17TH MEETING OF THE SOUTH WEST PACIFIC HYDROGRAPHIC COMMISSION (SWPHC17)
Wollongong, 12-14 February 2020

NATIONAL REPORTS FROM INDONESIA TO THE SWPHC17

References:
A. IHO Resolution 2/1997 as amended (see doc. C3-04.2A, Appendix to Annex A)
B. IHO Circular Letter 20/2019, The IHO Online Form System for responses to Circular Letters and input to IHO Publications (P-5 and C-55): link
Online system for P-5 (Yearbook): link
Online system for C-55 (Status of Surveys and Charting Worldwide): link

Executive summary

1. Hydrographic Office / Service:
   a) Name of the institution: Pushidrosal
   b) Description: Pushidrosal (Pusat Hidrografi dan Oseanografi TNI AL) is national hydrographic office of Indonesia under Indonesian Navy Head Quarter. According to the Presidential Decree of the Republic of Indonesia Number 66/2019 about the organization of Indonesian Armed Forces, the objectives of Pushidrosal is to carry out hydrographic and oceanographic surveys, marine research, nautical chart and production, nautical publication dissemination and marine environment analysis to support safety of navigation, also to provide data and information for national defense and public civilian needs.
   c) Submitted by: infohid@pushidrosal.id

2. Surveys:
   a) Coverage of new surveys: During 2019, Pushidrosal had finished 47 hydrographic and oceanographic survey programs within Indonesia's waters. Those surveys had specific purposes such as updating Archipelagic Sea Lanes (ASL) I and II area, updating strategic port channel in North Sulawesi and East Kalimantan, creating and updating ENC cell data in South Sumatera and Java Sea, oceanographic survey in Makassar Straits also disaster relief mitigation in West Sumatera and West Papua.
   b) New equipment: in 2019, Pushidrosal was completed by several new equipment such as CM Valeport 106, DGPS Marinestar 9205, Magnetometer Geometrics G-882, Odom Hydrotrac II, Dongle Hypack Single Beam, Total Station Laser, GPS Trimble RGS, Multi Beam T-50, RBR Duo, AWS Davis, AIS, CTD AML Aminos X, Tide Master, EM Valeport 106 and AWS Lufft.
   c) New ships: Nill
   d) Crowdsourced and satellite-derived bathymetry - national policy: The National Institute of Aeronautics and Space (LAPAN) conducted Satellite Derived Bathimetry (SDB) joint research with Pushidrosal at Kri Island and Mansuar Island on Raja Ampat waters. Those survey using Semi Parametric and Independent Depth Variable by Kanno et al (2011) method also Random Forest by Manessa et al (2016) method. The imageries using Spot-7 and Landsat-8, then the result was validated by Single Beam Echosounder.
   e) Challenges and achievements: Indonesia has vast waters teritory and appriximatelly only 5% has been updated by Pushidrosal during 2010–2019. The unsurvey area will be finished gradually based on priority scale. On the other hand, Pushidrosal get satisfied

achievement in South East Region, for example tasked as Coordinator Mallaca Singapore Straits ENC updater, and completed inland survey in Danau Toba Lake.

3. New charts & updates:
Pushidrosal has 578 number of paper charts and 525 ENC cells. In 2019, Indonesia can updated 78 numbers of paper chart, 473 celss of ENC and made 11 new cells of ENC. We have been striving to migrate Hydrographic Production Database to improve chart and ENC's quality. We also produced and maintain INT chart, particularly to cover the Archipelagic Sea Lanes (ASL). Generally, the main problem for Indonesia is readiness of recent survey data, especially in some remote islands where tourism and local economy is growing.

4. New publications & updates:

No	Publication	Remarks
1	Indonesian Nautical Charts	Numbers, coverage's and editions can be seen in Indonesian nautical chart catalogue. Edition 2019/2020
2	Indonesian Books and Nautical Charts Catalogue	Edition 2020
3	Chart Number 1	Edition 2020
4	Electronic Navigational Chart (ENC)	Numbers, coverage's and editions can be seen in Pushidrosal Website
5	Nautical Almanac	Edition 2020
6	Tidal Stream Tables	Edition 2020
7	Tide Tables	Edition 2020
8	Sailing Direction Region II	Edition 2020
9	Sailing Direction Region III	Edition 2020
10	List of Coastal Indonesian Radio Station	Edition 2020

5. MSI
Infrastructure of GMDSS is under Directorate General of Sea Transportation (Dirjen Hubla). In carrying out responsibilities to inform mariners concerning safety navigation, Pushidrosal compile information from the mariners and all Indonesia port authority regarding sea accident in Indonesia waters, then send that information to Jakarta Radio. Directly, Jakarta Radio will inform it to all mariners which are sailing in Indonesia waters. Additionally, every marine accident will be reported through Hidro-Indo (HI) or Indonesian Notices to Mariners (IDNM). HI will be issued as soon as possible while marine accident happened and IDNM published weekly. Pushidrosal also send navigational warning to Navarea XI Coordinator in Japan via e-mail. Furthermore, Pushidrosal concern about this matter and conducted Multi Regional MSI Course and MSI Data Base Workshop to support capacity building programs. Those programs was attended by 21 participants from 12 countries (EAHC, NAVAREA XI, Palau and Marshal Islands). The instructors came from NGA, JHOD and Pushidrosal.

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
   a) Training received, needed, offered
      1) Training Received
         (a) Long Hydrographic Course, IHO Cat A India.
         (b) International Hydrographic Management and Engineering Programme, IHO Cat B Mississippi USA.
         (c) H2 Hydrographic Surveying Course, Australia.
         (d) ITB University Hydrographic Course, IHO Cat A Indonesia.
         (e) Hydrography for Charting and Disaster Management, IHO Cat B, Japan.
         (f) Marine Geospatial Information Course, IHO Cat B, Republic of Korea.
         (g) Training for Ocean Observation and Hydrographic Surveying, Republic of Korea.
         (h) Brevet Superieure Hydrographique, France
         (i) Maritime Safety Information Course and Maritime Safety Information Data Base Workshop, Indonesia.
         (j) Technical Workshop on Disaster Response Planning and Data Discovery, France.
         (k) IHO Nippon Foundation Seminar, Singapore.
         (l) MSS-ENC Administrator Course, Singapore.
         (m) Maritime Delimitation Boundaries Workshop, France.
         (n) AML Course, Italia.
         (o) Risk Assessment for Hydrographic Surveys and Charting Management for the Safety Navigation, Brunei Darussalam.

      2) Training Needed
         (a) Training for Trainers Hydrographic Course.
         (b) Hydrographic Course IHO Cat A.
         (c) Hydrographic Production Database (HPD) Course.

      3) Training Offered
         Nautical Charting Hydrographers and Cartographers to Support Port management and Coastal Engineering, IHO Cat B.

   b) Status of national, bilateral, multilateral or regional development projects with a hydrographic component. (In progress, planned, under evaluation or study)
      1) Development of Mallaca Straits ENC collaboration with Singapore Maritime Port Authority (MPA), National Hydrographic Service of Malaysia, Japan Hydrographic Association (JHA) and mallaca Strait Council (MSC).
      2) Development of Marine Geospatial Database collaboration with Indonesia Geospatial Agencies (BIG).
      3) Development of marine conservation area collaboration with Ministry of Marine and Fisheries.
      4) Development of disaster relief mitigation chart with Search and Rescue Agency (SAR) and the National Disaster Management Agency (BNPB).
      5) Research in Satellite Derived Bathimetry collaboration with Indonesia National Institute of Aeronautics and Space (LAPAN).
      6) Research and development of meteorology collaboration with Meteorological, Climatological, and Geophysical Agency (BMKG).
      7) Research in hydrography and oseanography collaboration with several university.

   c) Description of proposals and requests to the IHO/CBSC: Nil

8. Oceanographic activities
   a) Tide gauge network: In 2019, Pushidrosal has installed 3 telemetry tide gauge equipment in Tolop, Nipah and Sorong. Totally, Pushidrosal has 10 real time telemetry tide gauge as a part of large national scheme with a total of 187 collaboration stations among ministries and institutions.
   b) Challenges: Tide and current permanent observation stations cannot cover preciselly due to vast area of Indonesia waters.

9. Spatial data infrastructures
   a) Status of MSDI: Pushidrosal has established and developed Indonesia Marine Geospatial Information Center (IMAGIC). As a portal, this application displays information and actual data related to the Indonesian Ocean Hydrographic and Oceanographic published by Pushidrosal.
   b) Relationship with the NSDI: It is the component of the NSDI that encompasses marine, chart catalogue, coastal geographic and bussiness information in its widest sense for the sake of shipping safety in Indonesia.
   c) Involvement in regional or global MSDI efforts: attended MSDI-WG (March, 5-8 2019) at Busan, Republic of Korea and has planned to attend regularly on the next MSDI-WG.
   d) National implementation of the Shared Data Principles – including any national data policy and impact on marine data: Sea shipping is a key piece of transportation infrastructure that Indonesia very much need to improve. Then Pushidrosal is tasked conducting surveys, research, marine mapping, publications, applications of the marine environment san safety sailing navigation and preparing data also information to support the maritime highway concept. And IMAGIC present to support shared data principles, including any national data policy.
   e) MSDI national portal: hdc.pushidrosal.id
   f) Best practices: IMAGIC provide Indonesia Digital Elevation Model (DEM), Interactive Sailing Chart, E-Navigation and Collaboration Map.
   g) Challenges: Compile colaboration data and need resources improvement.

10. Innovation
    a) Use of new technologies: Nil.
       On the other hand, Pushidrosal has developing S-32 IHO Indonesia Hydrographic Dictionary. Now, IHO have not only English hydrographic terminology dictionary, but also completed in French, Spanish, Chinese and Indonesia versions.
    b) Risk assessment: Nil
    c) Policy matters: Nil

11. Other activities
    a) Participation in IHO meetings
       1) 16th South West Pacific Hidrographic Commission (SWPHC).
       2) Technical Workshop on Disaster Response Planning and Data Discovery.
       3) 10th Marine Spatial Data Infrastructures Working Group (MSDI-WG).
       4) 19th North Indian Ocean Hydrographic Commission (NIOHC).
       5) 4th Tides, Water Level and Current Working Group (TWC-WG).
       6) 11th Hydrographic Services and Standarts Committee (HSSC) Meeting.
       7) 17th Capacity Building Sub Committee (CBSC) Meeting.
       8) 11th Inter Regional Coordination Committee (IRCC) Meeting.
       9) 10th Training Research Development Committee Board of Director (TRDC-BOD) Meeting.
       10) 2nd East Asia Marine Spatial Data Infrastructure Working Group (EAMSDI-WG).

11) 8th East Asia Hydrographic Commission Charting and Hydrographic Committee (EAHC-CHC) Meeting.
12) 10th Advisory Board on the Law of Sea (ABLOS) Conference.
13) 3rd IHO Council.
14) IHO Nippon Foundation Seminar.

b) Meteorological data collection: The equipments are installed at distant places such as at Jakarta, Sebatik Island and Singkawang. Globally, meteorological data collection is handled by Meteorological, Climatological, and Geophysical Agency (BMKG) and Pushidrosal can access it easily.
c) Geospatial studies: Nil
d) Preparation for responses to disasters: During 2019, Pushidrosal conducted 3 disaster relief hydrographic and oceanographic surveys. There were hydrographic survey in Mount Anak Krakatau at Sunda Strait for updating bathimetry data and supporting national agency for disaster relief and management. Then conducted disaster relief mitigation surveys at Painan, West Sumatera and Wasior, West Papua.
e) Environmental protection: Development of marine conservation area chart collaboration with several national agencies in the specific places such as Komodo Island Marine Park chart.
f) Engagement with the Maritime Administration: Pushidrosal is actively involved in the drafting of engagement with seven Indonesia ministries and agencies. Those engagement related to safety and maritime environmental protection also tourism marine conservation management. Hoppefully, this engagement will be approved in the early 2020 for the advancement of Indonesian maritime bussiness.
g) Aids to Navigation matters: Annually Published 52 numbers of Notice to Mariners and 54 navigational warnings. In the end of 2019, Pushidrosal conducted capacity building program related to navigation matters. Theme of those capacity building program was Maritime Safety Information (MSI) Course and MSI data Base Workshop. The event was attended by representatif of EAHC members and NAVAREA XI. Then Indonesia actively assist Brunai Darussalam while conducted Risk Assessment for Hydrographic Surveys and Charting Management for the Safety Navigation Course. Additionally, Pushidrosal has been actively involving in the International Maritime Organization (IMO) as council member. So, Indonesia has strong bargaining position to influence at IMO related to navigation policy.
h) Magnetic and gravity surveys: Pushidrosal conducted 5 magnetic and gravity survey to image anomalies in the magnetic field caused by mine within the sub-surface. Those survey were held at Cilacap, Likupang North Sulawesi, Lamong Bay and Ujung Pangkah.
i) International engagements: This institutions has several international engagement to distribute navigational charts and hydrographic-oceanographic publications, for instance engagement with United Kingdom Hydrographic Office (UKHO), Norwegian Hydrographic Service (NHS), C-MAP and NAVIONICS. In the recent month, Pushidrosal also drafting engagement with CARNIVAL to build 3D Database Simulator for cruise ships.

12. Conclusions

Pushidrosal continues to conduct hydrography and oceanography survey to update Indonesia waters data based on priority scale such as ASL, archipelagic water, coastal area and port channel.

With a government focus on support the maritime highway concept to improve the conectivity deemed to the key for Indonesia future.

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

Country: Indonesia
Organization: PUSHIDROSAL

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:- Name:- Postal address:- Tel:- Fax:- Email:-
-Head of the Hydrographic Office (if different from the person indicated above) -Directeur du Service Hydrographique (si différent de la personne indiquée ci-dessus) -Director del Servicio Hidrográfico (si diferente de la persona indicada anteriormente)	Post: Rear Admiral Name: Harjo Susmoro Postal address: Jalan Pantai Kuta V/1, Ancol Timur, Jakarta Utara 14430, Indonesia Tel: +62 21 64714809 Fax: +62 21 64714819 Email: infohid@pushidrosal.id or infohid@dishidros.go.id
-Other point(s) of contact -Autre(s) point(s) de contact -Otros punto(s) de contacto	
-Web site -site web -sitio web	www.pushidrosal.id
Country information / Informations sur le pays/ Información sobre el país	
-Declared National Tonnage -Tonnage national déclaré -Tonelaje Nacional Declarado	Tonnage: 12.944.000 Date: 2017
-National day -Fête nationale -Fiesta nacional	17th August
-Date of establishment and Relevant National Legislation -Date de mise en place et législation nationale pertinente -Fecha de constitución y legislación nacional pertinente	March 31, 1951

-Date first joined IHO -Date d'adhésion à l'OHI -Fecha de adhesión a la OHI	October 18, 1951
-Date ratification Convention -Date de ratification de la Convention -Fecha de ratificación de la Convención	November 28, 1968
-Remarks on membership -Remarques sur l'adhésion -Comentarios sobre la adhesión	IHO, EAHC, NIOHC, SWPHC, IMO, IOC, ICA, FIG, UNGEGN
Agency information/ Information sur l'agence/ Información sobre la agencia	
-Top level parent organisation -Organisme mère -Organización asocieda de nivel superior	Indonesia Navy Headquarters, Indonesia Armed Forces Headquarters
-Principal functions of the organisation or the department -Attribution principales de l'organisme ou du département -Principales funciones de la Organización o departamento	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 -Budget annuel -presupuesto anual	US $ 4,304,286.36
-Total number of staff employed -Effectifs totaux -Número total de personal empleado	1.250 persons
-Number of INT charts published -Nombres de cartes INT publiées -Número de cartas INT publicadas	68
-Total number of paper charts published-Nombre total de cartes papier publiées-Número total de cartas de papel publicadas	578

-Number of ENC cells published -Nombres de cellules ENC publiées -Número de células ENC publicadas	525			
-Number of Other charts -Nombre d'Autres cartes -Número de Otras cartas	58			
-Type of publications produced -Type d'ouvrages produits -Tipo de publicaciones producidas	Nautical Charts, Tide and Tidal Stream Tables, Notice to Mariners (Weekly), Sailing Directions, List of Lights, Port Information, Nautical Almanac			
-Detail of surveying vessels/ aircraft -Détail des bâtiments hydrographiques / aéronefs -Detalle de los buques hidrográficos / aeronaves	-Name -Nom -Nombre	-Displacement -Déplacement -Desplazamiento	-Date Launched -Date de mise en service -Fecha de botado	-Number of crew -Nombre de l'équipage -Tripulación
	Dewa Kembar	2800	1965	109
	Rigel	515	2015	48
	Spica	515	2015	48
	Pulau Romang	516	1971	32
	Pulau Rempang	516	1971	32
	Aries	50	1960	11
	Vega	50	2007	20
-Other information of interest -Autres informations utiles -Otra información de interés	Nil			

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			Procentage counted from Indonesia water teritory is 6.400.000 km2
Country Iso Code:	IDN			
Country SubCode:	ID			
INT Region:	K			
Country/Depend:				
Last updated:	15 February 2018			
Provided by:	Pushidrosal			
Chart coverage	**Passage (%)**	**Coastal (%)**	**Port (%)**	
INT	100	19.3		**Comments on Surveys:** Limitation of Platform Capability - 50% bathymetry data source from historic sounding data - 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 proposed requirement on new ocean going survey ship with modern technology.
RNC	-	36.5	2	
ENC	100	49.9	1.5	
Status of Paper Charts				
Paper charts with depths in meters (%)				
Paper charts referenced to a satellite datum (%)				
Status of surveys	**Adequate (%)**	**Resurvey (%)**	**No survey (%)**	
0-200m	100	50	Nil	
> 200m	50	100		

MSI	**Y/N**	**Comments on MSI:**
Local warning	Y	
Coastal warning	Y	
Nav warning	Y	
Port warning	Y	
GMDSS	**Y/N**	**Comments on GMDSS:**
Master Plan	N	
Area A1	N	
Area A2	N	
Area A3	N	
NAVTEX	N	
SafetyNet	N	