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**18th Conference of the EAtHC /
*18^{ème} Conférence de la CHAtO***

National Report / *Rapport National*

**Instituto Hidrográfico de la Marina
Spain / Espagne**

Agenda Item 6.5



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FRAMEWORK / GENERAL INFORMATION

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<http://www.armada.mde.es/ihm>

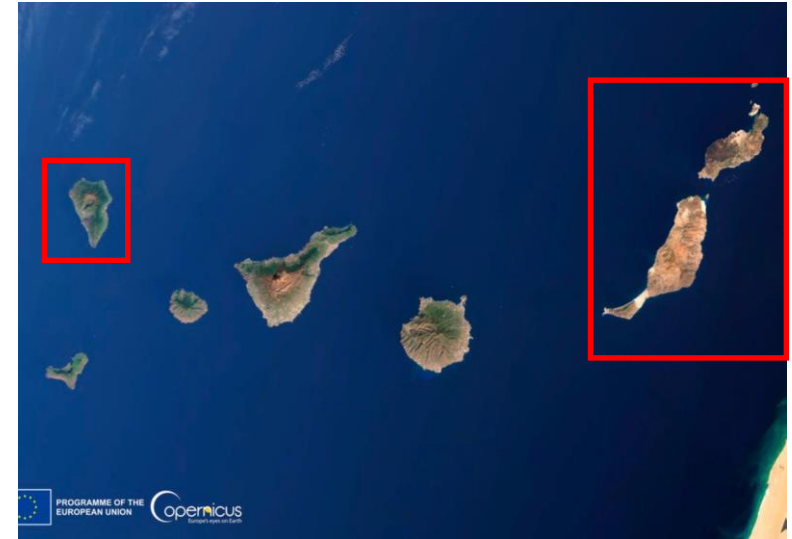


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MAIN ACTIVITIES SINCE EATHC17

SURVEYS

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MAIN ACTIVITIES SINCE EATHC17

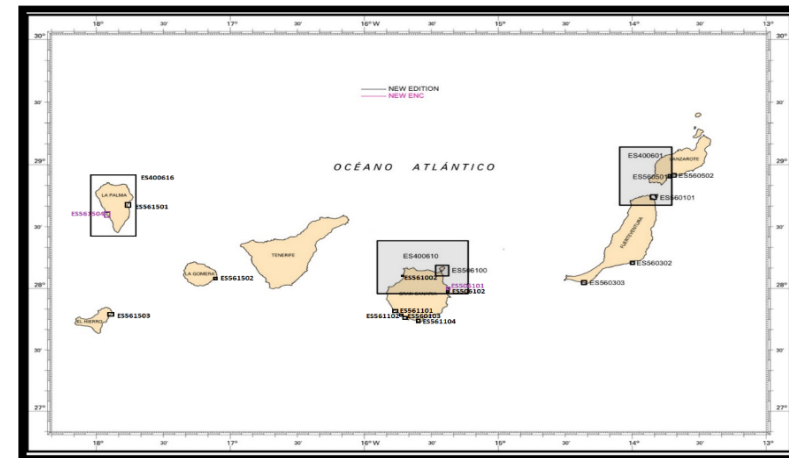
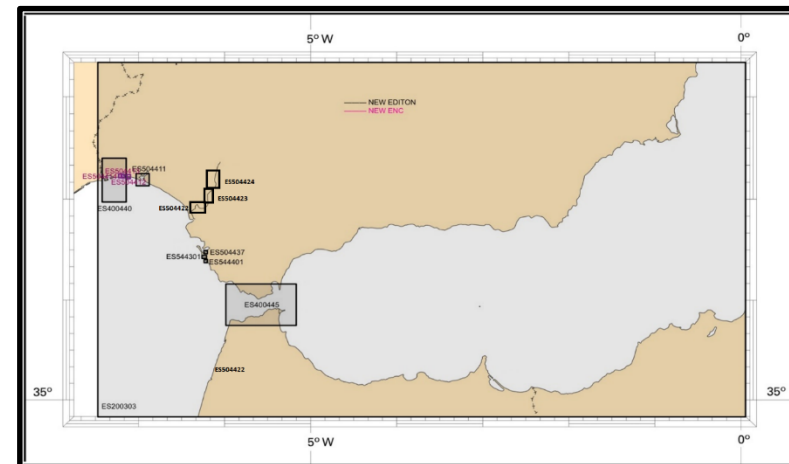
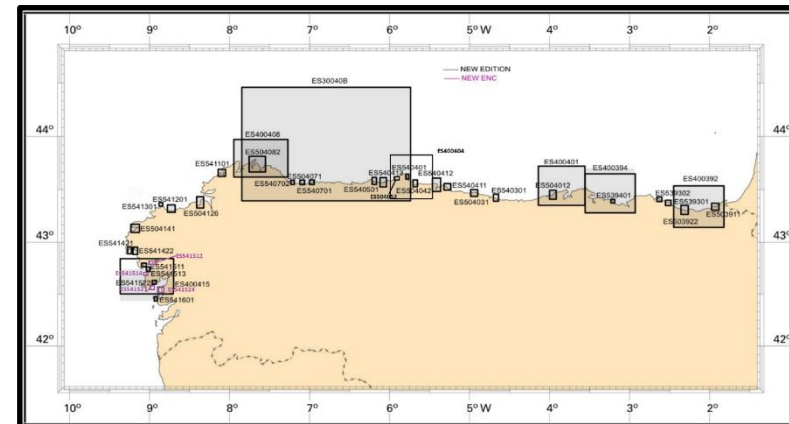
CARTOGRAPHIC PRODUCTION

ENC

- 75 ENC's produced in this area
(9 new ENC's & 66 new editions)

EAtHC ENC Production (until 2024/03/31)

Purpose	Total	Published	Pending	Since EAtHC17
2 (General)	4	4 (100%)	0 (0%)	1
3 (Coastal)	11	11 (100%)	0 (0%)	1
4 (Approach)	38	38 (100%)	0 (0%)	12
5 (Harbour)	98	94 (96%)	4 (4%)	61
6 (Berthing)	14	1 (7%)	13 (93%)	0
Total	165	148 (90%)	17 (10%)	75



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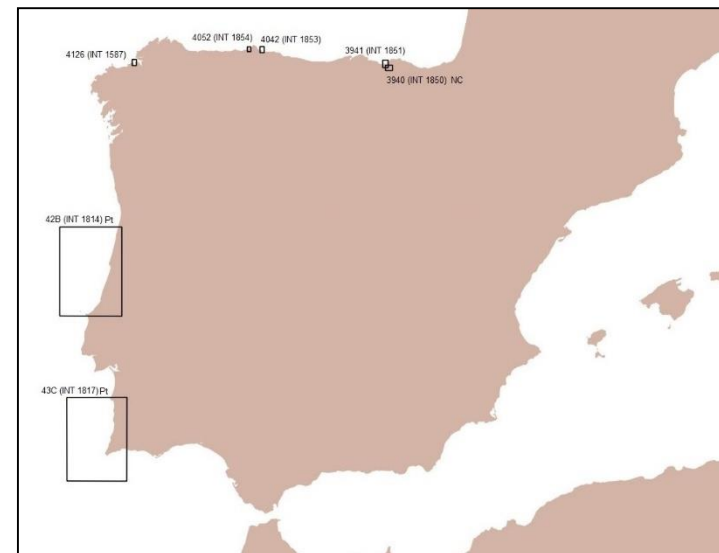
MAIN ACTIVITIES SINCE EATHC17

CARTOGRAPHIC PRODUCTION

INT paper charts

- 9 charts published

NUM (INT)	SCALE	TITLE
6100 (INT 1928) NE	1/12 500	Puerto de Las Palmas
4126 (INT 1587) NE	1/10 000	Ría y puerto de A Coruña
4042 (INT 1853) NE	1/10 000	Puerto de Gijón
4052 (INT 1854) NE	1/7 500	Ría de Avilés
3940 (INT 1850) NC	1/12 500	Ría de Bilbao
3941 (INT 1851) NE	1/12 500	Puerto de Bilbao
43C (INT 1817) (NE) (PT)	1/150 000	De cabo de Sines a Lagos
42B (INT 1814) (NE) (PT)	1/150 000	De Aveiro a Peniche
68 (INT 1928) (NE) (PT)	1/350 000	Archipiélago de Madeira



National paper charts

- 9 charts published

NUM	SCALE	TITLE
4012 (NE)	1/10 000	Ría de Suances
4082 (NE)	1/20 000	Rías de Viveiro y O Barqueiro
4071 (NE)	1/10 000	Puertos de Ribadeo
3922 (NE)	1/10 000	Ensenada de Deba y puertos de Mutriku y Ondarroa
6102 (NE)	1/5 000	Puerto de Salinetas
4437 (NE)	1/5 000	Arsenal de la Carraca
616 (NE)	1/60 000	Isla de la Palma
6150 (NE)	1/7 500	Puertos de Santa Cruz de La Palma, San Sebastián de La Gomera y La Estaca
4125 (NE)	1/15 000	Rías de ares y Betanzos





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MAIN ACTIVITIES SINCE EATHC17

S-100 TRANSITION

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STANDARD	CURRENT STATUS OF IMPLEMENTATION	DISTRIBUTION / VALIDATION
S101	First test (2 ENC) sent to IC-ENC in February 2023	IC-ENC
S102	First test (2 ENC) sent to IC-ENC in May 2023	IC-ENC
S104	First test sent to IC-ENC in December 2023	IC-ENC
S111	Software development actions in progress	IC-ENC
S124	Planned to start software development actions	WWNWS
S128	Planned production by IC-ENC with IHM data	IC-ENC
S129	In process of needs identification	¿?

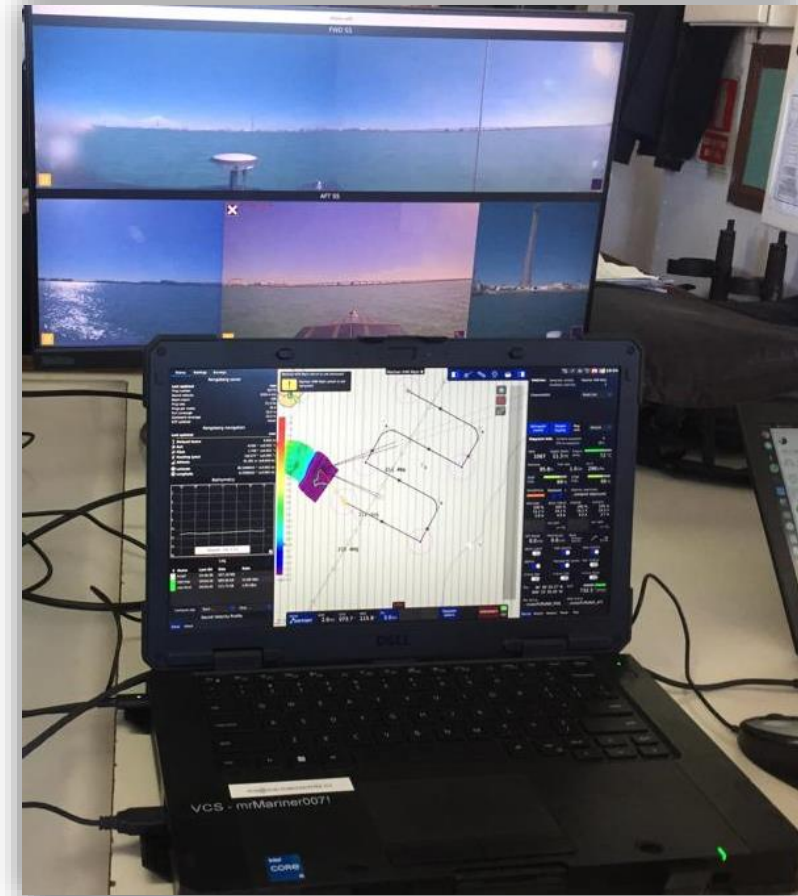


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MAIN GOALS SINCE EATHC17

USV/UAV OPERATIONAL USE

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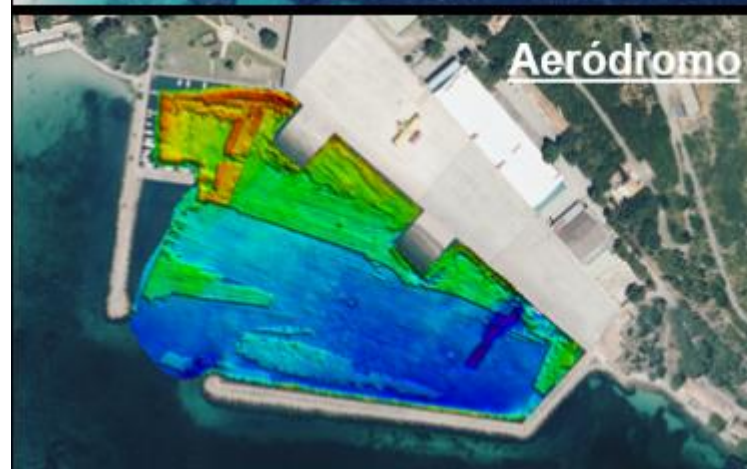
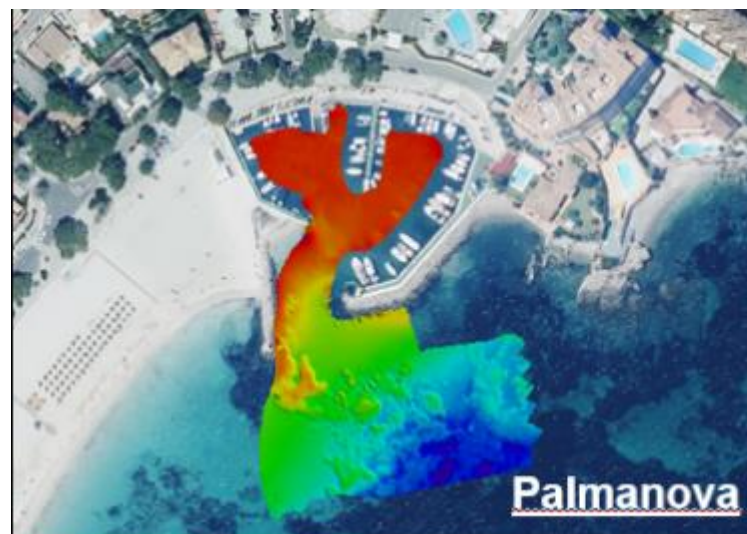


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MAIN GOALS SINCE EATHC17

USV/UAV OPERATIONAL USE

OTTER PRO (MARITIME ROBOTICS): INNER AREAS / MARINAS





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MAIN GOALS SINCE EATHC17

USV/UAV OPERATIONAL USE

MARINER (MARITIME ROBOTICS): DEPLOYABLE IN OPEN COASTAL WATERS





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MAIN GOALS SINCE EATHC17

USV/UAV OPERATIONAL USE

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Positioning system & 3 sensors:

- Topographic Lidar
- Multispectral sensor
- HD camera



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MAIN GOALS SINCE EATHC17

USV/UAV OPERATIONAL USE

- **Very positive overall assessment.**
- **Need to develop different procedures.**
- **New qualifications** (drones, USV...) and maintenance of new capabilities.
- **Lack of legislation** in the case of USVs.

- Answering the question "**what for**" and **ad hoc solutions**. Example:
 - Small USV: confined waters, little current.
 - Intermediate USV: open coastal waters, coordination of maritime authorities.
 - Specific uses (e.g. rivers): define survey planning, data acquisition and processing procedures according to needs.

- **Long learning curve.** Training periods in annual activities.
- Take into account **platform adaptation and maintenance**.



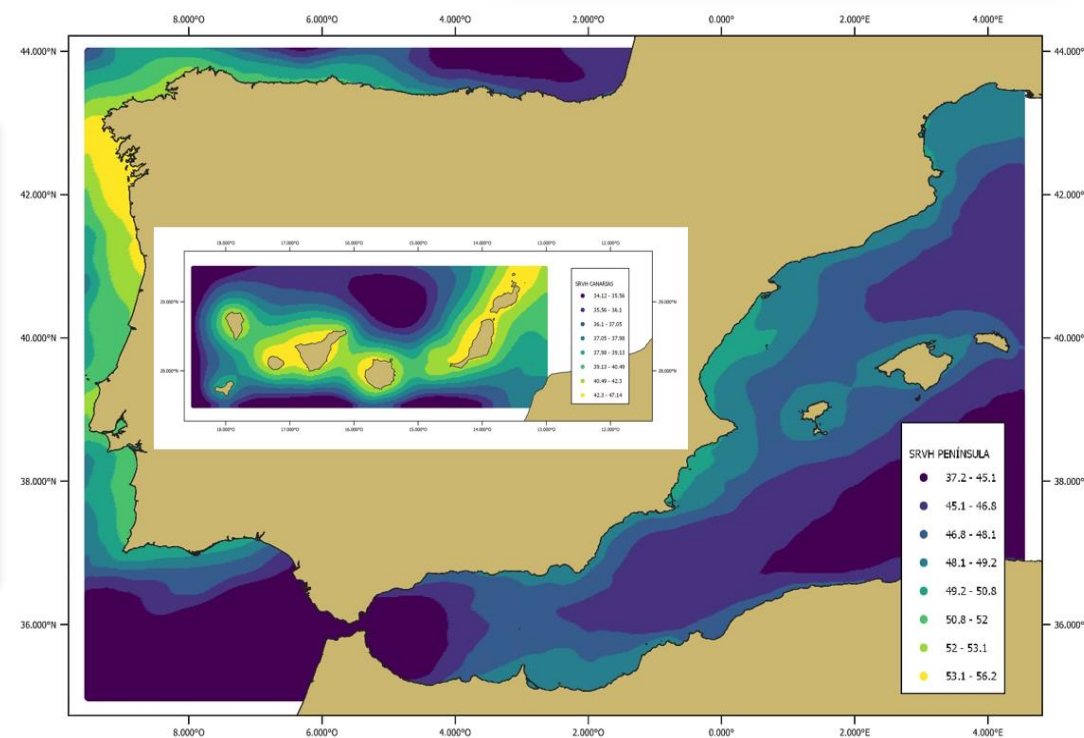
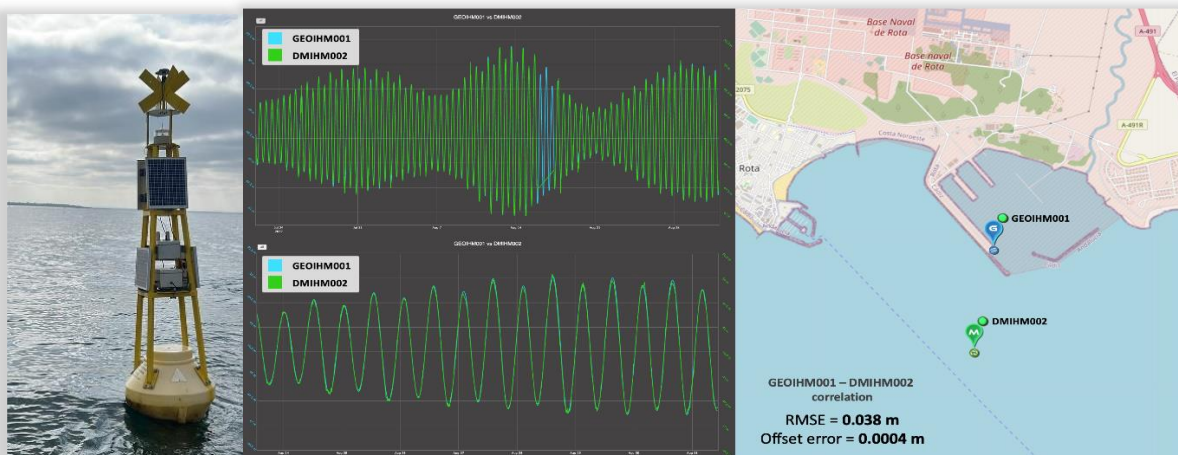
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HYDROGRAPHIC VERTICAL REFERENCE SURFACE



Unique official hydrographic datum for Spanish nautical cartography.



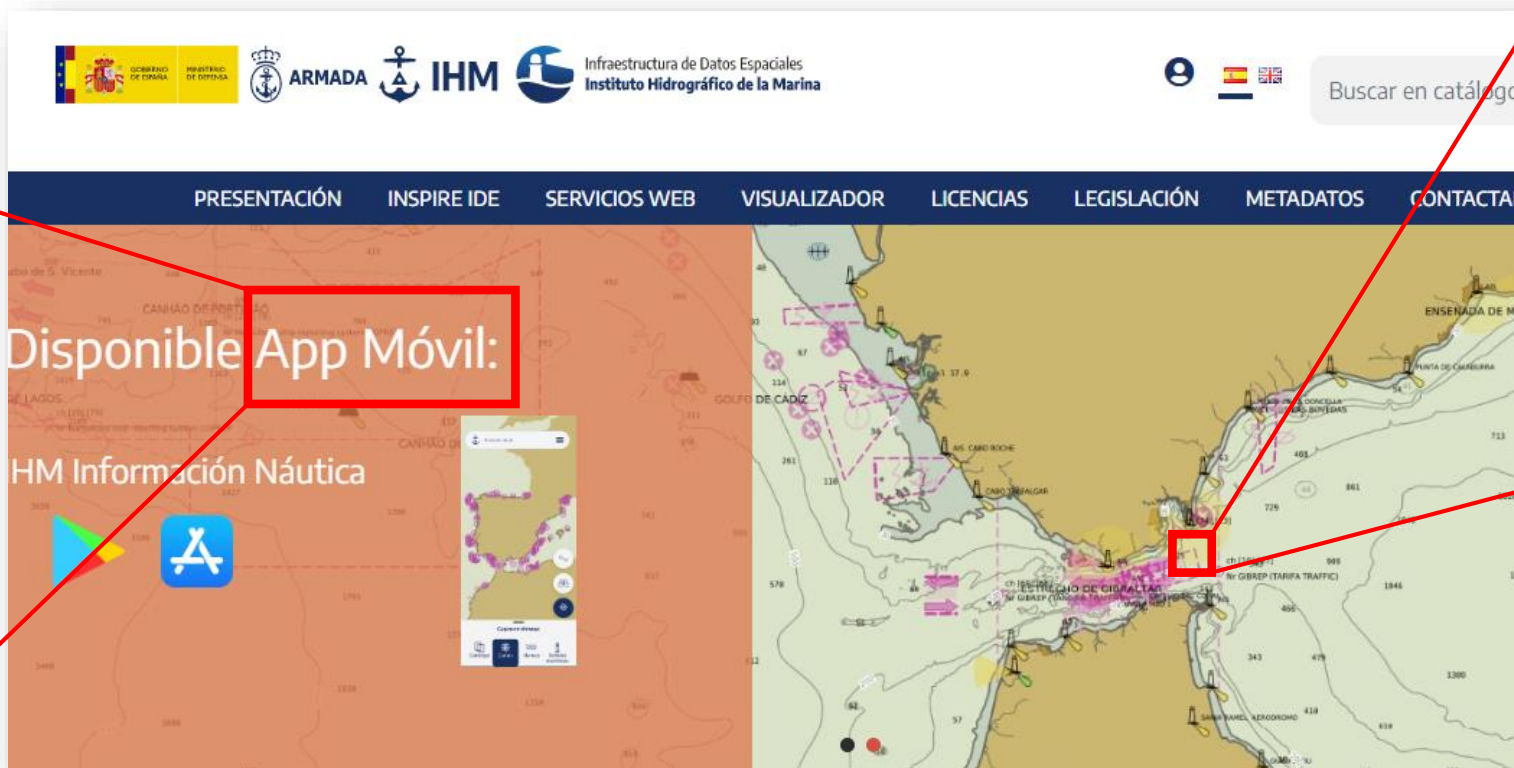


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MSDI IMPROVEMENTS

International Hydrographic Organization



WMS/WFS

- DTM
- Tides data
- Geospatial objects contained in ENC

PUBLIC SERVICE: OPEN DATA RELEASE POLICY

<https://ideihm.covam.es/visualizador/inicio>



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MSDI IMPROVEMENTS

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The screenshot displays the IHO's Visualizador de Mapas de Datos Espaciales (MSDI) web application. The interface includes a top navigation bar with logos for ARMADA, IHM, and Infraestructura de Datos Espaciales. A central map shows a nautical chart of Bahía de Cádiz. A detailed information popup for 'LIGHT: 10270' is visible, providing details such as position (36 33.112 N 06 19.063 W), appearance (FIG 3s 5), elevation, height (7), signal (raref), phases (0.3 ; 2.7), and support (De castillete verde como vértice hacia arriba verde). The right sidebar shows a 'Capas' (Layers) panel with options for 'WMS Portulanos', 'WMS Deportivas', 'Servicio WMS cacheado de ENC's', 'Libros de Luces - IHM', and 'MapLarge OGC WMS'. The bottom of the map shows a scale of 1:69,034 and a level of 15.

PUBLIC SERVICE: OPEN DATA RELEASE POLICY

<https://ideihm.covam.es/visualizador/inicio>



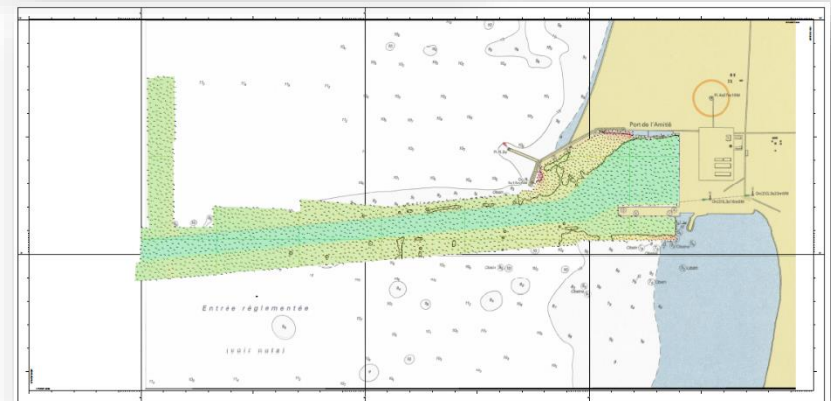
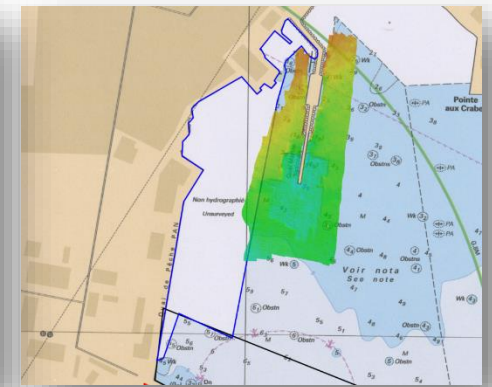
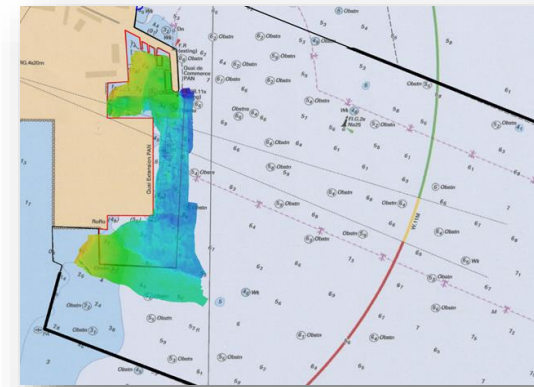
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TOP PLANS THAT AFFECT THE REGION

COOPERATION

- MAURITANIA → SPECIAL NATIONAL REQUEST

NOUAKCHOT AND NOUADHIBOU





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TOP CHALLENGES

NEW SURVEY VESSELS

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PRESENT



FUTURE

BHC



Contracting phase

2024

2025

2026

2027

Design and construction phase

BHO / LHT



Contracting phase

2024

2025

2026

2027

2028

2029

Design and construction phase





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ACTIONS REQUESTED FROM EATHC18

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- EATHC is invited to:
Note this presentation

Thank you for your attention