INTERNATIONAL HYDROGRAPHIC ORGANIZATION

NATIONAL REPORT FROM UNITED STATES TO THE NIOHC17

Executive summary

1. Hydrographic Office / Service:
a) Name of the institution: National Geospatial-Intelligence Agency (NGA), Source Operations and Management Directorate, Foundation Group, Marine Safety Office (MSO)
b) Description:
NGA provides nautical charts and related hydrographic information outside of the U.S. Economic Exclusion Zone and is the mapping and charting authority for the US Department of Defense and commercial mariners in areas the US is considered to be the charting authority.

a) Name of the institution: National Oceanic and Atmospheric Administration's (NOAA) Office of Coast Survey (OCS)
b) Description:
NOAA provides nautical charts and related hydrographic information within the nation's Economic Exclusion Zone (EEZ).

a) Name of the institution: U.S. Navy, Naval Meteorology and Oceanography Command (CNMOC)
b) Description: The Commander serves as the Hydrographer of the U.S. Navy. COMNAVMETOCCOM's Naval Oceanographic Office (NAVOCEANO) and Fleet Survey Team (FST) conduct oceanographic, bathymetric, and hydrographic surveys worldwide to satisfy US Navy requirements.

Detailed information to update IHO Publication P-5 (*Yearbook*) is submitted in Annex A.2.

2. Surveys:

The US Navy surveys international waters outside the United States Exclusive Economic Zone and in the territorial waters of other nations through cooperative international agreements.

The *NOAA Hydrographic Survey Priorities* available at http://www.nauticalcharts.noaa.gov/hsd/NHSP.htm defines the methodology NOAA uses to identify survey priorities across the US EEZ.

a) Coverage of new surveys:

Survey Number Area Completed – ***To be filled out by US Navy***

Survey Number	**Area**	**Completed**

b) New technologies and /or equipment

NAVOCEANO has upgraded its Airborne Coastal Survey (ACS) capability with the Optech, Inc., Coastal Zone Mapping and Imaging LIDAR (CZMIL) system. The system is flown on a Basler BT-67, a refurbished DC-3. NAVOCEANO is currently using the new system to conduct airborne hydrographic surveys.

c) New ships

USNS Maury (T-AGS 66) was launched in 2013 and delivered in Feb 2016 bringing NAVOCEANO's survey fleet back up to six ships. Maury is currently undergoing equipment outfitting and testing. Maury is eight meters longer than previous ships of this class.

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:

Paper charts	246
Digital Nautical Chart (DNC)	3 volumes
Electronic Navigational Charts (ENC)	0
Raster Navigational Charts (RNC)	N/A

a) DNCs and ENCs
The U.S. (NGA) produces three (3) DNCs in NIOHC waters. These DNCs are maintained by NGA with new source information from the U.S. and prime foreign hydrographic authorities.

Further information about DNC can be found on NGA's Maritime Homepage at https://msi.nga.mil/NGAPortal/DNC.portal

b) DNC and ENC Distribution method
DNC is Limited Distribution and is not available for public sale or download. They are available via data sharing agreements with partner nations. Please contact the NGA Representative for additional details.

c) RNCs – N/A

d) INT charts
NGA does not share INT chart responsibility within the NIOHC region. However, NGA does build its chart schemes and DNC library limits from these INT schemes, if practical.

e) National paper charts
NGA produces 246 paper charts for the NIOHC region in their Region 6, 7 and 9 portfolio. Based on bi-lateral agreements NGA is withdrawing many of them from public sale. They are available via data sharing agreements with partner nations. Please contact the regional NGA Representative for additional details.

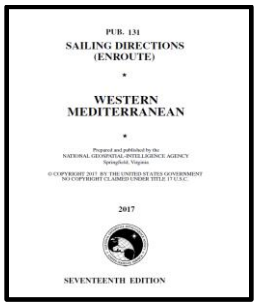
NGA Paper Charts published since the NIOHC17 Meeting	
Total	74
New Charts	5
New Editions	69

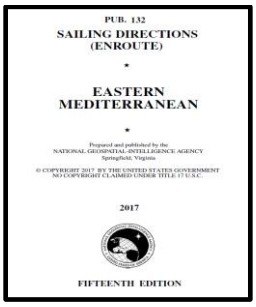
NGA Paper Charts scheduled for publication in 17/18 FY	
Total	30+
New Charts	3+
New Editions	30+

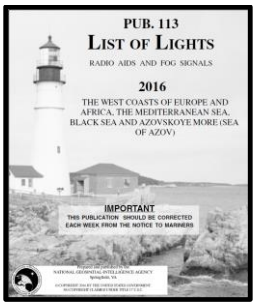
4. New publications & updates:

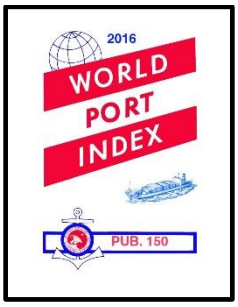
a) New Publications
NGA publications are available from the NGA Maritime Homepage at http://msi.nga.mil/NGAPortal/MSI.portal

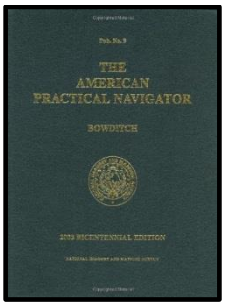
b) Updated NGA publications in RSAHC
Publication Title Published: Edition











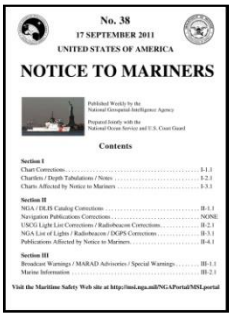
Publication	Title	Published	Edition
Pub 131	Western Mediterranean	Electronic copy only	2017
Pub 132	Eastern Mediterranean	Electronic copy only	2017
Pub 113	NGA List of Lights	2016	2016
Pub 150	World Port Index	Electronic copy only	2016
Pub 9	The American Practical Navigator Vol I	Electronic copy only	2017
Pub 9	The American Practical Navigator Vol II	Electronic copy only	2017

c) Means of delivery, e.g. paper, digital
All NGA Nautical publications are available for download on the NGA Maritime homepage. Digital updates can be downloaded from NGA at http://msi.nga.mil/NGAPortal/MSI.portal.

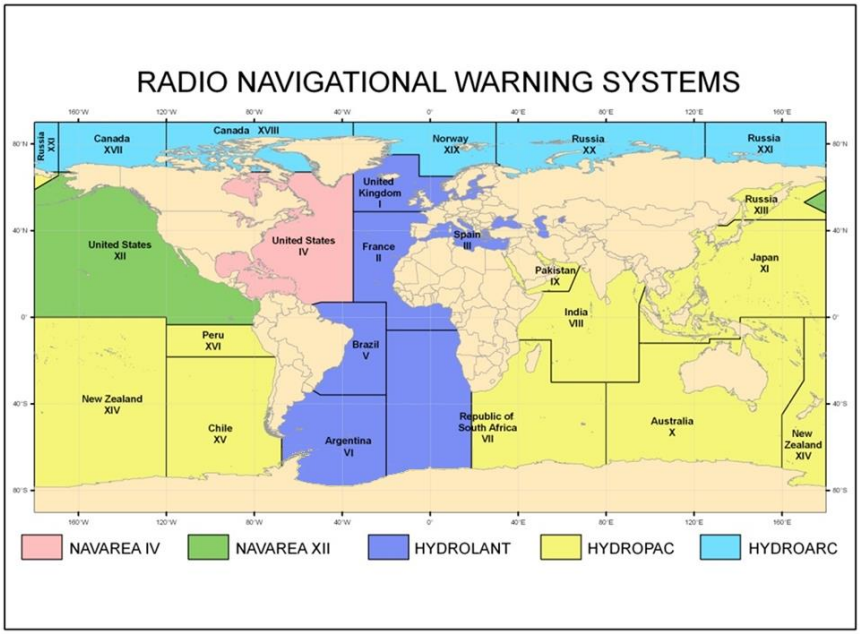
Detailed information to update IHO Publication P-5 (*Yearbook*) is submitted in Annex A.

5. MSI

a) Existing infrastructure for transmission
NGA produces Notices to Mariners for NGA charts in the NIOHC region. These are published weekly and available in digital format only from the Maritime Homepage http://msi.nga.mil/NGAPortal/MSI.portal.


No. 38
17 SEPTEMBER 2011
UNITED STATES OF AMERICA
NOTICE TO MARINERS
Contents

NGA produces navigational warnings for the NIOHC Region in the form of HYDROLANTS. These are broadcast and uploaded every business day to:
http://msi.nga.mil/NGAPortal/MSI.portal?_nfpb=true&_st=&_pageLabel=msi_portal_page_63



Announced Jun 29, 2017
“E-MAIL SUBSCRIPTION SERVICE FOR BROADCAST WARNINGS.

1. THE MARITIME SAFETY WATCH AT NGA HAS SET UP A VOLUNTARY SUBSCRIPTION SERVICE FOR ALL BROADCAST WARNINGS (NAVAREA IV / NAVAREA XII / HYDROLANT / HYDROPAC / HYDROARC) AND US MARITIME ADVISORY/ALERTS.

2. THE AVAILABILITY OF NAVIGATIONAL WARNINGS VIA THIS NGA SUBSCRIPTION SERVICE DOES NOT RELIEVE MASTERS / CAPTAINS OF THE REQUIREMENT TO RECEIVE NAVIGATIONAL WARNINGS THROUGH IMO APPROVED BROADCAST SERVICES IN ACCORDANCE WITH THE PROVISIONS OF THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA (SOLAS).

THIS INFORMATION IS PROVIDED AS A SUPPLEMENT TO THOSE APPROVED SERVICES.

3. THIS SERVICE IS AVAILABLE THROUGH THE MARITIME SAFETY WEB PAGE (MSI.NGA.MIL) AND SELECTING ‘SUBSCRIBE TO BW’.
FOLLOW THE PROMPTS TO SUBSCRIBE.”

As it is both an IHO and IMO obligation per SOLAS, NGA requests the assistance of all member states within the RSAHC Region to relay pertinent maritime safety information for promulgation to navsafety@nga.mil as well as the NAVAREA IX coordinator.

NGA also was the promulgation agency for Special Warnings (issued by the Department of State) and Maritime Administration (MARAD) Advisories. These were issued infrequently and contain information about potential hazards caused by the global political climate. This system has been replaced by the U.S. Maritime Advisory System as outlined in the following message (Note: Special Warnings and MARAD Advisories still in effect have not been redesignated):

U.S. MARITIME ADVISORY 2017-001
Threat Type(s): N/A
Geographic Area: Global

1. This message announces the launch of the new *U.S. Maritime Advisory System,* which represents the most significant update since 1939 to the U.S. government process for issuing maritime security alerts and advisories. The new system establishes a single federal process to expeditiously provide maritime threat information to maritime industry stakeholders including vessels at sea. In response to valuable feedback from stakeholders, the Maritime Advisory System was developed to streamline, consolidate, and replace maritime threat information previously disseminated in three separate government agency instruments: Special Warnings, MARAD Advisories, and global maritime security related Marine Safety Information Bulletins.

2. The *U.S. Maritime Advisory System* includes two types of notifications: A U.S. Maritime Alert and a U.S. Maritime Advisory. Maritime Alerts quickly provide basic threat information to the maritime industry. When amplifying information is available, a more detailed U.S. Maritime Advisory may be issued on a threat and could include recommendations and identify available resources. U.S. Maritime Alerts and U.S. Maritime Advisories will be broadcast by the National Geospatial-Intelligence Agency, emailed to maritime industry stakeholders, and posted to the Maritime Security Communications with Industry (MSCI) web portal, at www.marad.dot.gov/MSCI.

3. The *U.S. Maritime Advisory System* is a whole-of-government notification mechanism. The Departments of State, Defense, Justice, Transportation, and Homeland Security, and the intelligence community, supported the development of this new system in coordination with representatives from the U.S. maritime industry through the Alerts, Warnings and Notifications Working Group.

4. Questions regarding the *U.S. Maritime Advisory System* may be emailed to MARADSecurity@dot.gov. Additional contact information is available on the MSCI web portal.

5. This message will automatically expire on July 6, 2017.

NGA is the NAVAREA IV and XII Coordinator within the IMO/IHO World-Wide Navigational Warning Service (WWNWS) and also acts as Chairman for the WWNWS-Sub-Committee (SC).

b) New infrastructure in accordance with GMDSS Master Plan
N/A

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
The United States is an active participant in the IHO Capacity Building Sub-Committee (CBSC), and the US/NGA directly supports the IHO Maritime Safety Information (MSI) training course.

Training opportunities are available at various institutions in the United States. Two Category A certified hydrographic programs are available through:

- The University of Southern Mississippi (USM)
  - www.marine.usm.edu/hs.php
- The University of New Hampshire (UNH)
  - www.marine.unh.edu/research/ccom.html

COMNAVMETOCCOM and NAVOCEANO have partnered with USM for their program and NOAA has a similar arrangement with UNH for their Category A program. CNMOC also offers a six-month category B International Hydrographic Management and Engineering Program via its Naval Meteorology and Oceanography Professional Development Center in Gulfport, Mississippi.

Capt. Andrew Armstrong, NOAA (ret.), the NOAA co-director of the Joint Hydrographic Center at UNH, is a member of the FIG/IHO/ICA International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers. As a member of the board, Capt. Armstrong is available to advise institutions on establishing hydrographic training curricula and preparing submissions to the International Board for Category A or Category B recognition. (andy.armstrong@noaa.gov).

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

c) Description of requests to be considered by the IHO/CBSC
None

8. Oceanographic activities

a) General

The United States participates on the IOC-IHO Guiding Committee for GEBCO and hosts the IHO Data Centre for Digital Bathymetry at NOAA's National Centers for Environmental Information

b) GEBCO/IBC's activities

Seabed 2030, an initiative in development with the IHO, IOC, and the Nippon Foundation, would focus on the goal of compiling a high-resolution openly available bathymetric model of the World Ocean seabed at the highest resolution possible from the coast to the deepest trenches by the year 2030. This model should efficiently provide bathymetric information to end users and leave no features of the World Ocean floor smaller than 100 m unmapped by the completion of the program.

Member States are encouraged to provide bathymetric sounding data to General Bathymetric Chart of the Ocean (GEBCO) in support of mapping the world's oceans and become active participants of the IOC-IHO GEBCO Seabed 2030 project.

9. Other activities

a) Participation in IHO Working Groups

b) MSDI Progress

A Marine Spatial Data Infrastructure (MSDI) is a framework established at a common level (e.g., national, regional, international) that consists of people/organizations with policies/governance, information systems, and technical standards working together to promote the availability, accessibility, and interoperability of marine spatial data. Forward-leaning Hydrographic Offices (HOs) are evolving to a data-centric environment to produce Safety of Navigation (SoN) products where the greater potential exists to easily provide valuable hydrographic data to a broader user-base (e.g., natural resource exploration, scientific research, fisheries management, emergency management). This data-centric approach of "collect once, use many times" promotes the modern view of the HO as a data provider through a MSDI, which makes them a relevant and relied-upon, marine contributor to larger Spatial Data Infrastructures (SDIs). Without such relevance or reliability, support from a broader user-base is forfeited, and the destiny of the HO becomes uncertain in a rapidly advancing, open, technology- and data-driven society.
Within the IHO, the Marine Spatial Data Infrastructure Working Group (MSDIWG) is responsible for monitoring "national, regional, and international SDI activities and trends" and supply information up to the organizational structure of the IHO to the IRCC. There has been a push among several IHO Regional Hydrographic Commissions (RHCs) towards regional MSDI-related working groups and projects for their respective regions:

- Arctic Regional Marine Spatial Data Infrastructure (ARMSDWIG)
- Baltic Sea and North Sea MSDIWG (BS-NSMSDIWG)
- Meso American - Caribbean Sea Hydrographic Commission Marine Economic Infrastructure Programme Working Group (MACHC MEIP WG)

The United States has a strong focus on MSDI within their National Spatial Data Infrastructure (NSDI) and at regional levels. In particular, the United States is currently leading several of the IHO MSDI-related working groups:

- Vice-Chair, MSDIWG
- Chair, ARMSDIWG
- Chair, MACHC MEIP WG

Approaching MSDI at a regional level has been the trend within the IHO. MSDIWG is recognizing that "it is becoming more important to consider taking MSDI as a RHC agenda item therefore we hope to see a National MSDI report prepared by each MS for submission to every RHC incorporating the status of MSDI, plans for involvement in MSDI and challenges facing the HO." The MSDIWG has requested the IRCC "to endorse the need to include MSDI agenda items in National reports to RHC's and to nominate RHC MSDI ambassadors to provide such reports."

10. Conclusions

a) Areas of significant achievement
Progress globally on MSDI and consideration on implementation in the RSAHC

b) Areas of particular concern
Support GEBCO and open data policies to maximum extent within national policies to help expand customer base and support as well as expose to a broader audience the relevancy of hydrographic offices.

c) Any other matters of interest to the RHC

The NIOHC is invited to:

a. note the report;

b. Participate as active members of the GEBCO Seabed 2030 project;

c. Provide bathymetric data to the IHO DCDB to support mapping ocean areas at high resolution;

d. Provide shallow water bathymetric data from Electronic Navigational Charts (ENC) to the IHO DCDB;

e. Develop strategies to collect bathymetric data in ocean areas; and

f. Take action as seen appropriate.

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

Country information / Informations sur le pays/ Información sobre el país

Declared National Tonnage **Tonnage national déclaré** **Tonelaje Nacional Declarado**	25526217 tons (2016)
National day **Fête nationale** **Fiesta nacional**	4 July
Date first joined IHO **Date d'adhésion à l'OHI** **Fecha de adhesión a la OHI**	20/06/1922
Date ratification Convention **Date de ratification de la Convention** **Fecha de ratificación de la Convención**	10/06/1968 11/08/2016 (new protocol entry into force date)

Contact information/ Informations de contact / Información de contacto
Official Representative to IHO (as designated by Member Government)
(US represented by two agencies, Dept. of Commerce and Dept. of Defense)
Représentant officiel à l'OHI (tel que désigné par le Gouvernement Membre)

Office of Coast Survey / National Ocean Service (OCS/NOS)

Department of Commerce **Hydrographer Directeur du service hydrographique ou équivalent** **Director del Servicio Hidrográfico o equivalente**	Post: Director of NOAA's Office of Coast Survey Rear Admiral Shepard SMITH Postal address: 1315 East-West Highway SSMC-3 N/CS x 7, SILVER SPRING, Maryland, 20910-3282, United States of America Staff Point of Contact, Mr. Jonathan JUSTI Tel: + 1 (301) 713-2770 Fax: + 1 (301) 713-4019 E-mail: OCS.International@noaa.gov
Web site **site web** **sitio web**	http://www.nauticalcharts.noaa.gov

Agency information / Information sur l'agence / Información sobre la agencia

Date of establishment **Date de mise en place** **Fecha de constitución** **Remarks** **Remarques** **Observaciones**	1807 The Organic Act of 10 February 1807, (2 Stat.4134) authorized the President of the United States "to cause a survey to be taken of the coasts of the United States…"
Top level parent organization **Organisme mère** **Organización asocieda de nivel superior**	National Oceanic and Atmospheric Administration U.S. Department of Commerce.
Principal functions of the organization or the department **Attribution principales de l'organisme ou du département** **Principales funciones de la Organización o el departamento**	Hydrographic surveys, Nautical charts, Geodetic surveys, Tides/Currents, Engineering and Systems Development. Specialized library : marine and earth sciences (NOAA library facility related to NOS activities).
Number of INT charts published **Nombres de cartes INT publiées** **Número de cartas INT publicadas**	15(does not include NGA maintained INT Charts)
Total number of paper charts published **Nombre total de cartes papier publiées** **Número total de cartas de papel publicadas**	1032
Number of ENC cells published **Nombres de cellules ENC publiées** **Número de células ENC publicadas**	955 (Updated monthly, please refer to the website for recent postings.) http://nauticalcharts.noaa.gov/mcd/enc/index.htm
Type of publications produced **Type d'ouvrages produits** **Tipo de publicaciones producidas**	Sailing Directions. NOAA's Coast Pilot. For details, consult the following website: http://nauticalcharts.noaa.gov/nsd/cpdownload.htm

Detail of surveying vessels/ Aircraft -Détail des bâtiments hydrographiques/aéronefs -Detalle de buques hidrográficos/Aeronaves	**Displacement déplacement Desplazamiento**	**Commissioning Date date de mise en service Fecha de puesta en servicio**	**Crew équipage Personal**
RAINER	1800	1967	62 (10*)
FAIRWEATHER	1800	1967	45 (7*)
THOMAS JEFFERSON	2054	2003**	31 (8*)
FERDINAND R HASSLER	738	2012	14 (4*)
BAY HYDRO II	45	2009	3 (1*)
6 Navigation Response Teams (Hydrographic Field Parties)	27 ft launches, 3 person crews		
2 Mobile integrated survey teams (MIST)	Portable hydrographic survey equipment able to be installed on vessels of opportunity during emergencies (SSS, VBES, and SSS equipped AUV) * = number of officers included in figure ** = Thomas Jefferson was in US Navy vessel launched in 1992, and acquired and recommissioned by NOAA in 2003		

NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY
DEPARTMENT OF DEFENSE (NGA)

Contact information / Informations de contact / Información de contacto

Department of Defense Hydrographer **Director or equivalent** **Directeur ou équivalent** **Director o equivalente**	Senior GEOINT Authority, NGA John E. Lowell Jr 7500 GEOINT Drive Springfield, VA, 22150 – 7500 United States of America Tel: + 1 (571) 558 3558 Email: MaritimeInternational@nga.mil
Other point(s) of contact **Autre(s) point(s) de contact** **Otros punto(s) de contacto**	(Point of Contact (Nautical Products)) Director, Maritime Safety Office, CAPT Brian Connon E-mail: MaritimeInternational@nga.mil
Web site **site web** **sitio web**	http://www.nga.mil

Agency information / Information sur l'agence / Información sobre la agencia

Date of establishment **Date de mise en place** **Fecha de constitución**	06/12/1830
Top level parent organization **Organisme mère** **Organización asocieda de nivel superior**	Department of Defense
Principal functions of the organization or the department **Attribution principales de l'organisme ou du département** **Principales funciones de la Organización o el departamento**	NGA provides: Nautical charts, Aeronautical charts, Topographic maps, Sailing Directions, List of Lights, Notices to Mariners, navigational and geodetic data, and related products and services to the Armed Forces of the United States, other Department of Defense and federal agencies and to the Merchant marine and Mariners in general.
Total number of paper charts published **Nombre total de cartes papier publiées** **Número total de cartas de papel publicadas**	Approximately 5 000 chart are contained in 3400 DNC libraries

Type of publications produced **Type d'ouvrages produits** **Tipo de publicaciones producidas**	Paper charts (worldwide folio of approx. 4000). Digital charts (worldwide folio of 5000 Digital Nautical Charts in Vector Product Format). Notices to Mariners. Sailing Directions. For details consult the WEB site: General Information: http://www.nga.mil Marine Safety Information: http://msi.nga.mil/NGAportal/MSI.portal Digital Nautical Chart: http://msi.nga.mil/NGAportal/DNC.portal

Detail of surveying vessels/ Aircraft **-Détail des bâtiments hydrographiques/aéronefs** **-Detalle de buques hidrográficos/Aeronaves**	**Displacement** **déplacement** **Desplazamiento**	**Commissioning Date** **date de mise en service** **Fecha de puesta en servicio**	**Crew** **équipage** **Personal**
	Ships of the Naval Oceanographic Office support NGA Nautical Chart Production.		

Other Organizations providing national Hydrographic Services
Autre Organismes fournissant des services hydrographiques au niveau national.

COMMANDER, NAVAL METEOROLOGY AND OCEANOGRAPHY COMMAND (CNMOC)

Contact information / Informations de contact / Información de contacto

Director or equivalent **Directeur ou équivalent** **Director o equivalente**	Commander, Naval Meteorology and Oceanography Command Hydrographer of the US Navy RAdm Timothy C. GALLAUDET Postal address: Attention: Hydrographer of the Navy 1100 Balch Blvd., STENNIS SPACE CENTER, MISSISSIPPI, 39522-5001, United States of America Tel: +1 228 688 4301 Fax: +1228 688 5037 Deputy Hydrographer of the US Navy: Mr. Stanley HARVEY E-mail: Stanley.b.harvey@navy.mil Tel: +1 228 688 5082
Other point(s) of contact **Autre(s) point(s) de contact** **Otros punto(s) de contacto**	Naval Oceanographic Office, Commanding Officer: CAPT Greg IRETON, USN E-mail: greg.ireton@navy.mil Scientific and Technical Director: Mr Marcus JARRETT E-mail: marcus.jarrett@navy.mil Tel: +1 228 688 4205 Fleet Survey Team, Commanding Officer: CDR John GARSTKA E-mail: john.garstka@navy.mil Tel: +1 228 688 5325
Web site **site web** **sitio web**	http://www.navy.mil/local/cnmoc

Agency information / Information sur l'agence / Información sobre la agencia

Date of establishment **Date de mise en place** **Fecha de constitución**	06/12/1830
Principal functions of the organization or the department **Attribution principales de l'organisme ou du département** **Principales funciones de la**	Collection, analysis and display of oceanographic (to include oceanographic, meteorological, hydrographic and geophysical) data to support Navy operations. Improvement of oceanographic prediction, data collection, and data analysis methods. Assistance to other

Organización o el departamento	countries in meeting their oceanographic and hydrographic requirements.		
Detail of surveying vessels/ Aircraft -Détail des bâtiments hydrographiques/aéronefs -Detalle de buques hidrográficos/Aeronaves	**Displacement déplacement Desplazamiento**	**Commissioning Date date de mise en service Fecha de puesta en servicio**	**Crew équipage Personal**
USNS PATHFINDER (T-AGS-60)	5000	1993	55
USNS BOWDITCH (T-AGS-62)	5000	1996	55
USNS HENSON (T-AGS-63)	5000	1998	55
USNS BRUCE HEEZEN (T-AGS-64)	5000	2000	55
USNS MARY SEARS (T-AGS-65)	5000	2003	55
USNS MAURY (T-AGS-66)	5000	2016	55
Compact Hydrographic Airbourne Total Survey (CHARTS) system deployed on contractor aircraft. 2 Defender Class and 1 9-m rhib for Fleet Survey.			

Annex B
Input to the IHO Publication C-55 (*Status of Hydrographic Surveying and Charting Worldwide*)

N/A

Annex C

National MSI Self-Assessment

N/A