22th MEETING OF THE SOUTH WEST PACIFIC HYDROGRAPHIC COMMISSION (SWPHC22)
Koror, Palau, 3-5 March 2025

NATIONAL REPORT FROM INDONESIA TO THE SWPHC-22

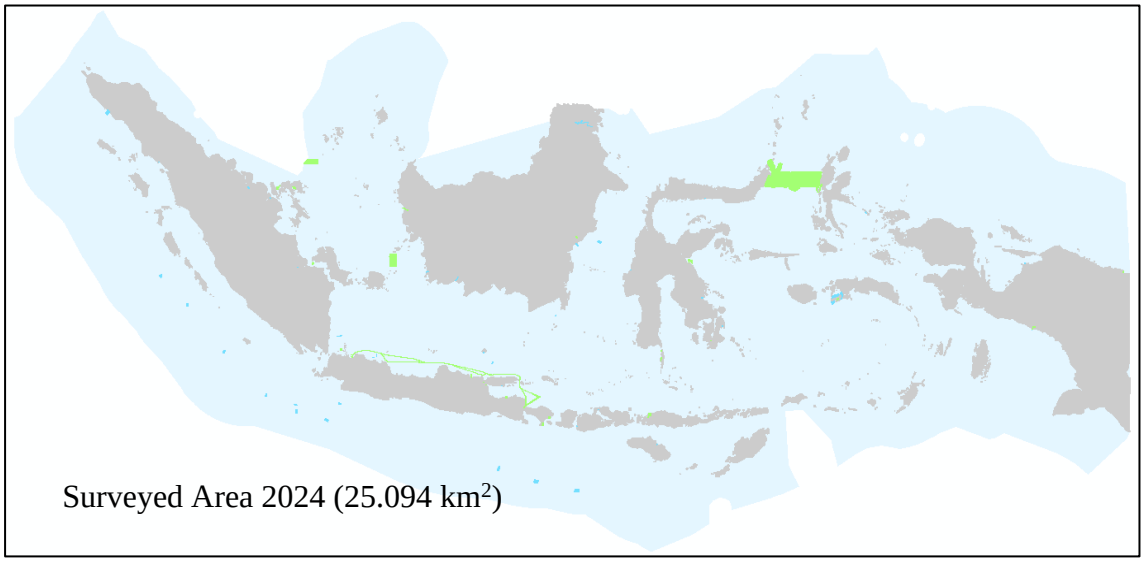
Reference: IHO Resolution 2/1997 as amended

Executive summary

1. Hydrographic Office / Service:
   a) Name of the institution: Pushidrosal (Indonesian Navy Hydro-Oceanography Center)
   b) Description: Pushidrosal responsible for conducting hydrography and oceanography activities, including surveys, research, nautical charting, publications, marine environments and navigation safety of shipping, both for military and public purposes.
   c) Submitted by: infohid@pushidrosal.id;

   Detailed information to update IHO Publication P-5 (*Yearbook*) is submitted in Annex A.

2. Surveys: (Survei coverage in 2024)
   a) Coverage of new surveys: Pushidrosal has conducted 22 hydrographic surveys in 2024.



Surveyed Area 2024 (25.094 km^2)

   b) New technologies and /or equipment. Pushidrosal employs portable MBES and hull mounted MBES. Recently, Pushidrosal using MBES Kongsberg EM 2040, Reson Teledyne T-20, Reson Teledyne T-50P, and R2 Sonic. In addition, ROVs are equipped to assigned unit surveys.

c) Modern Survey Ships. Pushidrosal has 2 modern survey ships (KRI Rigel 933 and KRI Spica 934) as multipurpose research vessel commissioned in 2015. The ship also assigned for search and rescue missions. These ship equipped with an AUV (autonomous underwater vehicle) which has capability to take underwater images from 1,000 meters depth and send data periodically by using supervised mode. Another equipment which has been fitted on KRI Rigel and KRI Spica is remotely operated vehicle (ROV) which equipped with mechanic arms to provide visual information and take samples from the bottom of the ocean.

d) Problems encountered

Detailed information about surveys to update IHO Publications P-5 (*Yearbook*) and C-55 (*Status of Hydrographic Surveying and Charting Worldwide*) is submitted in Annexes A and B, respectively.

3. New charts & updates: Currently Pushidrosal has 601 number of paper charts and 631 ENC cell. ENC production are based on paper charts. Indonesia striving to migrate to the Hydrographic Production Database to improve chart and ENC's quality and consistency. Paper charts are distributed locally by Pushidrosal Cooperation, but ENC are distributed locally and internationally through IC-ENC. Other chart products are for the internal uses of the Navy, and also to support tourism sector, environment, and maritime sector. Since 2017 Pushidrosal produced leisure charts called "Yacht Recreation" chart. Our ENC is also utilized by cruise vessel visiting Indonesia. Our main problem are the availability of recent survey data, especially in some remote islands where tourism industry and local economy is growing.

Detailed information about charting to update IHO Publications P-5 (*Yearbook*) and C-55 (*Status of Hydrographic Surveying and Charting Worldwide*) is submitted in Annexes A and B, respectively.

4. New publications & updates:

a) New Publications:

1) Nautical Charts And Publications Catalogue
2) Chart Number 1
3) Nautical Almanac
4) Tidal Stream Tables
5) Tide Tables
6) Sailing Handbook
7) Indonesian Notices To Mariners
8) Sailing Direction Section I
9) Sailing Direction Section II
10) Sailing Direction Section III
11) Sailing Direction Section IV
12) Indonesian List Of Lights
13) List Of Submarine Pipelines And Cables Indonesian Waters
14) Indonesia List Of Buoys
15) The Rise and Set of the Sun and the Moon Time Table In Indonesian Archipelago.

b) Updated publications:

1) Tide Tables Of Indonesian Archipelago
2) Tidal Stream Tables Of Indonesian Archipelago
3) Nautical Almanac
4) Indonesian Notices To Mariners
5) Indonesian Books and Nautical Charts Catalogue
6) Electronic Navigational Charts Catalogue
7) Sailing Handbook
8) The Rise and Set of the Sun and the Moon Time Table In Indonesian Archipelago.

c) Means of delivery, e.g. paper, digital:

Delivery of all publications is still in paper form with direct purchase to the store.

d) Problems encountered:

Publication and updating publication still manually, not online

Detailed information to update IHO Publication P-5 (*Yearbook*) is submitted in Annex A.

5. MSI

a) Existing infrastruction for transmission

(Held by Directorate General of Sea Transportation.)

b) New infrastructure in accordance with GMDSS Master Plan

In Indonesia, infrastructure of GMDSS under Transportation Ministry – Directorate General of Sea Transportation. In carrying out responsibilities to inform mariners in Indonesian waters concerning safety of navigation, Pushidrosal compiles information from the mariners and all Indonesian port authorities. Information fromthe mariners and port authorities be included into Radio Navigational Warning and send that information to Jakarta Radio. Jakarta Radio will inform it to all mariners which are sailing in Indonesia waters. Every marine accident that resulted in shipping hazards such as sinking, crashing, collision and missing contact vessel will be reported through Hidro Indo (HI) for general ship, and wire navigation (KN) for Indonesian Navy ships or notice to mariners (NTM). KN / HI issued at any time when marine accident happens, notice to mariners is published weekly on Friday.

c) Problems encountered.

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

6. C-55

The table with the latest information to update IHO Publication C-55 (*Status of Hydrographic Surveying and Charting Worldwide*) is provided in Annex B.

7. Capacity Building Offer of and/or demand for Capacity Building

a) Training received, needed, offered

1) Training received

(a) Long Hydrographic Course CAT-A (India)

(b) GEOMAC (Geospatial Marine Analysis and Cartography) CAT-B (UK)

(c) CAT-B Cartography (France - SHOM)

(d) CAT-B Cartography (China)

(e) Master Degree in Oceanography (Japan)

(f) International Hydrographic and Marine Engineering Program (IHMEP) Hydrographic Course CAT-B Gulfport Mississippi (USA)

(g) CAT-B Cartography (Japan)

2) Training Needed

(a) Training for Trainers Hydrographic Course.

(b) Hydrographic Course (Cat A).

(c) Training on S-101 and S-102.

(d) Training on S-104 and S-111

3) Training Offered

Hydrographic Survey Course at Cat B Level. (For your information, this year, one student from Fiji will undertake Category B education at Pusdikhidros)

b) Status of national, bilateral, multilateral or regional development projects with a hydrographic component. (In progress, planned, under evaluation or study)

1) Research in Satellite Derived Bathymetry collaboration with University of Indonesia and Indonesia National Institute of Aeronautic and Space (LAPAN);

2) Development of Indonesian Hydrographic Data Center cooperation with other national institution and agencies;

3) Development of Malacca Straits ENC collaboration with Singapore Maritime Port Authority (MPA), National Hydrography Service of Malaysia; Japan Hydrography Assosiation (JHA) and Malacca Strait Council (MSC).

4) Development of Marine Geospatial Database collaboration with Indonesia Geospatial Agencies (BIG).

5) Development of conservation area (protected area for marine corservation) collaboration with Ministry of Marine and Fisheries.

6) East Asia Hydrographic Leadership Programme collaboration with UKHO.

c) Description of request to be considered by the IHO/CBSC.

8. Oceanographic activities

a) General

1) **Tides**. Tidal data observation conducted during survey based from observation along 29 days, while tidal data from telemetry observation at least 1 year, we also get secondary tidal data from other National Agency.

2) **Currents**. Currents observation integrated the hydrography 18 locations, with the static method measurement and several disaster relief at Palu Bay and Sunda Strait with hull-mounted ADCPs. Current data that obtained from the survey is 15 or 29 days observational data. The tools that used for measurement are Current Meter Valeport 106 and ADCP.

3) **CTD**. CTD (Conductivity, Temperature and Depth) is the main tool for determining important physical properties of seawater, like Conductivity, Temperature (temperature), and Depth of the sea. This tool provide the distribution and variation of water temperature, salinity, and density that helps us to understand how the ocean affects life in it. CTD can measure Conductivity, temperature, salinity and speed of sound from the sea water. The tools that used for measurement are CTD Alec ASTD and CTD Midas., Midas Valeport SVK-2, CTD AML Minos, CTD AML Oceanographic.

4) **Sediments.** Sediment data were collected to determine the type of seabed and sedimentation rate. The data taken are Suspended load and Bedload.

5) **Turbidity.** Measurement of sea water transparency/turbidity is done in coastal and inland waters. Observations are made by drowning a secchi disk into the ocean until the maximum depth of a secchi disk is visible to the eye. The brightness data obtained is the maximum depth data secchi disk that can still be seen by the eye and expressed with the meter in accordance with the length of the rope from sea level to secchi disk. Observations just did only in the afternoon. The weather and cloud conditions must be recording. The purpose of the measurement of the data are to determine the condition of the brightness of a survey area.

b) GEBCO/IBC's activities

In oceanography data services for simulating currents and wave, Pushidrosal use data from hydrographic survey and Satellite Derived Bathimetry (only for specific area) and not using data from GEBCO/IBC's.

c) Tide gauge network

Pushidrosal also conducts active tidal observation activities in real time at 12 locations, 10 Tide Station was developed by MAWS System, and 2 Tide Station was developped by Pushidrosal. see Annex D. This observation is part of a large national scheme with a total of 187 collaboration stations between ministries and institutions.

1) **Telemetry Technology using Live Uninterrupted Water Sensor.** This tidal meter uses a radar system equipped with an ultrasonic sensor that will read the sea

level based on the water height from Tide Level. The sea level reading results will be sent to the cloud / web and then forwarded to the software to read the sea level data. This tool is able to measure the tidal data in real time every second, minute or hour. The telemetry sensors placed in the outermost island and sensitive navigation area.

2) **Shipping Illustration and Download of tidal data.** Sea level data that has been measured with LUWES tidal tool will be processed in Logger and then the data will be transmitted to Cloud / web that has been prepared. The data from the cloud / web recording of sea level can be downloaded using laptop, mobile phone and other devices (multiple acces) with GPRS network system. The downloaded tide data is real time with variations of data per second, every minute and every hour as we needed. Data resulted from this tool is a graphics and numerical with accuracy up to mm.

3) **Synchronization and Field Calibration.** This tidal measurement tools is designed in a simple way so it can make the process of calibration and field data synchronization easier. The calibration process by comparing the reading of this tool with the result of high water manual reading on the palm will make a good observation of quality operation. The result from this instrument, which is the distance from the sensor to the surface of the water, are automatically converted by Logger and calculating the reading offset of the tool with the palm manual readings

4) **Ultrasonic Sensor Logger Data.** This long period telemetry tool is equipped with Data Logger that serves as the processor. MAWS equipment system components consist of data logger, ultrasonic sensor, GPS timing, solar cell power supply system and free maintanance battery, and wireless communication. Ultrasonic sensor has a 42 KHz frequency and 1 millimeter resolution measurement with 10 Hz sampling rate data. Controlled time-monitoring system diagram with GPS time is to minimize time drift, the magnitude significantly distorts the observations on conventional systems using the usual clock. Data logger as in Figure 7 is equipped with a micro controller that can manage sensors, data storage and transmission as well as timing accurate because of GPS. Power consumption is quite efficient with a total of 1.5 Watt Hour, so the use of 12 Volt 24 AH battery voltage will be able to survive for 30 days although there is no solar radiation on solar sell. The sensor used in this tidal gauge is an Ultrasonic Sensor with a 200,000 hours life time. Maximum sensor distance to sea level is 10 meters. The sensor should be set perpendicular to the MAWS tool using the waterpas, so the data result is match according to the calculation of the water level in the tidal palm.

d) New equipment

1) Currents
   (a) Current Meter Valeport 106.
   (b) Current Meter ADCP Nortek.
   (c) Current Meter ADCP Sontek.
   (d) Current Meter ADCP Teledy.

(e) Ocean Surveyor Vessel-Mount ADCP (Lounge Range 3D Current Profiling).

2) Tides
   (a) Thalimedes.
   (b) Tide Master Valeport Pressure.

3) Waves
   (a) SBE 26.
   (b) SBE 26 Plus.
   (c) RBR Duo.

4) CTD.
   (a) Valeport Midas.
   (b) AML Minos-X.
   (c) Alec ASTD 1087.
   (d) AML Plus-X.
   (e) AML Midas

5) Sediments
   (a) Bottle Nansen.
   (b) Grab Sampler.
   (c) Coring.

e) Problems encountered

1) Tides and currents permanent observation station in Indonesia waters is still very limited due to vast of Indonesia water territory. Pushidrosal carry out tides and currents observation parallel with hydrography and oceanography activities.

2) Lack of collaboration in data oceanography exchange between government institutions or agencies.

9. Other activities

a) Participation in IHO Working Groups. Pushidrosal actives in several IHO Working Groups, such as:

1) Data Quality Working Group (DQWG) IHO.
2) Marine Spatial Data Infrastructure Working Group (MSDIWG) IHO.
3) Nautical Cartography Working Group (NCWG) IHO.
4) S-100 Working Group IHO.
5) Hydrographic Services and Standard Committee (HSSC) IHO.
6) Nautical Information Provision Working Group (NIPWG) IHO.
7) Tides, Water Level and Current Working Group (TWCWG) IHO.
8) ENC Standards Maintenance Working Group (ENCWG).
9) Advisory Board On the Law of the Sea (ABLOS).

b) Meteorological Data Collection

1) AWS Data Telemetry. Meteorological data in real-time at distant places is accessible on Pushidrosal at the moment. This is because we installed AWS in a representative place to obtain meteorological data. The same way as other AWS, installed in the Marina Ancol and used in the field during the survey, which is telemetry, data transmission with Telkomsel services, using Halo Prime Card.

2) Climatology Data from Meteorology and Climatology Agency (BMKG) Climatological data was obtained when the Survey Team requested climatological data at BMKG Meteorological Station nearest the survey area. It will be used to compare field result data during the survey with climatology conditions in the same month as the survey held.

c) Geospatial Studies

To develop Marine Spatial Data Infrastructure, called Indonesia Hydrographic Data Centre (IHDC), Pushidrosal conducted training Geospatial Hydrography and Oceanography System Information. Those system information created how to publish marine system information to support government marine development program, such as: to provide system information for navigate from port to port safely.

d) Disaster Mitigation

Pushidrosal has the disaster or emergency response and mitigation such as search and rescue operations, collission, grounding, oil spill response plan, and other emergency situations.

e) Environmental protection

Pushidrosal active in supporting Indonesia government for marine environmental protection program, such as surveying marine conservation area with others government agencies and drawing into nautical charts, cultivate mangrove plants in coastal area, updating hydrographic and oceanographic data along Indonesia coastline.

f) Astronomical observations

- N/A

g) Magnetic/Gravity surveys

Indonesia conducted magnetic survey in the Indonesia waters to support engineering project for national development such as, submarine pipe and cable laying, harbour construction, port development and searching ship wreck also naval mines buried from World War II.

h) MSDI Progress

Pushidrosal continue to developing Indonesian Hydrographic Data Centre (IHDC) as implementation of Marine Spatial Data Infrastruture (MSDI). It is the component of the National SDI that encompasses marine, chart catalogue, coastal geographic and business information in its widest sense. IHDC provides marine data include information on bathymetry, underwater features, geology, marine infrastructure (e.g. offshore

installations, pipelines, cables); administrative and legal boundaries, areas of conservation and marine habitats and oceanography.

i) International

Pushidrosal actives in International affairs with others International hydrography offices or agencies to sharing data and information concerning development of hydrography and oceanography technology and survey method, sharing data and information for updating nautical charts and others publications.

j) Others:

Instead of providing Maritime Safety Information, Pushidrosal also support Indonesian Government Policy to develop maritime sectors, including essential data and information of Map Policy project, sharing information with other Government bodies like Department of Internal Affairs, Ministry of Foreign Affairs, Ministry of Marine and Fisheries, etc.

10. Conclusions

a) Areas of significant achievement

Pushidrosal's priority of hydrographic survey program to conduct hydrography and oceanography survey in the Archipelagic Sea Lanes (ASL), archipelagic water, coastal area, Ports, Port Approach, the river waterways and channel.

b) Areas of particular concern

Updating hydrography and oceanography data in the Indonesian ASL and conduct investigation survey for navigation hazard to make sure safety of navigation all around Indonesia Waters.

Pushidrosal proposed for providing ocean going survey vessel with basic platform that can be configured to a variety of roles that include hydro-oceanographic survey in the deep sea area, submarine support, diving operations, ROV and UAV deployment, search & rescue. With the development of modern instruments, as well as space and communication technology, significant changes have taken place in surveying and charting science and techniques, surveyors using multiple tools to observe and monitor our oceans.

Chief Hydrographer,

NO	JABATAN	PARAF	TANGGAL
1.	Wadanpushidrosal		
2.	Aspamkersamtas		
3.	Kasetum		

Vice Admiral Budi Purwanto

Input to the IHO Publication P-5 (*Yearbook*)

Country: _Indonesia_____
Organization: _Indonesian Navy Hydro-Oceanographic Center (PUSHIDROSAL)

Contact information/ Informations de contact / Información de contacto	
-National Hydrographer or equivalent	Chief Hydrographer VAdm Budi Purwanto Tel: + 62 21 64 71 48 09 Fax: + 62 21 64 71 48 19 E-mail: infohid@pushidrosal.id Agency address: Jalan Pantai Kuta V/l, Ancol Timur, JAKARTA, 14430, Indonesia
-Head of the Hydrographic Office (if different from the person indicated above)	- N/A
-Other point(s) of contact	- N/A
-Web site	http://www.pushidrosal.id/ and https://ihdc.pushidrosal.id/
Country information / Informations sur le pays/ Información sobre el país	
-Declared National Tonnage	Tonnage: 45.194.835 Date: 2023
-National day	17th August
-Date of establishment and Relevant National legislation	31st March 1951
-Date first joined IHO	18th October 1951
-Date ratification Convention	28th November 1968
-Remarks on membership	Member of IHO, EAHC, NIOHC and SWPHC (Associate Member)
Agency information/ Information sur l'agence/ Información sobre la agencia	
-Top level parent organisation	Indonesian Navy, Indonesian Armed Forces, Ministry of Defence

-Principal functions of the organisation or the department	Conducting hydrography and oceanography survey, produce nautical charts and nautical publications, marine research and marine environmental protection to serve public and millitary requirements.			
-Annual operating budget	US $ 4.000.000			
-Total number of staff employed	1.238 personnel			
-Number of INT charts published	- N/A			
-Total number of paper charts published	601			
-Number of ENC cells published	631			
-Number of Other charts	400			
-Type of publications produced	Nautical Charts Tide Tables Tidal Stream Tables Notices to Mariners (weekly) Sailing Directions (Region I – IV) Indonesian List of Lights Indonesian Port Information Nautical Almanac Astronomical Navigation Book List of Submarine Pipelines and Cables Indonesia Waters List of Wrecks Indonesia Waters Former Mine Areas Indonesia Waters List of Coastal Indonesian Radio Station IALA A Maritime Buoyage System Current Charts Indonesian Waters Eastern Region Current Charts Indonesian Waters Western Region Tracks and Distance Between Ports in Indonesia The Rise and Set of The Sun and The Moon Time Table in Indonesia Archipelago			
-Detail of surveying vessels/ aircraft	-Name	-Displacement (ton)	-Date Launched	-Number of crew
	KRI Dewa Kembar-932	2800	1965	72
	KRI Rigel-933	515	2015	47
	KRI Spica-934	515	2015	47

	KRI Pollux - 935	220	2021	37
	KAL Vega	50	2007	20
	KAL Antares	50	2015	6
	KAL Alnitak	6	2024	4
	KALAlnilam	6	2024	4
-Other information of interest	- N/A			

NO	JABATAN	PARAF	TANGGAL
1.	Wadanpushidrosal		
2.	Aspamkersamtas		
3.	Kasetum		

Chief Hydrographer,

Vice Admiral Budi Purwanto

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

C-55 Summary for:				**Comments on Charts:**
Country:	Indonesia			
Country Iso Code:	IDN			Pushidrosal does not produce RNC
Country SubCode:	ID			
INT Region:	K			
Country/Depend:				
Last updated:	December 2024			
Provided by:	Indonesia Navy, Hydrography and Oceanography Center (Pushdirosal)			
Chart coverage	**Passage (%)**	**Coastal (%)**	**Port (%)**	
INT	100	100	70	**Comments on Surveys:** Pushidrosal will continue to increase survey coverage percentage.
RNC	-	-	-	
ENC	100	100	60	
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	15.87	48.22	35.91	
> 200m	20.55	3.61	75.84	

MSI	**Y/N**	**Comments on MSI:**
Local warning	Yes	Directorat of General Sea and Transportation (DGST)-Indonesian Minister of Transportation reports Indonesian local warning by publishing Notice to Mariners (NTM) or Mapel (Maklumat Pelayaran) and Pushidrosal reports Indonesian local warning by publishing Notice to Mariners (NTM) or BPI (Berita Pelaut Indonesia) weekly which is some of its contents are navigational safety information i.e. shallow information and danger, Aid to Navigation, wreck, traffic lanes, conservation area etc.
Coastal warning	Yes	DGST reports Indonesian coastal warning method by publishing Navtex broadcast and dissemination of

		information through Vessel Traffic Services and Coastal Radio Station. Pushidrosal reports Indonesian coastal warning method by publishing Kawat Navigasi (KN) / Navigational Distress Information and Hydrography Indonesia (HI) daily which is some of its contents are sunken vessel, man overboard, lost contact vessel, firing exercise etc.
NAVAREA warning	Yes	DGST reports the HI or Navigational Warning information to NAVAREA XI (Japan as coordinator country) by e-mail to be broadcasted and assistance by DGST MCC (Marine Coordination Center). Pushidrosal reports the HI to NAVAREA XI (Japan as coordinator country) by e-mail of Pushidrosal Nautical Service.
Information on ports and harbours implementation	Yes	Pushidrosal publishes ports and harbours information in form of Nautical Book publications : Ports and Harbours Information Book, Sailling Direction Book, Information of Indonesian Shipping Lane book, Indonesia List of Lights, List of radio Signal, Nautical Almanac etc.
GMDSS	**Y/N**	**Comments on GMDSS:**
Master Plan	Yes	DGST - Indonesian Minister of Transportation has master plan for GMDSS implementation that has been implemented and already informed to the IMO regarding the updated of the master plan also updated the IMO GISIS.
Area A1	Yes	DGST has 105 VHF DSC Station to support GMDSS Communication and operation for A1 Area.
Area A2	Yes	DGST has 19 MF DSC Station to support GMDSS Communication and operation for A2 Area.
Area A3	Yes	DGST has 5 HF Station to cover GMDSS operation for A3 namely Belawan, Jakarta, Makasar, Ambon, Jayapura.
NAVTEX	Yes	DGST has 4 NAVTEX stations operating to provide maritime safety information in its waters: Jakarta, Makassar, Ambon, and Jayapura NAVTEX. These NAVTEX stations are part of the GMDSS, providing essential information such as meteorological warning, navigational warning, SAR information and other information related to maritime safety.

Safety NET	No	DGST has not yet fully implemented an effective safety net. While the country has made progress by establishing NAVTEX stations and adopting international convention like SOLAS and GMDSS, coverage remains incomplete. Key challenges include limited infrastructure, differences information delivery systems, and gaps in coordination among responsible agencies.

NO	JABATAN	PARAF	TANGGAL
1.	Wadanpushidrosal		
2.	Aspamkersamtas		
3.	Kasetum		

Chief Hydrographer,

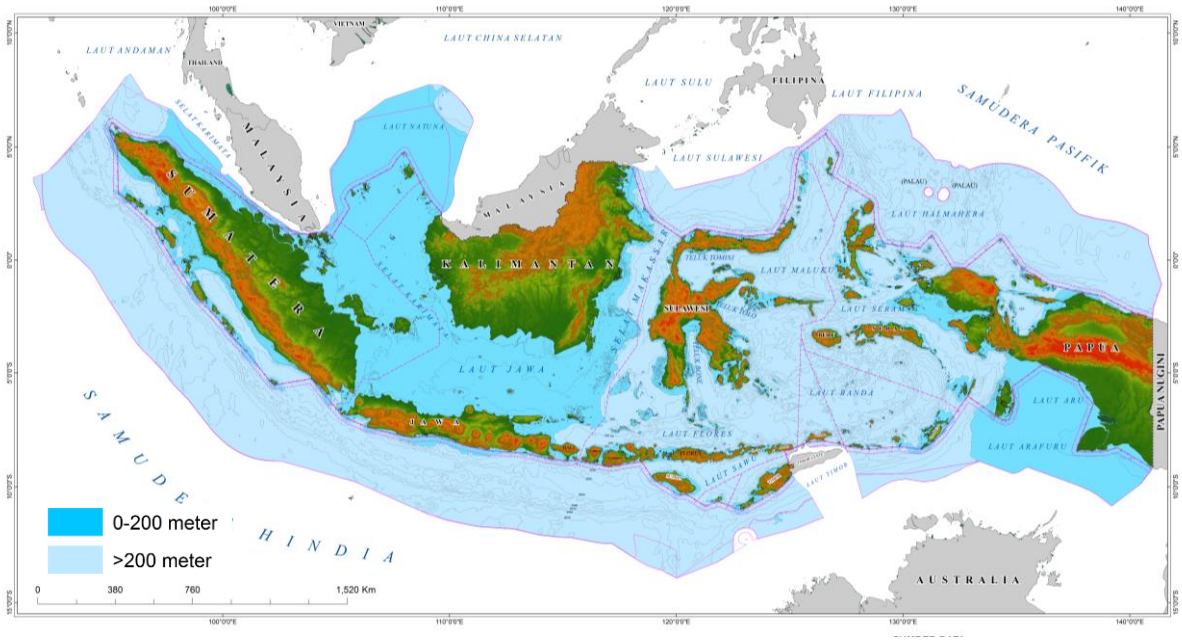
Vice Admiral Budi Purwanto

National MSI Self-Assessment

Country: Indonesia
Organization: Indonesian Navy Hydro-Oceanography Center (PUSHIDROSAL)

1. Maritime area

Indonesia is an archipelagic state extending about 5,120 kilometres (3,181 mi) from east to west and 1,760 kilometres (1,094 mi) from north to south. Indonesia has total land area of 1,904,569 square kilometres (735,358 sq mi), Including 93,000 square kilometres (35,908 sq mi) of inland seas (straits, bays, and other bodies of water). The additional surrounding sea areas bring Indonesia's generally recognised territory (land and sea) to about 6,4 million km^2. The government, however, also claims an exclusive economic zone, which brings the total area to about 8,3 million km^2. Indonesia waters have various depth with percentage as shown below:



Depth Ranges	Percentage
D < 10 m	4.44
10 m < D <20 m	4.51
20 m < D < 50 m	6.75
50 m < D < 200 m	26.70
D > 200 m	57.60

Indonesia shared maritime boundaries with 10 neighbouring countries such as: India, Thailand, Malaysia, Singapore, Vietnam, Philippines, Palau, Papua New Guinea, Timor Leste and Australia.

2. Operational Points of Contact for the National Coordinator

INSTITUTION	TELEPHONE	FACSIMILE	EMAIL
Pushidrosal	+62 21 64 71 48 09	+62 21 64 71 48 19	infohid@pushidrosal.id

3. Other Activities

Pushidrosal actively engage in several IHO Working Groups, such as:

a) MSDIWG-15 (Bali, March 2024)
b) HSWG – 7 (Frascati, September 2024)
c) TWCWG-9 (Monte Carlo, November 2024)
d) S-100WG – 9 (Genoa, November 2024)

4. National Maritime Website

www.pushidrosal.id.

Yes, we put the date and time of the last update in our website.

5. Recommendations: -

6. Summary

Pushidrosal still continue to update bathymetry data in Indonesia waters and collaborate with other national agency for any additional data. Our priority program is to provide updated nautical charts and publications in orders to ensure safety of navigation in Indonesian waters.

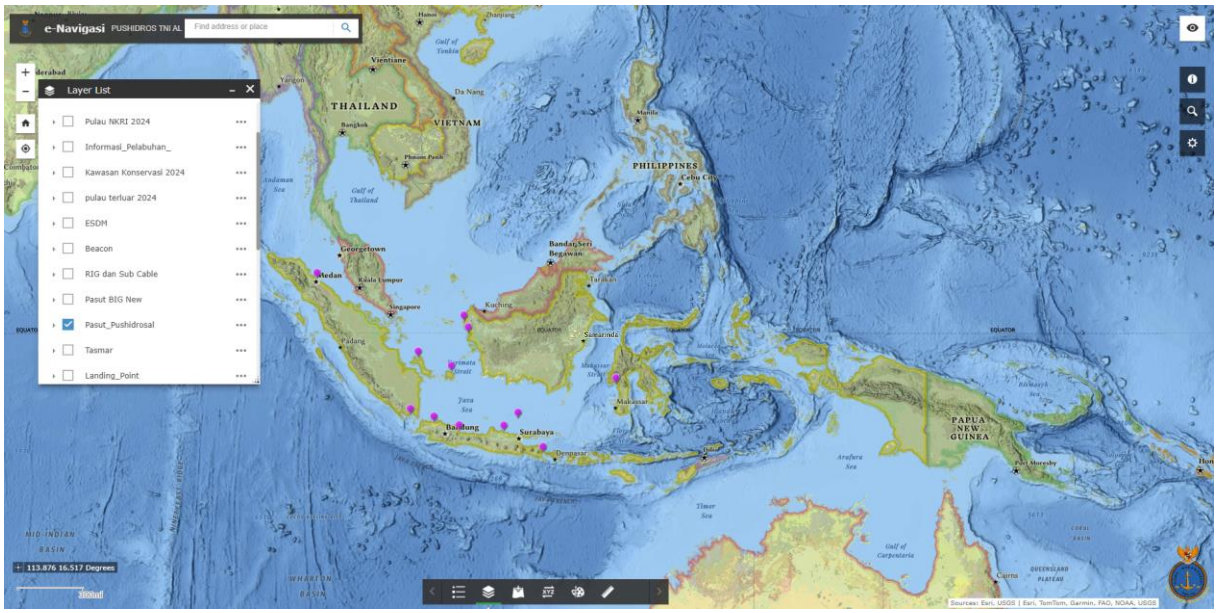
NO	JABATAN	PARAF	TANGGAL
1.	Wadanpushidrosal		
2.	Aspamkersamtas		
3.	Kasetum		

Chief Hydrographer,

Vice Admiral Budi Purwanto

Tide Station

Country: Indonesia
Organization: Indonesian Navy Hydro-Oceanography Center (PUSHIDROSAL)



Map of Pushidrosal Tide Station, Source: https://ihdc.pushidrosal.id/e-navigasi/

NO	STATION	TIDAL TYPE	DEVELOPER
1	Cirebon	MIXED TIDE PREVAILING SEMI DIURNAL	MAWS
2	Pontianak	MIXED TIDE PREVAILING SEMI DIURNAL	MAWS
3	Tanjunguban	MIXED TIDE PREVAILING DIURNAL	MAWS
4	Rembang	MIXED TIDE PREVAILING SEMI DIURNAL	MAWS
5	Tanjung Gudang Belinyu	DIURNAL	MAWS
6	Selindung Permai Belitung	DIURNAL	MAWS
7	Banyuwangi	DIURNAL	MAWS
8	Tanjung Silopo	MIXED TIDE PREVAILING SEMI DIURNAL	MAWS
9	Belawan	MIXED TIDE PREVAILING SEMI DIURNAL	MAWS
10	Singkawang	MIXED TIDE PREVAILING SEMI DIURNAL	MAWS
11	Lampung	MIXED TIDE PREVAILING SEMI DIURNAL	PUSHIDROSAL
12	Bawean	DIURNAL	PUSHIDROSAL

NO	JABATAN	PARAF	TANGGAL
1.	Wadanpushidrosal		
2.	Aspamkersamtas		
3.	Kasetum		

Chief Hydrographer,

Vice Admiral Budi Purwanto