



19th Conference of the IHO Hydrographic Commission on Antarctica

National Report by Spain (IHM)

Agenda item 07.2Ar

HCA-19, Venice, Italy (hybrid), 16 – 18 Apr 2024



IHO

Surveys and charting progress in Antarctica since HCA-18

International
Hydrographic
Organization

- **Requirements**
- **Areas surveyed**

NTR

- **New charts produced (INT, national, ENC)**

NTR

- **New / update publications**

Update Spanish Navy MSDI

- **Risk Assessment studies**

NTR





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Relations with Other Organizations

International
Hydrographic
Organization

Scientific and polar institutes



Spanish Polar Committee

<https://www.ciencia.gob.es/en/Organismos-y-Centros/Comite-Polar-Espanol.html>



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Relations with Other Organizations

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Cruise vessels



BIO «Hespérides»
2.830 Tns.
82,5 mts.
55 personnel +37 Scientifics
Operated by Spanish Navy



BO «Sarmiento Gamboa»
1.979 Tns.
70,5 mts.
16 personnel +26 Scientifics
Operated by CSIC

BO «Odón de Buen»
1.979 Tns.
84,30 mts.
19 personnel +39 Scientifics
Operated by CSIC





IHO Relations with Other Organizations



Cruise vessels for the Spanish Hydrographic Office (IHM)

- In 2023 the Ministry of Defence authorized to built two Coastal hydrographic vessels, which entry in operation in 2027 and 2028, and fitted with AUV.
- During this year the Ministry of Defence will be sign the new hydrographic and oceanographic vessel with polar capacity and fitted with two H boats and AUV.



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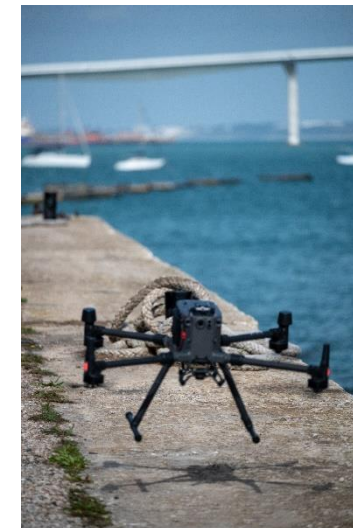


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Relations with Other Organizations

International
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Organization

Deployable and unscrewed systems for shallow/ open waters



IHM can deploy light and high performance assets for high resolution mapping:

- Hydro-RHIB fitted with MBES (Kongsberg EM2040). Survey team consisting of 3 people.
- 3 units USV “Veril-1, 2 and 3” for remote operations in very shallow waters (Kongsberg EM2040 EM2040).
- 1 unit USV “Sonda-01” (6 mts length) for remote operations in open waters (Kongsberg EM2040 EM2040).
- Topobathy RPA, fitted with photogrammetric cameras, *topolidar* and multispectral sensor.

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Relations with Other Organizations

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PENANT 1 MARINE GEOPHYSICS CAMPAIGN



1. From January 16 to February 24, 2024 IHM collaborated in the PENANT2024 marine geophysics campaign.
2. This campaign is part of the coordinated project of the TEMPERATE National R&D Plan "Tectonic evolution of the Northern Antarctic Peninsula from the Miocene to the present and its influence on the establishment, development and migration of the CDW current “.
3. This project is coordinated of the Andalusian Institute of Earth Sciences (IACT-CSIC).
4. Geophysical data, geological samples of the seabed and water have been obtained.
5. This campaign plans to cover the northwestern sector of the Antarctic Peninsula (Antarctica) Mar de Hoces Strait (in English language Drake strait) .
6. <https://polarcsic.es/proyecto-y-resultados/campanaspolares/>

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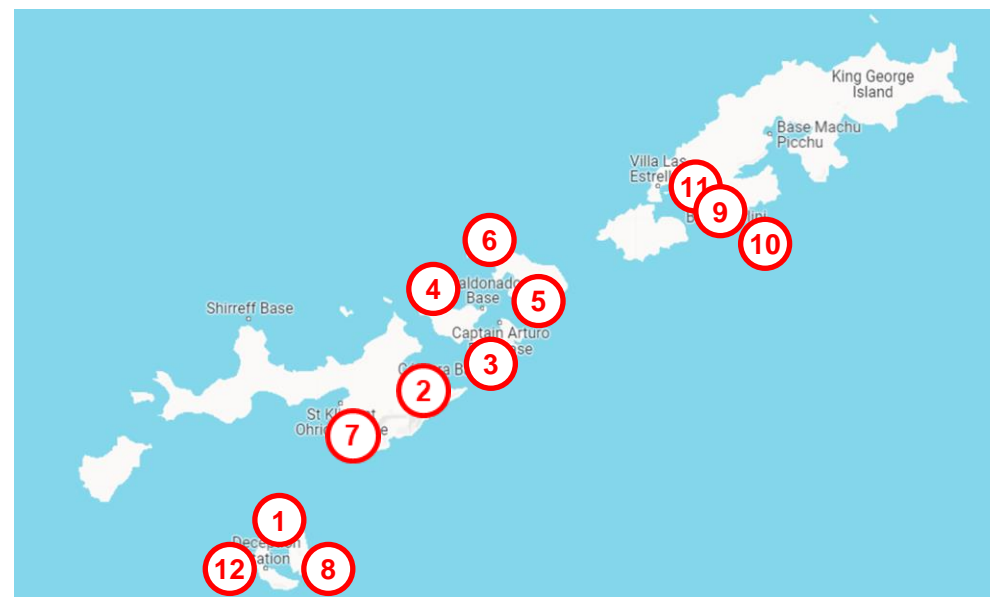
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Relations with Other Organizations

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From 2014, the IHO collaborate in HAS (Galileo High Precision Service) GNSS Galileo project in at high latitudes in Antarctica.

1. 04/03/2024: Decepción I.: BAE Gabriel de Castilla
2. 06/03/2024: Media Luna I.: Base Cámara (Argentina)
3. 06/03/2024: Greenwich I. Yankee Harbour
4. 07/03/2024: Dee Island.
5. 07/03/2024: Isla Island.
6. 07/03/2024: Robert Island: *Caleta Coppermine - Refugio Risopatrón* (Chile)
7. 08/03/2024: Isla Livingston: BAE Juan Carlos I
8. 08/03/2024: Decepción I.: *Caleta de Balleneros*
9. 09/03/2024: Rey Jorge I.: *Península Weaver*
10. 10/03/2024: Rey Jorge I.: *Caleta Potter - Base Carlini* (Argentina)
11. 11/03/2024: Rey Jorge I.: *Bahía Freid – Russian Base* (Church)
12. 12/03/2024: Decepción I.: BAE Gabriel de Castilla



https://www.euspa.europa.eu/sites/default/files/es_the_galileo_high_accuracy_service_has_is_now_operational.pdf



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Relations with Other Organizations

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- **Hydrographic data received from other organizations**
NTR
- **Hydrographic data provided to other primary charting and/ or
GEBCO & Seabed 2030**

Spanish metadata surveys in Region M to Region M ICCWG.



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Relations with Other Organizations

International Hydrographic Organization

- **Measurement of the Sea Level: deployment of a buoy (20/01 to 18/03/2024).**

2 x DeepMotion GNSS RTK + INS



Position Light Signal

2 x WIFI Antenna

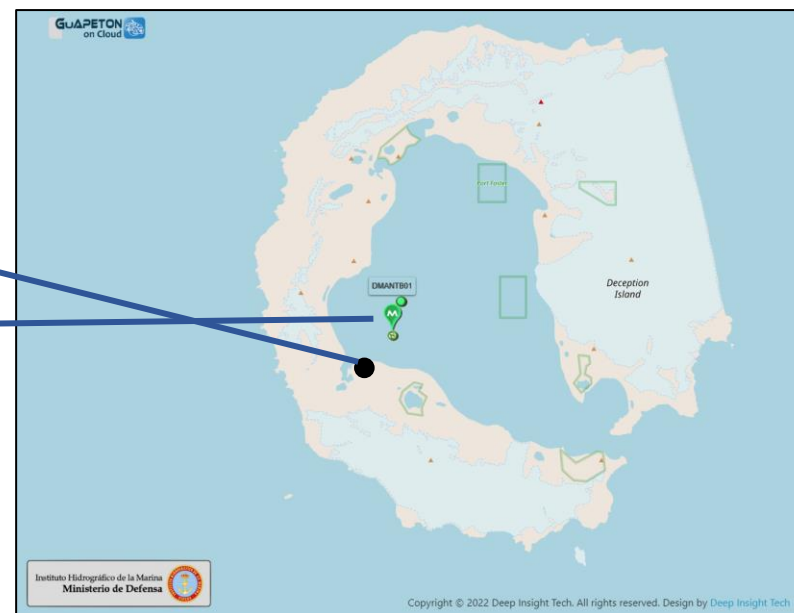
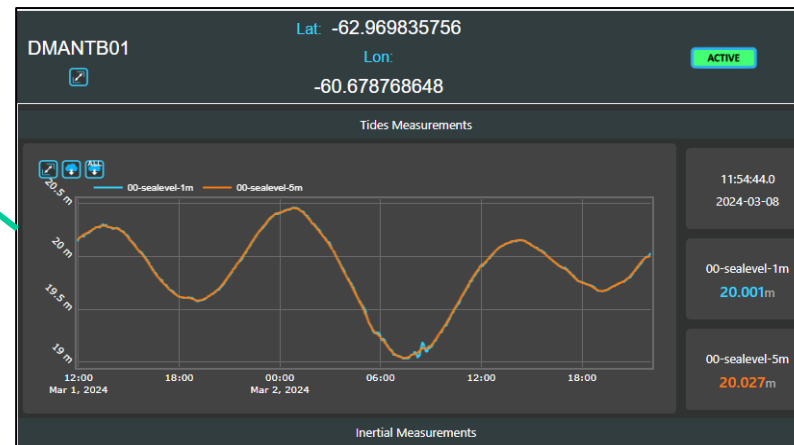
Online Data

RTK Correction, Internet

Gabriel de Castilla Station

Solar Panels

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IHO Other information

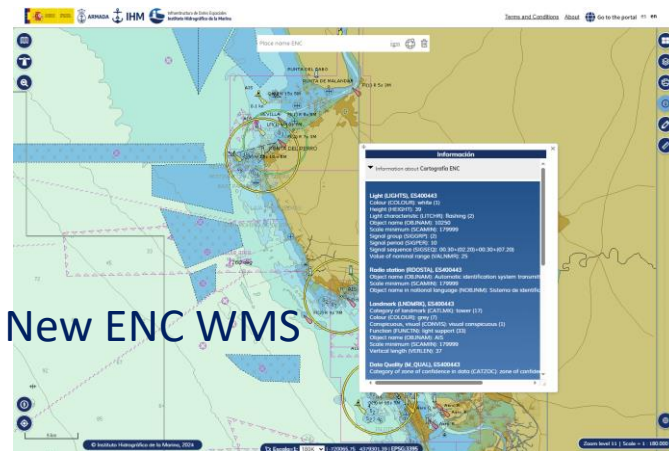
International Hydrographic Organization

- Spanish Navy MSDI update

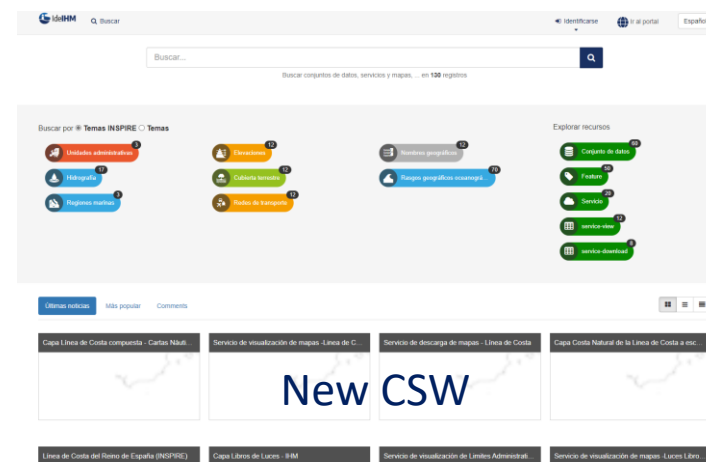
IdeIHM: <https://ideihm.covam.es>



New design



New ENC WMS

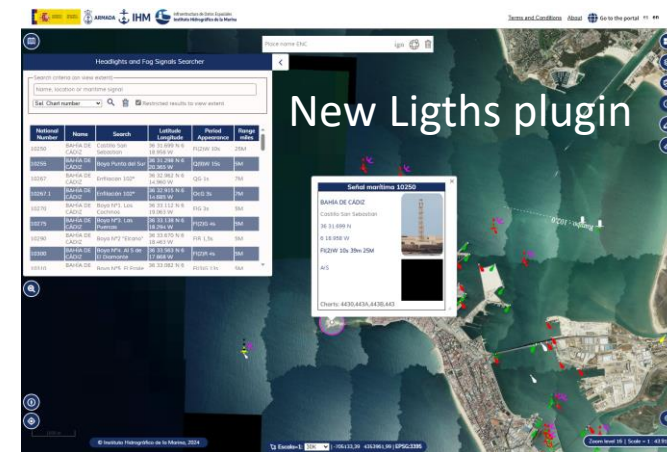


New CSW

New WMS/WCS hydrographic vertical reference surface



Tidal API



New Lights plugin

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Planned Activities for 2022-2023

International
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- Polar Strategic Plan 2021-2030

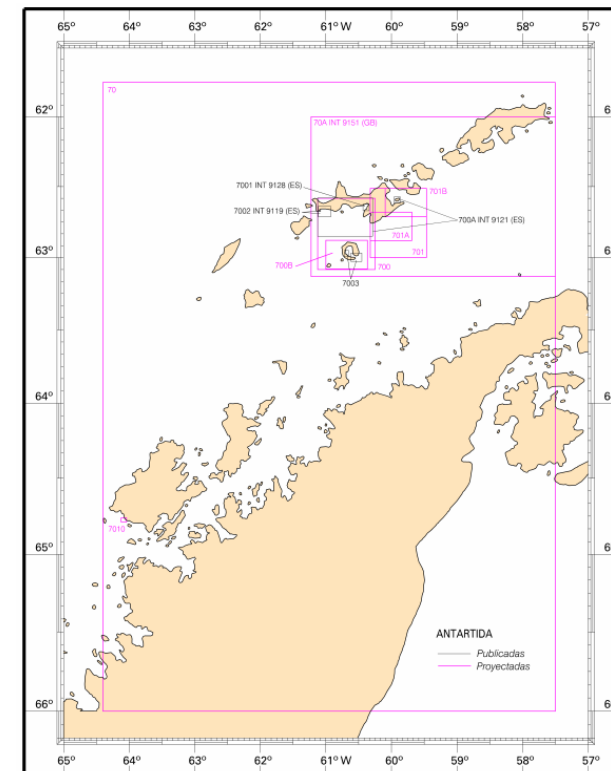


MINISTERIO
DE DEFENSA

ARMADA
FLOTA
FUERZA DE ACCIÓN MARÍTIMA
INSTITUTO HIDROGRÁFICO DE LA MARINA
Área de Hidrografía

PLAN ESTRATEGICO POLAR 2021-2030
INSTITUTO HIDROGRÁFICO DE LA MARINA

- Objectives
 - Implementation of the Antarctic Cartographic Project
 - Collaboration in polar research projects
 - Participation in international projects for ocean exploration





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Planned Activities for 2022-2023

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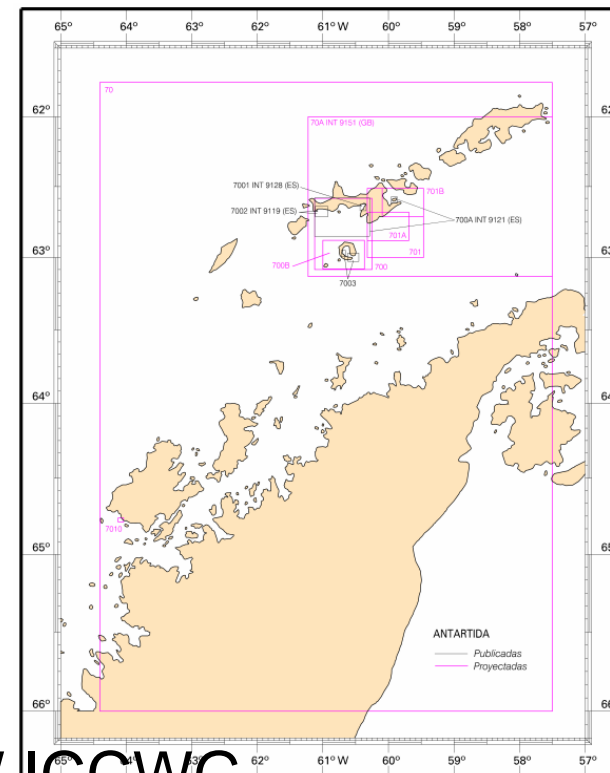
- Polar Strategic Plan 2021-2030



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PLAN ESTRATEGICO POLAR 2021-2030
INSTITUTO HIDROGRÁFICO DE LA MARINA



- Priority in publishing INT Charts 9136 and 9137 IAW ICCWG
- New surveys, coordination with other bodies.
- New charts around Livingstone island, Media Luna island and McFarlane Strait in the next campaign during 2023-24 and several gaps in Bransfield Strait.
- Coordinated development of S-100 services in the region

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Recommendations, Actions to be considered by HCA

International
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Decision HCA18/ 29 and 30 INT 9120 Deception Island and ENC

At the last CHA Conference, the ICCWG presented the proposal for the joint publication of the international letter INT9120. The position that we maintained at the time on this proposal was the following:

“The Spanish base Gabriel de Castilla is in the inner bay of Deception Island so Spain interests in this area remain.

Note that there is another band 5 ENC in the inner bay of Deception Island that Spain produces, ES507003, in Fumarolas Bay, where the Spanish base Gabriel de Castilla is located. This ENC should be taken into account in the proposed Deception Island scheme.

As I said, Spain's interests in this area are clear and therefore Spain has its national cartography covering their national needs.



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Recommendations, Actions to be considered by HCA

International
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Decision HCA18/ 29 and 30 INT 9120 Deception Island and ENC

The upcoming INT 9120 co-production chart ... should cover these Spanish national needs and therefore be aligned with the Spanish national charts too, as they are with the Argentine, Chilean and UK charts. In that case Spain would also adopt this INT 9120 chart.”

Furthermore, both Argentina and the United Kingdom have requested several information from IHM:

- Bathymetries of the area
- Information about lights and other navigation aids
- Shoals confirmation.

Therefore, in principle, IHM should also enter as co-producers.



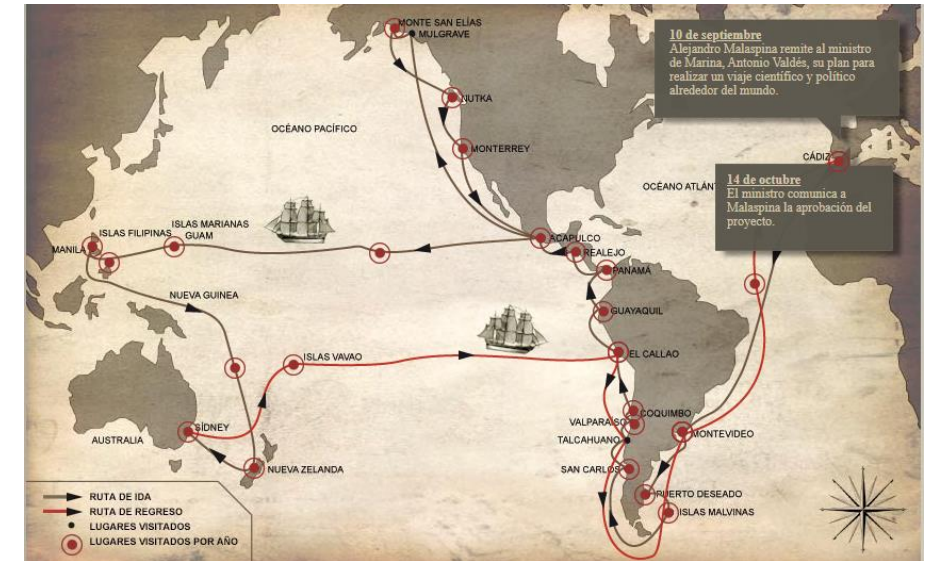
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Many thanks for your attention

International Hydrographic Organization



La Corbeta ATREVIDA entre Bancos de nieve la noche del 28 de Enero de 1794 estando en Latitud S 32° 13' y Longitud 42° 7' Occidental de Cádiz.



La corbeta Atrevida (mandada por Capitán de Navío José Bustamante y Guerra) entre bancos de nieve la noche del 28 de Enero de 1794 estando en latitud Sur 32° 13' y longitud 42° 7' occidental de Cádiz (Expedición Malaspina y Bustamante, 1789-1794)

The corvette Atrevida (command to Capt. José Bustamante y Guerra) between banks of snow on the night of January 28th, 1794 at latitude S 32° 13' and Longitude 42° 7' west of Cádiz (Malaspina and Bustamante expedition, 1789-1794).

<https://www.fbbva.es/microsites/malaspina/index.html>
<https://www.fbbva.es/microsites/malaspina/mapa.html#ruta1793>