

EAHC – IHO Strategic Plan 2021-2026: GAP Analysis

(Ref: IHO Strategic Plan 2021-2026)



Members and Observers

Coastal State: JAPAN

GOAL	Target	Current State	Gap	Actions
<p>Goal 1: Evolving the hydrographic support for safety and efficiency of maritime navigation, undergoing profound transformation</p>	<ul style="list-style-type: none"> Deliver standards for hydrographic data and specifications of hydrographic products; support their regular production; and coordinate regional and global services for their provision Develop standards, specifications and guidelines in the areas of data assurance, including cyber security and data quality assessment Use capacity building and training to develop and increase the ability of Member States to support safety and efficiency of maritime navigation <p>1.1.1 Percentage of Member States having operationalized production and distribution of hydrographic data products and services based on IHO Universal Hydrographic Data Model (S-100), under an implementation framework of coordination and agreed timelines.</p> <p>1.1.2 Number of hydrographic data products and services based on Universal Hydrographic Data Model that cater for the new</p>	<ul style="list-style-type: none"> JHOD is in the works for publication and distribution of S-101 ENC's in 2025. Distribution of other S-100 based products and services is currently under consideration. JHOD staff have actively participated in most of the HSSC subordinate bodies where Product Specifications based on S-100 are discussed. JHOD is actively participated in WENDWG. 100% of navigationally significant areas in our ENC's is assessed through the use of appropriate quality indicators. JHOD neither hold nor participate in a capacity building and training to develop the ability to support S-100. 	<ul style="list-style-type: none"> No operationalized production and distribution of hydrographic data products and services based on S-100. Not enough international and regional cooperation with Member States on S-100 related capacity buildings. Lack of manpower to hold a capacity building training regarding S-100. 	<ul style="list-style-type: none"> Continue to work on publication and distribution of S-101 ENC's to be operationalized in 2025. Continue to actively participate in HSSC subordinate bodies and WENDWG. If allow the opportunity, actively participate in a S-100 related capacity building training to enhance international and regional cooperation with other hydrographic offices.

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GOAL	Target	Current State	Gap	Actions
	<p>requirements: autonomous shipping, reduction of emission.</p> <p>1.2.1 Percentage of hydrographic data products and services based on S-100 model that are covered by IHO standards, specifications and guidelines on cyber security.</p> <p>1.2.2 Percentage of navigationally significant areas (e.g. charted traffic separation schemes, anchorages, channels) for which the adequacy of the hydrographic knowledge is assessed through the use of appropriate quality indicators.</p> <p>1.3.1 Ability and capability of Member States to meet the requirements and delivery phases of the S100 implementation plan.</p>			

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GOAL	Target	Current State	Gap	Actions
<p>Goal 2: Increasing the use of hydrographic data for the benefit of society</p>	<ul style="list-style-type: none"> • Build a portal to support and promote regional and international cooperation in marine spatial data infrastructures (MSDI) • Promote new tools and methods to accelerate and increase coverage, consistency, quality of surveys in poorly surveyed areas • Apply UN shared guiding principles for geospatial information management in order to ensure interoperability and extended use of hydrographic data in combination with other marine-related data <p>2.1.1 Number of hits downloading data/information from the portal.</p> <p>2.2.1 Percentage of adequately surveyed area per coastal state.</p> <p>2.2.2 Number of new applications of the new version of Standards for Hydrographic Surveys (S-44)</p> <p>2.3.1 Number of HOs reporting success applying the principles in their national contexts.</p>	<ul style="list-style-type: none"> • JHOD operates Japan's MSDI "MSIL (MDA Situational Indication Linkages)" in cooperation with other organizations /authorities concerned and provides not only hydrographic data but also other marine/maritime data. • "MSIL" has been registered in the IHO MSDI portal site. • JHOD has appropriately conducted hydrographic surveys in conformance to S-44. • JHOD is in the work for updating of the domestic law of Japan concerning standards of hydrographic activities (Law for Hydrographic Activities) to apply the S-44 edit. 6.0.0. • JHOD provides the public with a broad range of marine geospatial information via Japanese MSDI ""MSIL"". 	<ul style="list-style-type: none"> • The domestic law of Japan for hydrographic activities has not reflected S-44 edit. 6.0.0. yet. 	<ul style="list-style-type: none"> • JHOD will update the domestic law of Japan for hydrographic activities to apply the S-44 edit. 6.0.0 in the near future.

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GOAL	Target	Current State	Gap	Actions
<p>Goal 3: Participating actively in international initiatives related to the knowledge and the sustainable use of the Ocean</p>	<ul style="list-style-type: none"> • Collaborate with other bodies who deliver capacity-building and training to improve effectiveness of capacity-building activities and programmes • Improve knowledge of the world's seafloors • Implement a comprehensive IHO digital communication strategy in order to enhance its visibility and accessibility to its work <p>3.1.1 Percentage of Coastal States that are capable to provide marine safety information (MSI) according to the joint IMO/IHO/WMO manual on MSI.</p> <p>3.2.1 Amount of data received per year by the IHO Data Centre for Digital Bathymetry (DCDB).</p> <p>3.2.2 Number of contributors to DCDB who are not hydrographic offices.</p> <p>3.2.3 Percentage of total sea area that is Seabed 2030 compliant for ingestion into the GEBCO dataset and services.</p> <p>3.3.1 Number of visits, likes, re-postings, etc. associated to the IHO social media sites.</p> <p>3.3.2 Volume downloaded from the IHO website and Geographical Information System (GIS).</p>	<ul style="list-style-type: none"> • JHOD adequately provide MSI according to the joint IMO/IHO/WMO manual on MSI as both NAVAREA XI Coordinator and National Coordinator. • JHOD provided guidance on MSI with coastal states within the NAVAREA XI area, and held and cooperated in EAHC capacity building trainings on MSI. • JHOD has already provided GEBCO with gridded bathymetry data around Japan and the Antarctic research station of Japan. The data is incorporated in the GEBCO gridded data. • JAMSTEC (Japan Agency for Marine-Earth Science and Technology) provides bathymetry data to IHO DCDB. • JAMSTEC participates in CSBWG and supports CSB activities. 		<ul style="list-style-type: none"> • Continue to actively engage in guidance and capacity building trainings on MSI to enhance the capacity of the coastal states within the NAVAREA XI area to provide MSI.

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Members and Observers

Coastal State: Malaysia

GOAL	Target	Current State	Gap	Actions
<p>Goal 1: Evolving the hydrographic support for safety and efficiency of maritime navigation, undergoing profound transformation</p>	<ul style="list-style-type: none"> • Deliver standards for hydrographic data and specifications of hydrographic products; support their regular production; and coordinate regional and global services for their provision • Develop standards, specifications and guidelines in the areas of data assurance, including cyber security and data quality assessment • Use capacity building and training to develop and increase the ability of Member States to support safety and efficiency of maritime navigation 	<ul style="list-style-type: none"> • IHO Universal Hydrographic Data Model (S-100) not yet implemented by industries and government agencies. • Engagement with IHO RHC, Bilateral and Multilateral meetings (e.g., IC-ENC, MSS-ENC) • Data governance practice is in place to ensure coordinated approach towards Data Management including utilization of International Standards • Objectives quality that implements and monitored by ISO is in place for strategic monitoring of safety, quality, and outputs. • Hydrographic Production Database training are scheduled to keep up with the current version and personnel competency • The National Hydrographic Centre (NHC) adheres to the International Hydrographic Organization 	<ul style="list-style-type: none"> • No operationalized production and distribution of S-100 data products and services. • Limited capability and resources to meet the requirement and delivery of the S-100 especially licensing of software. • No centralize coordination between government institution and maritime industries regarding S-100 and development of safety and efficiency of maritime navigation. • Lack of understanding of maritime navigation transformation. • Lack of senior cartographer due to high turnover rate which contrast with the naval human resources policy. • The Malaysia Hydrographic Survey Standards (MHSS) are currently unavailable as an official guideline for conducting 	<ul style="list-style-type: none"> • S-100 Taskforce are formed within NHC to monitor and strategize the approach to plan, migrate and produce data with product accordingly. • Engage with Marine Department of Malaysia to jointly produce appropriate navigation publication. • Participate and sought advice from IHO, EAHC and RENC. • Continue to use IHO S-44 as a guideline for hydrographic surveys. • Continuous improvement of the Hydrographic Code of Practice for Port and Harbour Malaysia in accordance with the most recent IHO S-44. • Develop and publish MHSS as a hydrographic survey standard to meet NHC's requirement.

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		<p>Standards for Hydrographic Survey in the practise, conduct and management of Hydrographic surveys (IHO S-44)</p> <ul style="list-style-type: none"> The Malaysian Port and Harbour Authority used the NHC published Hydrographic Code of Practice for Port and Harbours Malaysia as a guideline when conducting hydrographic surveys. 	<p>hydrographic surveys.</p>	
<p>Goal 2: Increasing the use of hydrographic data for the benefit of society</p>	<ul style="list-style-type: none"> Build a portal to support and promote regional and international cooperation in marine spatial data infrastructures (MSDI) Promote new tools and methods to accelerate and increase coverage, consistency, quality of surveys in poorly surveyed areas Apply UN shared guiding principles for geospatial information management in order to ensure interoperability and extended use of hydrographic data in combination with other marine-related data 	<ul style="list-style-type: none"> Limited number of Hydrographic Survey Platform. NHC has been appointed to lead in gathering manage marine data in Malaysia. A marine technical committee (JTMM) has been established to enhance data sharing activities among government and private sector in the marine society. Through data exchange from this committee, NHC has develop a marine data portal named MyMarine GeoHub is used as a data sharing medium to support the development of MSDI in Malaysia. 	<ul style="list-style-type: none"> 50 years needs to cover Malaysian waters with MBES Road Map in proper way to develop MSDI. Need implantation plan. Leaking awareness of data sharing among agencies. 	<ul style="list-style-type: none"> Develop the Marine Geospatial Transformation Plan, to ensure that all Malaysian waters are covered by the MBES survey method by 2050. Implementation of hydrographic survey via leasing ship to accelerate and expend hydrographic survey coverage. <ul style="list-style-type: none"> Engage and educate with agencies whose seem leak of awareness data sharing. Provide platform (Hardware/Software) such as portal to them sharing the data.

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<p>Goal 3: Participating actively in international initiatives related to the knowledge and the sustainable use of the Ocean</p>	<ul style="list-style-type: none"> Collaborate with other bodies who deliver capacity-building and training to improve effectiveness of capacity-building activities and programmes Improve knowledge of the world's seafloors Implement a comprehensive IHO digital communication strategy to enhance its visibility and accessibility to its work 	<ul style="list-style-type: none"> Engagement with Universiti Teknologi Malaysia for development of Marine Geospatial and Cartography Programme (Category B) 	<ul style="list-style-type: none"> Lack of expertise regarding development of S-100. No personnel involved in any working group at IHO level 	<ul style="list-style-type: none"> Engage with any other government/foreign government training courses (G2G Courses). Applying and actively involved in IHO/EAHC Courses. Engagement with IHO, RHC, and RENC in any meeting, working group and capacity building programme. Collaborate and support with related government agency and university for developing oceanographic capabilities.

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Members and Observers

Coastal State: PHILIPPINES

GOAL	Target	Current State	Gap	Actions
<p>Goal 1: Evolving the hydrographic support for safety and efficiency of maritime navigation, undergoing profound transformation</p>	<ul style="list-style-type: none"> • Deliver standards for hydrographic data and specifications of hydrographic products; support their regular production; and coordinate regional and global services for their provision • Develop standards, specifications and guidelines in the areas of data assurance, including cyber security and data quality assessment • Use capacity building and training to develop and increase the ability of Member States to support safety and efficiency of maritime navigation 	<ul style="list-style-type: none"> • S-100 adoption slowly implemented • engagement and participation in IHO and EAHC subordinate bodies • participation in IHO and EAHC capacity building programs 	<ul style="list-style-type: none"> • no S-100 data products and services offered yet • limited resources for the production of S-100 products and services 	<ul style="list-style-type: none"> • active participation in IHO and EAHC for S-100 related capacity building • adopted a strategic roadmap for the national hydrographic office • capacity building activities through IHO capacity building strategy or other donor organisations • engage with relevant National Government Agencies to increase awareness and support for e-Navigation

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<p>Goal 2: Increasing the use of hydrographic data for the benefit of society</p>	<ul style="list-style-type: none"> • Build a portal to support and promote regional and international cooperation in marine spatial data infrastructures (MSDI) • Promote new tools and methods to accelerate and increase coverage, consistency, quality of surveys in poorly surveyed areas • Apply UN shared guiding principles for geospatial information management in order to ensure interoperability and extended use of hydrographic data in combination with other marine-related data 	<ul style="list-style-type: none"> • The national MSDI is incorporated into the Philippine Geoportal but with limited data and capabilities 	<ul style="list-style-type: none"> • multiple areas inadequately surveyed • data is not readily available in the internet due to limited capability of the website 	<ul style="list-style-type: none"> • adopted a strategic roadmap for the national hydrographic office • adopted a national hydrographic surveying standard

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GOAL	Target	Current State	Gap	Actions
<p>Goal 3: Participating actively in international initiatives related to the knowledge and the sustainable use of the Ocean</p>	<ul style="list-style-type: none"> Collaborate with other bodies who deliver capacity-building and training to improve effectiveness of capacity-building activities and programmes Improve knowledge of the world's seafloors Implement a comprehensive IHO digital communication strategy in order to enhance its visibility and accessibility to its work 	<ul style="list-style-type: none"> no data contributed to IHO Data Centre for Digital Bathymetry (DCDB) and Seabed 2030 crowd-sourced bathymetry not supported within Philippine Waters 	<ul style="list-style-type: none"> large area are still unsurveyed with current standards many National Government Agencies oppose crowd-sourced bathymetry due to security concerns citizens do not appreciate fully hydrography 	<ul style="list-style-type: none"> engage with Seabed 2030 to exchange hydrographic data and obtain support such as loggers for CSB engage with other National Government Agencies to gain support for international ocean initiatives contribute articles to local and international publications develop social media strategy to promote awareness on hydrography

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Members and Observers

Coastal State: ROK

GOAL	Target	Current State	Gap	Actions
<p>Goal 1: Evolving the hydrographic support for safety and efficiency of maritime navigation, undergoing profound transformation</p>	<ul style="list-style-type: none"> Deliver standards for hydrographic data and specifications of hydrographic products; support their regular production; and coordinate regional and global services for their provision Develop standards, specifications and guidelines in the areas of data 	<ul style="list-style-type: none"> participate in the development of S-1XX PSs (HSSC, S-100WG, HSWG, TSM, S-101 PT, etc.) conduct hydrographic surveys in line with S-44 and update nautical charts produce and service S-101, 102, 104, 111, 122, 123, 124, and 127 products developed the infrastructure for supporting the development of S-100 PSs (testbed, S-100 GI Registry, KHOA S-100 Viewer, etc.) and have them available to the int'l hydrographic community participate in the running of the S-100 Open Online Platform actively run a national body for cooperation in the development of S-100 PSs according to the IHO S-100 Roadmap manage hydrographic survey & nautical chart data systematically and run 	<ul style="list-style-type: none"> lack of interest and understanding by mariners regarding the implementation of S-1XX no gaps identified 	<ul style="list-style-type: none"> enhance the understanding of mariners on the implementation of S-1XX by activating the national body for S-100

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	<p>assurance, including cyber security and data quality assessment</p> <ul style="list-style-type: none"> Use capacity building and training to develop and increase the ability of Member States to support safety and efficiency of maritime navigation 	<p>quarterly security checks according to internal security regulations</p> <ul style="list-style-type: none"> assess the quality of hydrographic surveys and nautical charts according to internal quality management regulations run training programmes for hydrographers, and surveyors and cartographers are obliged to attend them run Cat. B and Training for Trainers programmes for IHO MSs, and support students to attend a MS Hydrographic Science programme at the University of Southern Mississippi 	<p>- no gaps identified</p>	
<p>Goal 2: Increasing the use of hydrographic data for the benefit of society</p>	<ul style="list-style-type: none"> Build a portal to support and promote regional and international cooperation in marine spatial data infrastructures (MSDI) Promote new tools and methods to accelerate and increase coverage, consistency, quality of surveys in poorly surveyed areas 	<ul style="list-style-type: none"> run a national MSDI portal (https://khoa.go.kr/oceanmap) cooperate in matters related to MSDI through the EAHC-MSDIWG set up a five-year survey plan and follow it systematically conduct high-resolution surveys of shallow waters using unmanned systems 	<p>- no activities for building an EAHC MSDI portal</p> <p>- no gaps identified</p>	<p>- continue to work with the EAHC and IHO MSs</p>

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	<ul style="list-style-type: none">Apply <u>UN shared guiding principles for geospatial information management</u> in order to ensure interoperability and extended use of hydrographic data in combination with other marine-related data	- participate in the activities of UN-GGIM, MGI-WG and IHO MSDIWG	- no gaps identified	

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<p>Goal 3: Participating actively in international initiatives related to the knowledge and the sustainable use of the Ocean</p>	<ul style="list-style-type: none"> Collaborate with other bodies who deliver capacity-building and training to improve effectiveness of capacity-building activities and programmes Improve knowledge of the world's seafloors Implement a comprehensive IHO digital communication strategy in order to enhance its visibility and accessibility to its work 	<ul style="list-style-type: none"> - ROK is the CB Coordinator of the EAHC and is developing the CBMS - participate in the activities of the TRDC-BOD to activate capacity building of the EAHC - establish the IHO e-Learning Center in cooperation with the IHO e-Learning Project Team, and participate in the development of an e-learning guideline - conduct overseas surveys at the Antarctic and through Official Development Assistance projects - register newly discovered undersea feature names on the Pacific and the Antarctic with the GEBCO Gazetteer - run an Ocean Forecast Studio to provide marine information to various users 	<ul style="list-style-type: none"> - no accredited courses to date at the e-Learning Center - no gaps identified - no gaps identified 	<ul style="list-style-type: none"> - develop accredited courses when appropriate

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Members and Observers

Coastal State: SINGAPORE

GOAL	Target	Current State	Gap	Actions
<p>Goal 1: Evolving the hydrographic support for safety and efficiency of maritime navigation, undergoing profound transformation</p>	<ul style="list-style-type: none"> • Deliver standards for hydrographic data and specifications of hydrographic products; support their regular production; and coordinate regional and global services for their provision • Develop standards, specifications and guidelines in the areas of data assurance, including cyber security and data quality assessment • Use capacity building and training to develop and increase the ability of Member States to support safety and efficiency of maritimnavigation 	<p>e.g.</p> <ul style="list-style-type: none"> • refer to Strategic Performance Indicators (SPI) • IHO Universal Hydrographic Data Model (S-100) not implemented • engagement in IHO and EAHC subordinate bodies • refer to current state of EAHC IHO Capacity Building Strategy <ul style="list-style-type: none"> • Ongoing preparation to adopt IHO Universal Hydrographic Data Model (S-100). • Compliant with national data governance framework. • In-house capacity building programme (Structured Training Programme). 	<p>e.g.</p> <ul style="list-style-type: none"> • no operationalised production and distribution of S-100 data products and services • limited capability and resources to meet the requirements and delivery of the S-100 implementation plan • lack of support from Government institutions for maritime navigation • lack of understanding of maritime navigation transformation <ul style="list-style-type: none"> • Currently no operational production tool to support S-100 products • Lack of human resources 	<p>e.g.</p> <ul style="list-style-type: none"> • participation of Coastal State at the IHO and EAHC WGs and Committee levels • assistance sought from IHO, Primary Charting Authority, EAHC, IALA, IMO • ensure adequate institutional arrangements in place for Hydrographic Governance • capacity building activities through IHO capacity building strategy or other donor organisations • engage with relevant Government departments and the Maritime Safety Authority to increase aware and support for e-Navigation • prepare business case for e-Navigation strategy <ul style="list-style-type: none"> • To engage industry players to develop S-100 tool • To continue test-bedding projects on new commercial

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				<p>software to support further production of both S-57 and S-100 products.</p> <ul style="list-style-type: none">• Adopt autonomous technologies (e.g. Unmanned Surface Vehicle) for hydrographic survey works.

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<p>Goal 2: Increasing the use of hydrographic data for the benefit of society</p>	<ul style="list-style-type: none"> Build a portal to support and promote regional and international cooperation in marine spatial data infrastructures (MSDI) Promote new tools and methods to accelerate and increase coverage, consistency, quality of surveys in poorly surveyed areas Apply UN shared guiding principles for geospatial information management in order to ensure interoperability and extended use of hydrographic data in combination with other marine-related data 	<p>e.g.</p> <ul style="list-style-type: none"> refer to Strategic Performance Indicators (SPI) FAIR data principles (Findable Accessible Interoperable and Reusable) accepted and implemented UN-GGIM Integrated Geospatial Information Framework (IGIF) action plans developed refer to IHO Publication C-55 Status of Hydrographic Surveying and Nautical Charting Worldwide use of IHO S-44 <ul style="list-style-type: none"> Singapore has built a national marine spatial data infrastructure called GeoSpace-Sea (GSS). Singapore has collaborated with Institutes of Higher Learning and other National Agencies to pull data from other relevant data repositories for the application of standards 	<p>e.g.</p> <ul style="list-style-type: none"> multiple areas inadequately surveyed data is poorly managed, unavailable and not shared i.e. open, free and unrestricted <ul style="list-style-type: none"> Existing version of GSS has limited end-user groups, applications and datasets. Lack of long-term data to support maritime innovation ecosystem. 	<p>e.g.</p> <ul style="list-style-type: none"> engage with Primary Charting Authority to prepare hydrographic survey programme prepare survey specifications using IHO S-44 Implement FAIR data principles Implement UN-GGIM IGIF Provide data to existing portals, such as IHO DCDB assistance sought from IHO, Primary Charting Authority, EAHC, IALA, IMO <ul style="list-style-type: none"> To continue developing GSS by enhancing its repository and creating access to more datasets from other relevant platforms. To incorporate more end-user applications into GSS. Upon the successful development of GSS, Singapore is committed to engage relevant

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		and enable data discovery and data interoperability.		stakeholders and contribute towards the regional and global agendas such as the UN Decade of Ocean Science for Sustainable Development and UN 2030 Agenda and its Sustainable Development Goals
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<p>Goal 3: Participating actively in international initiatives related to the knowledge and the sustainable use of the Ocean</p>	<ul style="list-style-type: none"> Collaborate with other bodies who deliver capacity-building and training to improve effectiveness of capacity-building activities and programmes Improve knowledge of the world's seafloors Implement a comprehensive IHO digital communication strategy in order to enhance its visibility and accessibility to its work 	<p>e.g.</p> <ul style="list-style-type: none"> refer to Strategic Performance Indicators (SPI) no MSI capability engage with EAHC CB activities lack of knowledge and awareness of UN Decade of Ocean Science or Seabed 2030 Project data contributed to IHO Data Centre for Digital Bathymetry (DCDB) and Seabed 2030 CSB initiatives supported no digital communications strategy for hydrography <ul style="list-style-type: none"> Singapore has been and remains active in relevant international hydrographic fora. Singapore has set up the Joint IHO – Singapore Innovation and Technology Laboratory to promote, facilitate and enhance international collaborations. 	<p>e.g.</p> <ul style="list-style-type: none"> need to achieve IHO CB Strategy Phase 1 increase Government knowledge and support for UN Decade of Ocean Science seafloor data is poorly managed, unavailable and not shared i.e. open, free and unrestricted no support for hydrography communications <ul style="list-style-type: none"> To create awareness in the projects focused on innovation technologies driven in Singapore. 	<p>e.g.</p> <ul style="list-style-type: none"> engage with regional CB activities i.e. EAHC, IALA, IMO and bilateral development programmes engage with Government institutions to gain support for international ocean initiatives prepare policy paper to release seafloor data to the IHO DCDB and Seabed 2030 engage with Seabed 2030 Project to install bathymetric data loggers for CSB initiatives seek support to develop a communications strategy contribute papers to the IHR and other seabed publications develop social media strategy <ul style="list-style-type: none"> To continue outreach of collaborative efforts and promote undertaking of

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				innovative or investigative projects.
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Members and Observers

Coastal State: BRUNEI DARUSSALAM

GOAL	Target	Current State	Gap	Actions
<p>Goal 1: Evolving the hydrographic support for safety and efficiency of maritime navigation, undergoing profound transformation</p>	<ul style="list-style-type: none"> • Deliver standards for hydrographic data and specifications of hydrographic products; support their regular production; and coordinate regional and global services for their provision • Develop standards, specifications and guidelines in the areas of data assurance, including cyber security and data quality assessment • Use capacity building and training to develop and increase the ability of Member States to support safety and efficiency of maritime navigation 	<ul style="list-style-type: none"> • IHO Universal Hydrographic Data Model (S-100) not implemented • Currently following the S-57 standards and S-44 standards • S-57 CARIS Software been purchased in 2020 but difficult to get the trainer to provide training either online or face-to-face. 	<ul style="list-style-type: none"> • Lack of resources in <ol style="list-style-type: none"> 1. Survey vessels 2. Trained hydrographic personnel 3. Cartographer • Lack of staffs' exposure on the IHO's standards. • Lack of experience in the use of S57/S100 standardisation software for charting • Unavailability of Local support on the use of CARIS Software • Due to the current pandemic situation, CARIS software training is not available for both online and offline. 	<ul style="list-style-type: none"> • Capacity building of personnel through basic hydrographic short courses • On-job training for personnel on CAT A and CAT B courses in hydrographic survey and nautical cartography. • Seek assistance from IHO on the way forward including software selection etc. • **Seek for CARIS Software trainer from neighbouring countries as part of on-job training • **On-job training of personnel to other hydrographic offices to gain experiences. <p>**Subject to budget allocation.</p>

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<p>Goal 2: Increasing the use of hydrographic data for the benefit of society</p>	<ul style="list-style-type: none"> • Build a portal to support and promote regional and international cooperation in marine spatial data infrastructures (MSDI) • Promote new tools and methods to accelerate and increase coverage, consistency, quality of surveys in poorly surveyed areas • Apply UN shared guiding principles for geospatial information management in order to ensure interoperability and extended use of hydrographic data in combination with other marine-related data 	<ul style="list-style-type: none"> • No portal has been made (no MSDI) • Lack of data to be provided for the establishment of its own portal. 	<ul style="list-style-type: none"> • Not all areas are covered, mostly data obtained are from a decade ago (data collected previously might not be similar with the standards used at the moment) • Due to the limitation of charts published from the Brunei Survey Department, agencies are using BA charts as their guidance to safety. (No ACT/policy has been made for mariners to use locally published charts – no benefit to the local society) • Poorly managed data. • Unavailability of hydrographers consultant to look into and study the requirements for building up MSDI in Brunei 	<ul style="list-style-type: none"> • **To develop MSDI's infrastructure for Brunei Darussalam • **Full coastal coverage of bathymetry and charted data • **Sharing of bathymetric data. • **Seek for consultant or senior hydrographers who can look into the Brunei requirements to build up MSDI and data management. <p>**Subject to budget allocation.</p>

EAHC – IHO Strategic Plan 2021-2026: GAP Analysis

(Ref: IHO Strategic Plan 2021-2026)



GOAL	Target	Current State	Gap	Actions
<p>Goal 3: Participating actively in international initiatives related to the knowledge and the sustainable use of the Ocean</p>	<ul style="list-style-type: none"> Collaborate with other bodies who deliver capacity-building and training to improve effectiveness of capacity-building activities and programmes Improve knowledge of the world's seafloors Implement a comprehensive IHO digital communication strategy in order to enhance its visibility and accessibility to its work 	<p>e.g.</p> <ul style="list-style-type: none"> refer to Strategic Performance Indicators (SPI) no MSI capability engage with EAHC CB activities lack of knowledge and awareness of UN Decade of Ocean Science or Seabed 2030 Project data contributed to IHO Data Centre for Digital Bathymetry (DCDB) and Seabed 2030 CSB initiatives supported no digital communications strategy for hydrography 	<p>e.g.</p> <ul style="list-style-type: none"> need to achieve IHO CB Strategy Phase 1 increase Government knowledge and support for UN Decade of Ocean Science seafloor data is poorly managed, unavailable and not shared i.e. open, free and unrestricted no support for hydrography communications 	<p>e.g.</p> <ul style="list-style-type: none"> engage with regional CB activities i.e. EAHC, IALA, IMO and bilateral development programmes engage with Government institutions to gain support for international ocean initiatives prepare policy paper to release seafloor data to the IHO DCDB and Seabed 2030 engage with Seabed 2030 Project to install bathymetric data loggers for CSB initiatives seek support to develop a communications strategy contribute papers to the IHR and other seabed publications develop social media strategy

EAHC – IHO Strategic Plan 2021-2026: GAP Analysis

(Ref: IHO Strategic Plan 2021-2026)



Members and Observers

Coastal State: HONG KONG

GOAL	Target	Current State	Gap	Actions
<p>Goal 1: Evolving the hydrographic support for safety and efficiency of maritime navigation, undergoing profound transformation</p>	<ul style="list-style-type: none"> • Deliver standards for hydrographic data and specifications of hydrographic products; support their regular production; and coordinate regional and global services for their provision • Develop standards, specifications and guidelines in the areas of data assurance, including cyber security and data quality assessment • Use capacity building and training to develop and increase the ability of Member States to support safety and efficiency of maritime navigation 	<p>HKENC available in IHO S-57 data format.</p> <p>IHO Universal Hydrographic Data Model (S-100) not implemented</p> <p>Capacity Building on hold due to COVID pandemic situation</p>		<p>Continue to work with partners and the hydrographic community to support implementation of S100.</p> <p>Participation as the China Delegation at the IHO and EAHC WGs and Committee levels</p> <p>Ensure adequate institutional arrangements in place for Hydrographic Governance</p> <p>Capacity building activities through IHO capacity building strategy</p>

EAHC – IHO Strategic Plan 2021-2026: GAP Analysis

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GOAL	Target	Current State	Gap	Actions
<p>Goal 2: Increasing the use of hydrographic data for the benefit of society</p>	<ul style="list-style-type: none"> • Build a portal to support and promote regional and international cooperation in marine spatial data infrastructures (MSDI) • Promote new tools and methods to accelerate and increase coverage, consistency, quality of surveys in poorly surveyed areas • Apply UN shared guiding principles for geospatial information management in order to ensure interoperability and extended use of hydrographic data in combination with other marine-related data 	<p>IHO S-44 (Edition 5) is currently in use</p>		<p>Implementation of new edition of S-44 (Edition 6.0.0)</p>

EAHC – IHO Strategic Plan 2021-2026: GAP Analysis

(Ref: IHO Strategic Plan 2021-2026)



GOAL	Target	Current State	Gap	Actions
<p>Goal 3: Participating actively in international initiatives related to the knowledge and the sustainable use of the Ocean</p>	<ul style="list-style-type: none"> • Collaborate with other bodies who deliver capacity-building and training to improve effectiveness of capacity-building activities and programmes • Improve knowledge of the world's seafloors • Implement a comprehensive IHO digital communication strategy in order to enhance its visibility and accessibility to its work 			<p>EA-RECC would continue to approach EAHC MS to enhance the regional cooperation and coordination on S-57 to S-100 transition.</p> <p>EA-RECC is implementing relevant international standard and exercising adequate hydrographic knowledge in performing a RENC's work.</p>