

**16TH MEETING OF THE SOUTH WEST PACIFIC HYDROGRAPHIC
COMMISSION (SWPHC16)
Alofi, Niue, 13 - 15 February 2019**



NATIONAL REPORT FROM AUSTRALIA TO THE SWPHC16

Reference: IHO Resolution 2/1997 as amended

1. Executive summary

The Australian Hydrographic Office (AHO) is the Department of Defence agency responsible for the publication and distribution of nautical charts and other information required for the safety of ships navigating in Australian waters. The AHO is also responsible for the provision of operational surveying support and maritime Military Geographic Information (MGI) for Australian Defence Force (ADF) operations and exercises.

HydroScheme Industry Partnership Program

SEA 2400 Phase 1 – Hydrographic Data Collection Capability will introduce an effective combination of military and commercial maritime environmental data collection capabilities, driving fundamental change to how these services will be delivered by Defence into the future. To implement these changes the SEA2400-1 Project will bring into service two distinct capabilities: (i) the HydroScheme Industry Partnership Program (HIPP) will provide the capability needed for Defence to meet its obligations under national and international legislation; and (ii) the Strategic Military Survey Capability (SMSC) that will focus on meeting Defence’s military requirements for data in the maritime environment.

2. Surveys:

Hydroscheme continues to be reviewed and targeted to best meet national and regional requirements. HydroScheme 2017-2020 was published in October 2017. HydroScheme 2017-2020 is available at www.hydro.gov.au.

Laser Airborne Depth Sounder (LADS)

LADS conducted a range of HydroScheme tasks in 2018 in the Great Barrier Reef (multiple HI) and Papua New Guinea (HI612).

Hydrographic Ships (HS) LEEUWIN and MELVILLE

Both ships spent much of 2018 conducting surveys in Papua New Guinea waters to support the Asia-Pacific Economic Cooperation (APEC) 18 Forum in Port Moresby and to improve charting quality for the area. During the year *Melville* was fitted with a Reson SeaBat T50-P Multibeam Echosounder.

Survey Motor Launch (SML) MERMAID, PALUMA, SHEPPARTON and BENALLA

HMAS *Paluma* and *Mermaid* completed surveys in Torres Strait (HI610) and the Timor Sea (HI615). HMAS *Shepparton* and *Benalla* conducted a survey in the Kimberley region of north Western Australia (HI611) to improve navigation safety for tourism operators.

3. New charts & updates:

Australia is the Primary Charting Authority (PCA) for two Pacific Island Countries, as shown below:

Nation	Paper Charts	ENCs	Total
Papua New Guinea	78	159	237
Solomon Islands	14	41	55

a) ENCs

In August 2017 Australia became the PCA for the Solomon Islands and 41 ‘SB’ ENCs were successfully added to our Portfolio with a number of ENC cells updated from new data in the vicinity of Honiara and Gizo. There is a total of 894 ENC cells published in Australian portfolio.

Other activities

Recent groundings have highlighted a disconnection between universally accepted chart generalisation practices and ECDIS performance at route planning and route monitoring stages. During chart compilation is usual practice to ‘convert’ area features into point features when the corresponding point symbology ‘covers’ the area feature at the product’s compilation scale. The problem with this practice is that ECDIS checks the routes with no consideration of the size of the symbol, it only performs an ‘intersect’ with the true centre of the symbol. By depicting the real shape and size of shoals, we can reduce the number of ‘false negatives’ reported by the ECDIS check route routine.

The AHS is remediating the existing Aus ENC portfolio by double encoding OBSTRN area features at the same location as UWTROC and OBSTRN point features. The new OBSTRN area feature will have all the same attributes as the 'source' point object.

b) ENC Distribution method

Australia is a member of IC-ENC and distributes all Australian ENCs through IC-ENC Australia. View the IC-ENC World Catalogue here:

<http://geosig.hidrografico.pt/flexviewers/ICENC/>

Australia's national ENC service, known as 'AusENC' supports vessels operating within Australian, Solomon Islands and Papua New Guinean waters. This AusENC service now includes the full portfolio of published ENC covering Australian, Papua New Guinea and Solomon Islands waters. It is sold in a range of large and small geographical area packs at affordable prices. A free fortnightly web-based update service is included in the subscription price. For more information visit the AHO website at: www.hydro.gov.au/prodserv/digital/ausENC/enc.htm

The local AusENC service complements the international services available through the global network of distributors of the International Centre for ENC (IC-ENC).

c) RNCs

The AHO no longer produces RNC

d) INT charts

Nil

e) National paper charts

In August 2017 Australia became the PCA for the Solomon Islands and 14 new navigation charts and an Index chart were published under the 'SLB' prefix.

A new Solomon Island chart of Marovo Lagoon is currently being compiled – to be published in 2019. A new edition of Aus622 – Port Moresby and corresponding harbour ENC was published in Nov 2018 incorporating new surveys in anticipation of the APEC summit.

Australia currently has a 482 paper charts in its portfolio. Detailed information of the full Australian chart portfolio can be found on the AHO website at

<http://www.hydro.gov.au/prodserv/paper/auspapercharts.htm>

Paper Charts published since the SWPHC15 Meeting	
AHO	South West Pacific
NC: 0	<i>Total: 5</i>
NE: 48	<ul style="list-style-type: none"> ▪ AUS622 - Port Moresby ▪ SLB101 - Anchorages in Guadalcanal Island ▪ SLB102 - Plans in the New Georgia Group ▪ SLB1001 - SI Index Charts ▪ SLB1002 - SI Index ENC's
<i>Total: 48</i>	

Paper Charts scheduled for publication in 2019	
AHO	South West Pacific
NC: 1	NC: 1 – SLB108 – Marovo Lagoon
NE: 51	NE: 5 (Aus506, Aus507, Aus621, Aus662 & Aus651)
<i>Total: 52</i>	<i>Total: 6</i>

The AHO continues to focus on system and process upgrades. Implementation of Bathymetry Database and enhancements to Chart Product Management System, Tides Information System, Wrecks Database, Maritime Boundaries database, Product Delivery System, Workflow and Survey Planning systems are underway.

f) Other charts

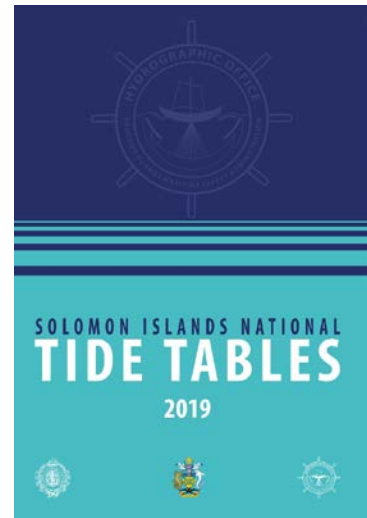
Nil.

g) Problems encountered

Nil.

4. New publications & updates:

- a) Annual Australian Tide Tables and inaugural Solomon Island Tides Tables published
- b) Working on new edition of Seafarers Handbook for Australian Waters, due for release in 2019.
- c) Investigating Digital publications and upgrade path for AusTides.



5. MSI

a) Existing infrastructure for transmission

Australia is the coordinator for NAVAREA X, which extends from the Antarctic coast to the equator and from 080E to 170E longitudes. The Self-Assessment report for NAVAREA X for the period July 2017 to June 2018 was submitted to the IHO World-Wide Navigational Warning Service (WWNWS) Sub-Committee Meeting (WWNWS10) held in Monaco on 27 to 31 August 2018. The meeting also comprised the 2nd Joint meeting of the IHO WWNWS-SC and the World Meteorological Organization (WMO) Committee on the World-Wide Met-Ocean Information Warning Service (WMMIWS). A copy of the Self-Assessment report provided to the WWNWS10 meeting has been submitted for consideration under the SWPHC16 Meeting agenda item 12 (Report on GMDSS, MSI and NAVAREA Coordination).

b) New infrastructure in accordance with GMDSS Master Plan

Inmarsat completed its migration of Inmarsat-C satellite services from the I3 to I4 constellation on 12 December 2018. The I4 satellites have substantially different satellite service footprints and this has altered the provision of services within NAVAREA X. All Australian SafetyNET Coastal Warning broadcasts are now promulgated only through the new POR satellite. NAVAREA X SafetyNET Long-Range Navigational Warnings continue to be promulgated by both the IOR and POR satellites. All other details remain unchanged. The GMDSS Masterplan and relevant nautical publications are in the process of being revised.

New forecast and warning service for Southern Ocean

From 6 February 2019, the Bureau of Meteorology will provide forecast and ocean wind warning Maritime Safety Information (MSI) services for a new 'Southern' area that extends from 50°S to 65°S, and between 80°E and 160°E. Ocean wind warnings for this area will be issued as needed and updated every 6 hours. The products are primarily distributed to ships via the Global Maritime Distress and Safety System on the satellite SafetyNET system. They will also be available on the Bureau's website, MarineLite and HF radio services.

For maps of the high seas forecast and warning areas visit

<http://www.bom.gov.au/marine/high-seas.shtml>

MarineLite service upgraded to include charts

The Bureau's MarineLite webpages are designed for mariners, such as those on cruising yachts and commercial vessels, whose offshore access is limited to satellite internet communication channels, or in areas of marginal mobile phone coverage. Previously these pages contained text-only forecasts and warnings, but this upgrade will include the provision of "lite" charts with small file sizes.

The inclusion of "lite" charts enables users to be better informed, aiding decision making and situational awareness to improve safety outcomes.

<http://www.bom.gov.au/marine/lite/>

c) Problems encountered

Monitoring of NAVAREA X MSI transmissions in accordance with the requirements of Resolution A.706(17) promulgated via the new I4 generation IOR satellite has proven problematic. This is due to the IOR satellite footprint now falling well outside of Australia, it introduces major challenges and additional costs associated with physically

siting the equipment in a remote location and then the ability to modify that equipment to make it suitable for remote monitoring for EGC broadcasts. Australia continues to work with Inmarsat and equipment manufacturers to implement an effective solution.

Detailed information about MSI to update IHO Publication C-55 (*Status of Hydrographic Surveying and Charting Worldwide*) is submitted in Annex B.

6. C-55 C-55 updates are outlined in Annex B

7. Capacity Building

a) Training received, needed, offered

RAN Hydrographic School

The RAN Hydrographic School provides training courses in Hydrographic surveying for officers and sailors from Australia and the region under the Defence Cooperation Programme.

The RAN Hydrographic School provides three levels of training consisting of a basic, intermediate and advanced level. The basic and intermediate courses are traditionally attended by Australian sailors while the advanced level course (H2) is attended by sailors and officers from Australia and the region.

The basic and intermediate courses are recognised nationally while the H2 training provided is in accordance with the FIG/IHO International Board on Standards of Competence for Hydrographic Surveyors Category B course with Option 1 (Hydrography for Nautical Charting) and Option 6 (Military Hydrography).

In 2018 the H2 course consisted of students from Australia (10), Pakistan (1), Malaysia (1) and New Zealand (3). The majority of places on the 2019 H2 course have not been identified as yet.

Two Basic Courses and one Intermediate Course were conducted for RAN sailors in 2018 with 24 students attended the Basic Courses (14 weeks duration) and 9 students attended the Intermediate Course (8 weeks duration).



8. Oceanographic activities

a) Tide gauge networks

Two permanent tide gauge networks are operated in the region by the Bureau of Meteorology.

The Australian Baseline Sea Level Monitoring Array currently consists of 16 permanent gauges monitoring sea level and ancillary meteorological parameters around the Australian Coastline, including one at Cocos Island. The locations of the gauges are shown in Figure 1 (below). An additional station at Port Stanvac, South Australia operated from 1992 until December 2010 when it was decommissioned with the closure of the oil refinery and rehabilitation of the site, but a replacement site is being investigated. The installation of an additional gauge at Thursday Island in Torres Strait occurred in 2015.

Monthly reports are published by the Bureau and can be located on their website at: www.bom.gov.au/oceanography/projects/abslmp/reports.shtml

The Pacific Sea Level Monitoring Project currently consists of 14 permanent gauges monitoring sea level and ancillary meteorological parameters throughout the South Pacific region. The locations of the gauges are shown in Figure 1 (below). Installation of an additional gauge at Niue occurred in 2015.

Monthly reports are published by the Bureau and can be located on their website at: <http://www.bom.gov.au/pacific/projects/pslm/index.shtml>

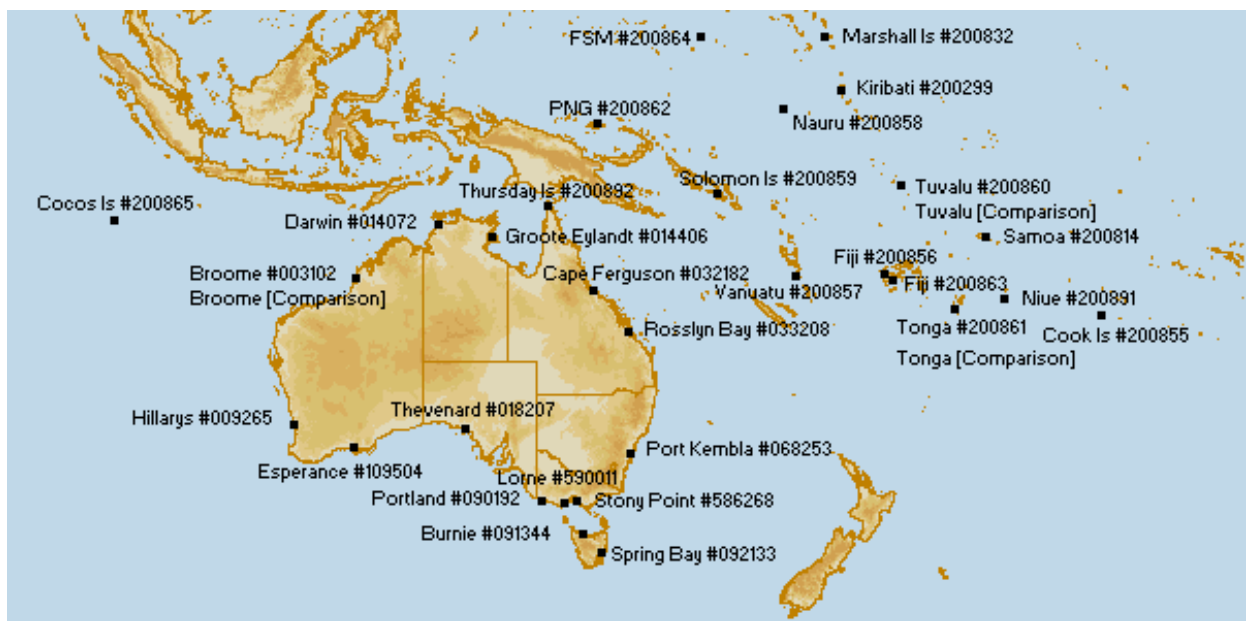


Figure 1: Permanent tide gauge network operated by the Bureau of Meteorology, including the Australian Baseline Sea Level Monitoring Array (16 sites) and Pacific Sea Level Monitoring Project (14 sites).

The permanent tide gauges were upgraded in 2009-2010 (Baseline) and 2011-2013 (Pacific) with modernised data loggers, real-time satellite communications and additional radar-type water level sensors. Co-located comparison stations were installed at Broome and Tuvalu in 2017 and at Tonga in 2018 in preparation for

becoming the permanent operational tide gauges at those locations due to wharf refurbishments.

The Australian Tsunami Warning System (ATWS) is supported by the 30 permanent Australian and Pacific tide gauges (**Figure 1**) as well as an additional network of 17 radar-type tide gauges at four Pacific and 13 Australian sites as shown in **Figure 2**. An array of six deep-ocean tsunameters (DART buoys) brings the Australian tsunami-monitoring network to 53 sites in all.

The primary purpose of these additional stations is for the detection of tsunami with real time data made available to support the operations of the Pacific Tsunami Warning System. Further information about the Australian Tsunami Warning System is available at <http://www.bom.gov.au/tsunami/about/atws.shtml>

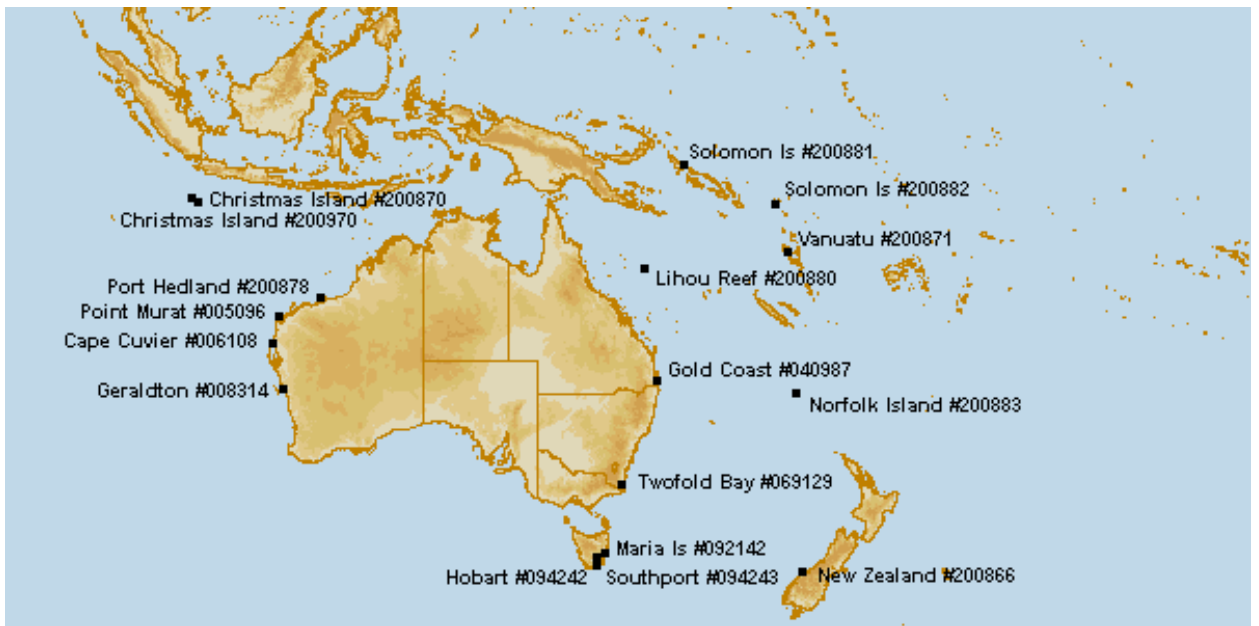


Fig. 2: Additional ATWS radar gauges (17 sites) that used in conjunction with the permanent tide gauge network for monitoring tsunamis in the Australian region.

b) New equipment

Surveyable mounting of the secondary radar water level sensors and integration of mounting pillars for continuous GNSS/GPS equipment on the tide gauge infrastructure are slowly being introduced into the network, while acoustic water level sensors remain the primary sensor at most sites.

c) Problems encountered

Generally, the gauges operate autonomously in between calibration and servicing on a routine 18-month schedule, with average data return from the permanent tide gauge network exceeding 95%. The variety of day-to-day problems that do arise include power supply, data logger, data communications and sensor malfunctions, which are managed either remotely, by voluntary first in maintenance support or through contingency field trips.

9. Other activities

a) Participation in IHO Working Groups

	Meeting	Chair/Vice Chair	Member/ Associate/ Observer
	Council		M
HSSC	Hydrographic Services and Standards Committee	Y	M
NCWG	Nautical Cartography Working Group		M
ENCWG	ENC Working Group		M
DQWG	Data Quality Working Group		M
MSDIWG	Marine Spatial Data Infrastructure Working Group		M
NIPWG	Nautical Information Provision Working Group		M
HSPT	S-44 Hydrographic surveys Project Team		M
TWCWG	Tidal, Water Level and Currents Working Group		M
WEND	World-Wide Electronic Navigational Chart Database		M
ABLOS	Advisory Board on the Law of the Sea		O
CSBWG	Crowd Sourced Bathymetry Working Group		O
S-100	S-100 Working Group		M
S-101	Working Group		M
S-104	Development Group		M
S-111	Development Group		M
S-121	Development Group		M
S-129	Development Group		M
S-412	Development Group		M
IRCC	Inter Regional Coordination Committee		M
CBSC	Capacity Building Sub-Committee		
HCA	HCA Hydrographic Commission on Antarctica		M
NIOHC	North Indian Ocean Hydrographic Commission		A
SAIHC	Southern Africa and Islands Hydrographic Commission		O

SWPHC	South-West Pacific Hydrographic Commission	Y	M
EAHC	East Asian Hydrographic Commission		O
WWNWS	World-wide Navigational Warning Service Sub-Committee		M
FIG/IHO/ICA	International Board on Standards of competence for Hydrographic Surveyors and Nautical Cartographers		M
GEBCO	Joint IOC-IHO Guiding Committee for the General Bathymetric Chart of Oceans (GEBCO)		M
IHO-IOC GGC	GEBCO Guiding Committee		M
SCUFN	GEBCO Sub Committee on Undersea Feature Names		M

Progress update on S101 Electronic Navigation Chart specification

S-101 Ed 1.0.0 has been published in December 2018 (for testing and implementation only. Still pending finalisation of portrayal, encryption and validation checks).

AHO attended the last S-101PT meeting in June 2018. Next meeting is in June 2019 (Monaco).

Progress on S-121 Maritime Limits and Boundaries specification

The draft S-121 standard was initially considered and approved by HSSC 10 in May 2018, comments and feedback from IHO members by were considered during the face to face S-121 Project Team meeting at New York in December 2018. It is expected that version 1 of the standard will be released for testing following adoption by HSSC 11 in May 2019.

Progress on S-111 Surface Currents and S-104 Water Level Information for Surface Navigation specifications

The IHO has published the first edition of S-111 Surface Currents in December 2018. This makes the standard available for implementation and testing purposes. The S-100 technical working group reviewed the S-104 Water level Information for Surface Navigation document in Sept 2018. The April 2019 meeting for TWCWG will look at addressing a few issues raised by the review with aim for first edition publication in the next 12 months.

Progress update on S-412 Weather Overlay specification

The World Meteorological Organization has considered the structure of S-100 specifications for met-ocean information services at a meeting in Monaco during August 2018. The Committee for the Worldwide Met-Ocean Information and Warning Service (WWMIWS) recommended that the S-412 specification be divided into 3 distinct S-100 specifications to improve maintainability and testing. This recommendation has been submitted to IHO for consideration at relevant meetings during 2019.

b) Meteorological data collection

Australia, through the Bureau of Meteorology, collects meteorological data at sea via a number of methods:

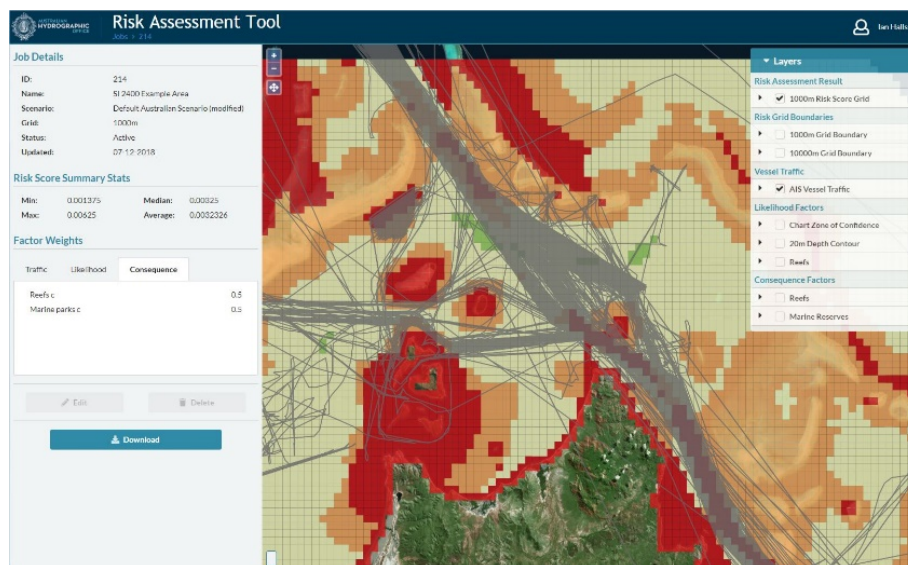
- 55 voluntary ships recording and reporting weather observations
- 4 voluntary ships performing Expendable Bathythermograph (XBT) sampling
- 2 moored buoys measuring waves
- 1 moored buoy measuring air pressure and sea surface temperature
- 43 drifting buoys recording air pressure and sea surface temperature
- 4 ARGO profiling floats per annum contributed to the ARGO Australia fleet (total: 405 floats currently active) profiling sea temperature and salinity

IMO recently released an updated version of MSC 1293 encouraging participation by voluntary observing ships in the collection of meteorological data. Contact the Bureau of Meteorology for further information on the programme.

c) Use of risk to support survey and chart updating priorities

Survey Planning Risk Assessment Tool

The AHO has developed a risk assessment tool based on the methodology adopted by LINZ. The source code for the risk assessment was kindly supplied by LINZ to the AHO and the code has been re-developed into open source code and tools on an Amazon Web Service (AWS) cloud instance. The first phase of development will be completed in March 2019 and will enable the AHO to incorporate AIS data (supplied monthly by AMSA) and geospatial data overlays to determine a graphical risk display (see image - Cape Melville, QLD). The user has the flexibility to tweak Traffic, Likelihood and Consequence factor weights to develop use case scenarios. Future development will include increasing the number of geospatial themes, scenario library handling and feedback from AHO users



10. Conclusions

AHO continues to prepare for the HIPP revolution with upgrades to systems and processes, workflow and data management protocols.

With a government focus on our Pacific Partners expect to see more Navy ships in the South Pacific region in the coming year.

Input to the IHO Publication P-5 (*Yearbook*)
Country: AUSTRALIA
Organization: Australian Hydrographic Office

Contact information/ Informations de contact / Información de contacto	
-National Hydrographer or equivalent -Directeur du service hydrographique ou équivalent -Director del Servicio Hidrográfico o equivalente	Post: Hydrographer of Australia – Director-General Hydrography and METOC (DGHM) Name: Commodore Fiona FREEMAN, RAN Postal address: 8 Station St, Wollongong, NSW 2500, Australia Tel: +61 (0) 2 4223 6500 Fax: +61 (0) 2 4223 6599 Email: international.relations@hydro.gov.au
-Other point(s) of contact -Autre(s) point(s) de contact -Otros punto(s) de contacto	International.relations@hydro.gov.au
-Web site -site web -sitio web	http://www.hydro.gov.au
Country information / Informations sur le pays/ Información sobre el país	
-Declared National Tonnage -Tonnage national déclaré -Tonelaje Nacional Declarado	Tonnage: 1,917,550 Date: September 2016
-National day -Fête nationale -Fiesta nacional	26 January
-Date of establishment and Relevant National Legislation -Date de mise en place et législation nationale pertinente -Fecha de constitución y legislación nacional pertinente	Hydrographic Office, R.A.N – Established 01 October 1920 ; Commonwealth Naval Order 275 dated 14 December 1920. Navigation Act 2012
-Date first joined IHO -Date d'adhésion à l'OHI -Fecha de adhesión a la OHI	21/06/1921
-Date ratification Convention -Date de ratification de la Convention -Fecha de ratificación de la Convención	25/11/1968

-Remarks on membership -Remarques sur l'adhésion -Comentarios sobre la adhesión	Included under "British Empire" with the U.K. from 1921.
Agency information/ Information sur l'agence/ Información sobre la agencia	
-Top level parent organisation -Organisme mère -Organización asociada de nivel superior	Dept of Defence
-Principal functions of the organisation or the department -Attribution principales de l'organisme ou du département -Principales funciones de la Organización o departamento	Hydrographic and bathymetric surveys. Notices to Mariners Nautical charts. Tides, Tidal Streams, Currents Maritime Military Geospatial Products and Services. Australian Hydrographic Data Archive. PCA for Papua New Guinea and Solomon Islands
-Annual operating budget -Budget annuel -presupuesto anual	
-Total number of staff employed -Effectifs totaux -Número total de personal empleado	
-Number of INT charts published -Nombres de cartes INT publiées -Número de cartas INT publicadas	40
-Total number of paper charts published-Nombre total de cartes papier publiées-Número total de cartas de papel publicadas	468 Aus and 14 SLB = 482 total
-Number of ENC cells published -Nombres de cellules ENC publiées -Número de células ENC publicadas	853 AU cells and 41 SB cells = 894 total
-Number of Other charts -Nombre d'Autres cartes -Número de Otras cartas	2 AU and 2 SB Index Charts = 4 total

<p>-Type of publications produced -Type d'ouvrages produits -Tipo de publicaciones producidas</p>	<p>Product Index – searchable website tool</p> <p>Fortnightly Notices to Mariners (AHP18)</p> <p>Seafarers Handbook for Australian Waters (AHP20)</p> <p>Australian National Tide Tables (AHP11)</p> <p>Australian Electronic Tide Tables ('AusTides' - AHP114)</p> <p>Australian Chart and Publication Maintenance Handbook 4th Edition (AHP24)</p> <p>Maritime Gazetteer of Australia (geographic names as shown on Australian paper nautical charts) – searchable website tool</p>			
<p>-Detail of surveying vessels/ aircraft -Détail des bâtiments hydrographiques / aéronefs -Detalle de los buques hidrográficos / aeronaves</p>	<p>-Name -Nom -Nombre</p>	<p>-Displacement -Déplacement -Desplazamiento</p>	<p>-Date Launched -Date de mise en service -Fecha de botado</p>	<p>-Number of crew -Nombre de l'équipage -Tripulación</p>
	<p>HMAS LEEUWIN</p>	<p>2550</p>	<p>1997</p>	<p>56</p>
	<p>HMAS MELVILLE</p>	<p>2550</p>	<p>1998</p>	<p>56</p>
	<p>HMAS PALUMA</p>	<p>380</p>	<p>1989</p>	<p>13</p>
	<p>HMAS MERMAID</p>	<p>380</p>	<p>1989</p>	<p>13</p>
	<p>HMAS SHEPPARTON</p>	<p>380</p>	<p>1989</p>	<p>13</p>
	<p>HMAS BENALLA</p>	<p>380</p>	<p>1990</p>	<p>13</p>
	<p>LADS Unit Dash 8 (modified)</p>	<p>Aircraft</p>	<p>1993</p>	<p>9 (navy) +5 (contractor)</p>
	<p>Deployable Geospatial Support Team (DGST)</p>	<p>Vessel of Opportunity</p>	<p>Early 1980s</p>	<p>4</p>
	<p>ASV WYATT EARP</p>	<p>6.3</p>	<p>1992</p>	
<p>-Other information of interest</p>				

Input to the IHO Publication C-55 (*Status of Hydrographic Surveying and Charting
Worldwide*)
Country: **AUSTRALIA**

C-55 Summary for:				Comments on Charts:
Country:	AUSTRALIA			
Country Iso Code:	AU – AUS - 036			
Country SubCode:				
INT Region:	L			
Country/Depend:				
Last updated:	30 January 2019			
Provided by:	Australian Hydrographic Office			
Chart coverage	Passage (%)	Coastal (%)	Port (%)	Comments on Surveys:
INT	100	100		
RNC	0	0	0	
ENC	100	100	100	
Status of Paper Charts				
Paper charts with depths in meters (%)			100	
Paper charts referenced to a satellite datum (%)			100	
Status of surveys	Adequate (%)	Resurvey (%)	No survey (%)	
0-200m	35	20	45	
> 200m	10	5	85	

MSI	Y/N	Comments on MSI:
Local warning	YES	Promulgated by Port Authorities
Coastal warning	YES	Promulgated by SafetyNET & CRS Network
Nav warning	YES	Promulgated by SafetyNET & NAVAREA X
Port warning	YES	Promulgated by Port Authorities
GMDSS	Y/N	Comments on GMDSS:
Master Plan	YES	
Area A1	NO	
Area A2	NO	
Area A3	YES	Australia
NAVTEX	NO	
SafetyNet	YES	Australia – Coastal Warnings provided via SafetyNET

Country: AUSTRALIA – Christmas Island

C-55 Summary for:				Comments on Charts:
Country:	AUSTRALIA			
Country Iso Code:	AU – AUS - 036			
Country SubCode:				
INT Region:	L			
Country/Depend:				
Last updated:	30 January 2019			
Provided by:	Australian Hydrographic Office			
Chart coverage	Passage (%)	Coastal (%)	Port (%)	Comments on Surveys:
INT	100	100		
RNC	0	0	0	
ENC	100	100	100	
Status of Paper Charts				
Paper charts with depths in meters (%)			100	
Paper charts referenced to a satellite datum (%)			100	
Status of surveys	Adequate (%)	Resurvey (%)	No survey (%)	
0-200m	3	97	0	
> 200m	1	0	99	

MSI	Y/N	Comments on MSI:
Local warning	YES	Harbour Master
Coastal warning	NO	
Nav warning	YES	NAVAREA X
Port warning	YES	Harbour Master
GMDSS	Y/N	Comments on GMDSS:
Master Plan	NO	No requirement
Area A1	NO	
Area A2	NO	
Area A3	YES	Australia / Japan
NAVTEX	NO	
SafetyNet	YES	Australia / Japan

Country: AUSTRALIA – Cocos (Keeling) Islands

C-55 Summary for:				Comments on Charts:
Country:	AUSTRALIA			
Country Iso Code:	AU – AUS - 036			
Country SubCode:				
INT Region:	L			
Country/Depend:				
Last updated:	30 January 2019			
Provided by:	Australian Hydrographic Office			
Chart coverage	Passage (%)	Coastal (%)	Port (%)	Comments on Surveys:
INT	100	100		
RNC	0	0	0	
ENC	100	100	100	
Status of Paper Charts				
Paper charts with depths in meters (%)			100	
Paper charts referenced to a satellite datum (%)			100	
Status of surveys	Adequate (%)	Resurvey (%)	No survey (%)	
0-200m	1	0	99	
> 200m	4	0	96	

MSI	Y/N	Comments on MSI:
Local warning	YES	
Coastal warning	NO	
Nav warning	YES	
Port warning	YES	
GMDSS	Y/N	Comments on GMDSS:
Master Plan	NO	No requirement
Area A1	NO	
Area A2	NO	
Area A3	YES	Australia
NAVTEX	NO	
SafetyNet	YES	Australia

Country: AUSTRALIA – Heard Island (H)

C-55 Summary for:				Comments on Charts:
Country:	AUSTRALIA – Heard Island (H)			
Country Iso Code:	AU – AUS - 036			
Country SubCode:				
INT Region:	H			
Country/Depend:				
Last updated:	30 January 2019			
Provided by:	Australian Hydrographic Office			
Chart coverage	Passage (%)	Coastal (%)	Port (%)	Comments on Surveys:
INT	100	100	100	
RNC	0	0	0	
ENC	100	100	100	
Status of Paper Charts				
Paper charts with depths in meters (%)			100	
Paper charts referenced to a satellite datum (%)			100	
Status of surveys	Adequate (%)	Resurvey (%)	No survey (%)	
0-200m	1	0	99	
> 200m	10	0	90	

MSI	Y/N	Comments on MSI:
Local warning	NO	
Coastal warning	NO	
Nav warning	YES	
Port warning	NO	Australian Antarctic Division would provide on request
GMDSS	Y/N	Comments on GMDSS:
Master Plan	NO	No requirement
Area A1	NO	
Area A2	NO	
Area A3	YES	
NAVTEX	NO	
SafetyNet	YES	South Africa – NAVAREA VII

Country: AUSTRALIA – Macquarie Island (L)

C-55 Summary for:				Comments on Charts:
Country:	AUSTRALIA			
Country Iso Code:	AU – AUS - 036			
Country SubCode:				
INT Region:	L			
Country/Depend:				
Last updated:	30 January 2019			
Provided by:	Australian Hydrographic Office			
Chart coverage	Passage (%)	Coastal (%)	Port (%)	Comments on Surveys:
INT	100	100		
RNC	0	0	0	
ENC	100	100	100	
Status of Paper Charts				
Paper charts with depths in meters (%)			100	
Paper charts referenced to a satellite datum (%)			100	
Status of surveys	Adequate (%)	Resurvey (%)	No survey (%)	
0-200m	1	0	99	
> 200m	30	0	70	

MSI	Y/N	Comments on MSI:
Local warning	NO	
Coastal warning	NO	
Nav warning	YES	Australia – NAVAREA X
Port warning	YES	Part of the Australian state of Tasmania
GMDSS	Y/N	Comments on GMDSS:
Master Plan	NO	No requirement
Area A1	NO	
Area A2	NO	
Area A3	YES	Australia
NAVTEX	NO	
SafetyNet	YES	Australia

Country: AUSTRALIA – Norfolk Island

C-55 Summary for:				Comments on Charts:
Country:	AUSTRALIA			
Country Iso Code:	AU – AUS - 036			
Country SubCode:				
INT Region:	L			
Country/Depend:				
Last updated:	30 January 2019			
Provided by:	Australian Hydrographic Office			
Chart coverage	Passage (%)	Coastal (%)	Port (%)	Comments on Surveys:
INT	100	100		
RNC	0	0	0	
ENC	100	100	100	
Status of Paper Charts				
Paper charts with depths in meters (%)			100	
Paper charts referenced to a satellite datum (%)			100	
Status of surveys	Adequate (%)	Resurvey (%)	No survey (%)	
0-200m	10	0	90	
> 200m	1	0	99	

MSI	Y/N	Comments on MSI:
Local warning	YES	Harbour Master
Coastal warning	NO	
Nav warning	YES	NAVAREA X
Port warning	YES	Norfolk Island Administration is in contact with the AHO
GMDSS	Y/N	Comments on GMDSS:
Master Plan	NO	No requirement
Area A1	NO	
Area A2	NO	
Area A3	YES	Australia
NAVTEX	NO	
SafetyNet	YES	Australia

See Separate document SWPHC16-12A (NAVAREA X)