZ Identified and requested withdrawal and resubmission of cell

9. Engagement with Non Producer Nations in SWP

Within the South West Pacific, the Producer Nations of New Zealand, UK, France and Australia have reported good working relationships with the Hydrographic Offices / National Maritime jurisdictions and/or Governments of the countries they chart.

10. Adherence to WEND principles

ENCs are distributed worldwide via the following mechanisms:

Producer nation	Mechanism
France	PRIMAR RENC
Australia	IC-ENC RENC
New Zealand	IC-ENC RENC
UK	IC-ENC RENC
US	IC-ENC RENC

11. SWPHC S-100 Workshop #3

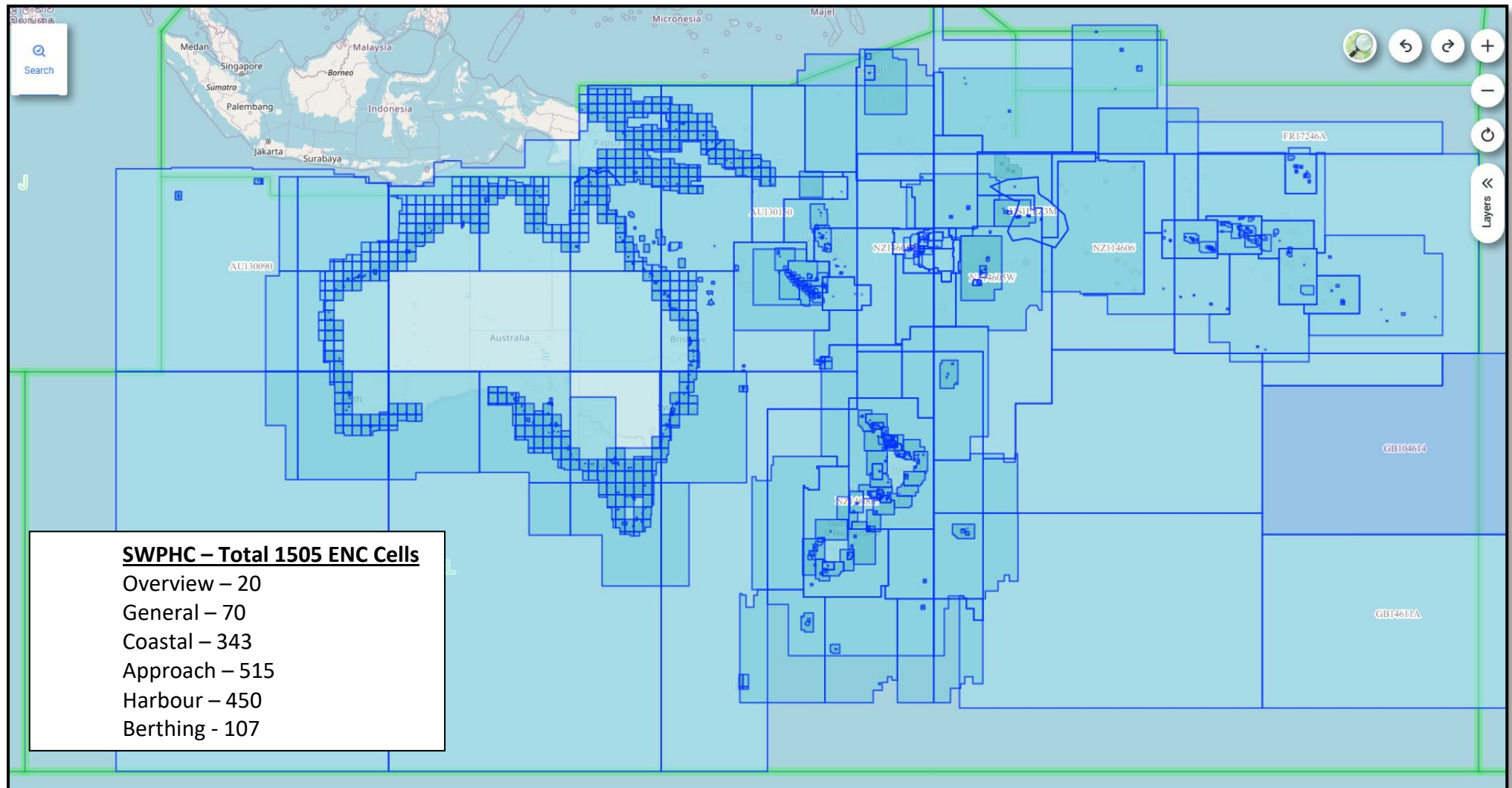
The third SWPHC S-100 Workshop was conducted online on 22nd November 2023. There were a number of presentations on S-100 Implementation progress from Australia, New Zealand, USA and UK as well as an S-100 Developments presentation from IC-ENC and presentation from IIC on the Path to S-101.

Presentations and recording of the workshop can be found at [Events & recordings | IHO](#).

12. Recommendations for discussion at SWPHC 21

1. Members of the SWPHC note this report.
2. Approve Version 1.2 of ICCWG Terms of Reference which has been updated for S-100 coordinator role and responsibilities.

14. Annexe B – Status of ENC Coverage - Region L



15. Annexe C – Status of SWPHC ENC Coverage – Usage Band 1 (Overview)

