13th MEETING OF THE IHO INTER-REGIONAL COORDINATING COMMITTEE
IHO-IRCC13
VTC, 23-25 June 2021

Report of the IHO-EU Network Working Group (IENWG)

Submitted by:	IENWG Chairman (FR)
Executive Summary:	Report of activities since the IRCC12 meeting
Related Documents:	Memorandum of Understanding (MoU) signed on 23 April 2012 between the European Commission (EC) and the IHO
Related Project:	European Marine Observation and Data Network (*EMODnet*)

1. Introduction / Background

Since the last IRCC12 meeting the IENWG hold its 11th meeting on 3-4 December 2020. Originally planned in Dublin, Ireland co-located with "20 years of Seabed Mapping" led by Infomar, the meeting was finally hold by VTC due to sanitary conditions.
Thanks to this format, 22 delegates from 15 Member States (Belgium, Croatia, Denmark, France, Germany, Greece, Italy, Ireland, Malta, Netherlands, Norway, Portugal, Romania, Spain and Sweden) were able to participate. The IHO Secretariat participated.
At this meeting, Pierre-Yves Dupuy (France) was elected as chair of the IENWG, taking over Laurent Louvart (France).

As a reminder, the IENWG, a subsidiary group of the IRCC, brings to life the MoU in reference which ensures **a continuing liaison between the EC and the IHO in areas of common interest**.
The IENWG is composed of representatives from RHCs of which at least one EU and European Economic Area (EEA) Member State is a member. Other RHCs or any IHO MS may be represented in the WG as associate members. Currently the membership is as follows.
Chair: France
Members: ARHC, represented by Denmark
BSHC, represented by Sweden
EAtHC, represented by France
MACHC, represented by France
MBSHC, represented by Greece
NHC, represented by Norway
NSHC, represented by Germany
SAIHC, represented by France
***Associate member*:** Italy
***Observers*:** IHO Secretariat

2. Analysis/Discussion

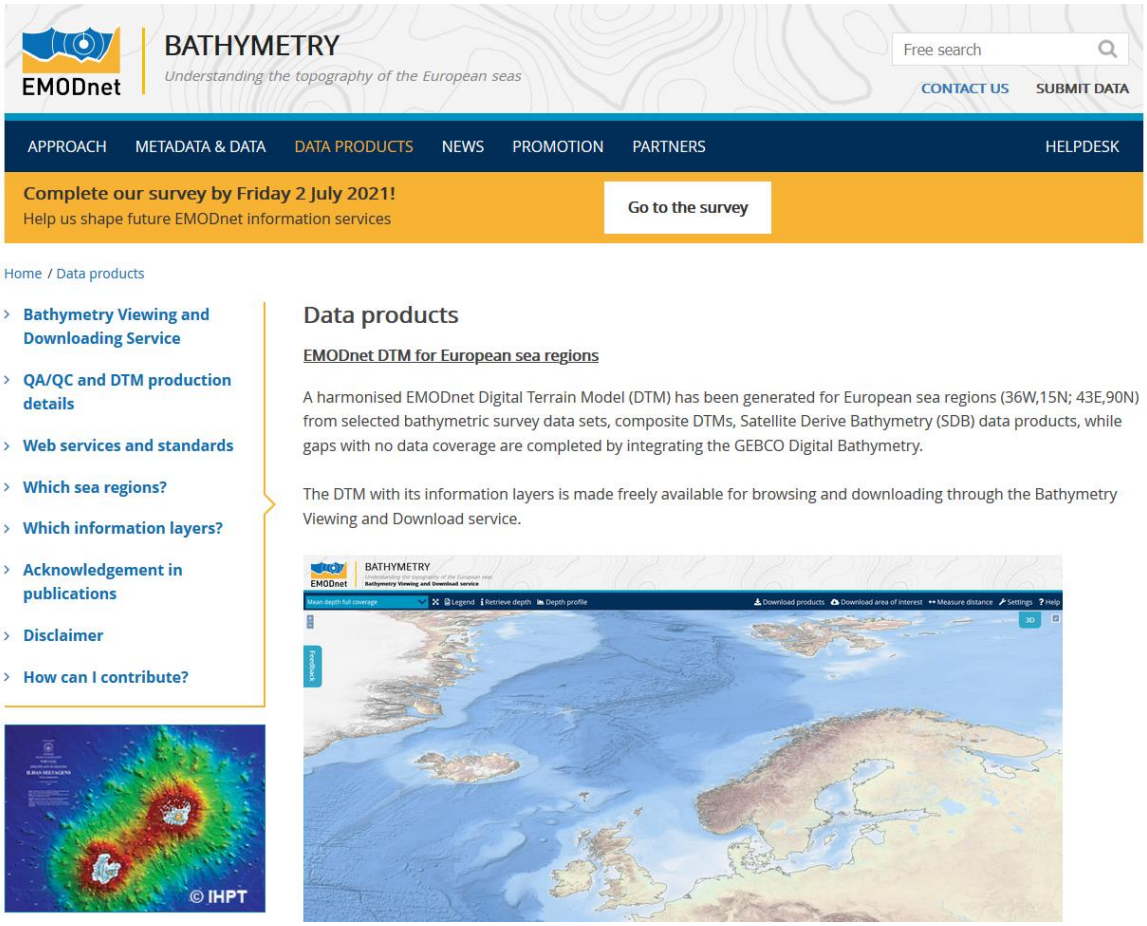
Over the period since the IRCC12 meeting, the activities of the WG have mainly concerned the following contributions.

2.1. EMODNet (http://www.emodnet.eu/)

15 HOs and several research institutes contribute to the European Marine Observation and Data network (EMODnet) Bathymetry.
GEBCO and the EMODnet Bathymetry team work in collaboration so that data"gaps" in the EMODnet grid are filled with data from GEBCO's grid and the EMODnet grid is included in the GEBCO global grid.

EMODnet Bathymetry and the Seabed 2030, aligned with the IHO Strategic Plan 2021-2026, share a MoU with the common aim of improving the bathymetric knowledge and its distribution to all potential users.

The recent EMODnet Open Conference (14-18 June 2021) has shown **the increasing understanding by the stakeholders for the need of qualified and standardized marine data**. The processing by artificial intelligence and the use in maritime policies should be effective if the data are interoperable and of good quality.



As a deliverable of the 3rd phase of the program (2017-2020), an upgraded version of the EMODnet Digital Bathymetry (DTM) for the European Seas was released on the 13th January 2021. With over 33000 individual tiles downloaded in 2020, this bathymetric product is widely used in a whole range of applications, from marine science to sustainable ocean governance and blue economy activities.

This new EMODnet Bathymetry product version benefits from significant developments and expert inputs in 2019-2020, including new data gathering, reprocessed data, thorough selection of the best data sources and use of innovative bathymetric sensors (such as Satellite Derived Bathymetry):

- DTM with 1/16 * 1/16 arc minutes (circa 115 * 115 metres) grid resolution covering all European seas from the Mediterranean Sea, the Black Sea, the North-East Atlantic Ocean, up to the Arctic Ocean and Barents Sea;

- A source reference layer and a quality index layer pointing directly to one of the 16141 bathymetric survey data sets and 120 composite DTMs used;
- Integration of the latest GEBCO and IBCAO grids.

As a deliverable of the 3rd phase also, EMODnet Bathymetry produced and released in 2020 a first edition of its World Base Layer (EBWBL) service, available as OGC WMTS service.
This EBWBL provides a gridded **representation of worldwide bathymetric and topographic coverage** adapted for a better representation of seabed morphological features.
EBWBL combines the General Bathymetric Chart of the Oceans (GEBCO) gridded data and the EMODnet Bathymetry Digital Terrain Model (EMODnet DTM) at the highest resolution as a Web Map Tiles Services (WMTS).

2.2. "Coastal Mapping" project (https://www.emodnet.eu/en/coastal-mapping)
As a reminder, a consortium, led by Shom (FR) with 19 partners from 15 countries, including several HOs, conducted a study, from June 2015 to June 2018, financed by the EC, to identify the existing high resolution bathymetric data and the gaps along the European coastal areas.

A proposal of a Joint European Mapping Programme was prepared and presented to the EC alongside three axes were proposed:
• Axis 1: Set up coordinated programs for data acquisition at maritime basin scale
• Axis 2: Seize opportunities for bathymetric data acquisition in the framework of the EU operational programs and funds, and ensure that those data are standardized and capitalized
• Axis 3: Promote good practices to produce bathymetric data from multiple sources, standardised for re-use by all coastal stakeholders to support maritime policies.

On the occasion of the **EMODnet Open Conference and Jamboree (14-16 June 2021)** it was suggested that the EU take the proposal into account for their new programming period 2021-2027 in development.

2.3. EOOS (http://www.eoos-ocean.eu/)
In coherence with the Coastal Mapping project perspective, the IENWG participates to the coordination of the strategy for EOOS (European Ocean Observation System) and has given inputs **to include hydrography** in the development of the European strategy for acquisition and management of marine data.
Promoted by the European Marine Board and EuroGOOS (the IOC GOOS component for Europe), EOOS is a coordinating framework designed to align and integrate Europe's ocean observing capacity, promote a systematic and collaborative approach **to collecting qualified information on the state and variability of our seas**, and underpin sustainable management of the marine environment and its resources.

The EU strategic orientations are turned to the building of a numerical twin of Earth, twin of the Ocean. The twin will to help to better understand the Ocean evolution and test the consequences of the public policies proposed to mitigate the climate change.

The IENWG has promoted **more standardization** in the EOOS strategy. It has valued in particular the IHO CSB Guidance publication (B-12) within the European scientific community and the industry which collect bathymetric data for their needs.

2.4 Ocean Observation – Sharing Responsibility (https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12539-Ocean-observation-sharing-responsibility_en)

The 11th meeting noted the **strategic consultation "Ocean Observation –Sharing Responsibility**" launched on 20 November by the EC DG MARE.
Since the meeting, IENWG members and beyond European HOs have liaised and responded to the consultation.

2.5 Maritime spatial planning: MSP
Due to the importance of marine data produced by HOs for MSP which is becoming a major topic of interest in Europe (MSP Directive 2014/89/EU), IENWG has joined as observer the EC Member State Expert sub-group on MSP.
Some European HOs (ES, FR, GE, IR, NL, NO) are involved in EU projects to develop relations among neighboring countries for the implementation of the MSP Directive.

One lesson learned is the necessity to develop the coordination between the EU MS for the production and diffusion of interoperable qualified data useful for MSP.

A special work is doing by the EC DG MARE and inside some EU projects as MSP-MED, to transform plans in layers added in the Human Activities portal of EMODnet.

2.6 European Re-use of public sector information Directive
An update on the implementation of the European Directive 2019/1024 of 20 June 2019 on open data and the re-use of public sector information was discussed at the IENWG11 meeting.

The way this directive is implemented may impact the economic models of some European HOs. This may include or not indeed the dissemination for free and without charges of products such as nautical charts. The IENWG members coordinate closely between themselves, and beyond, between all European HOs, on the instruction for the application of the European Directive 2019/1024.

3. Conclusions
The IENWG activities continue to contribute to **the rise of the involvement of HOs** in the European activities and programs. They cover a large spectrum of common interests between the IHO en EU from the support to several maritime users to standardization for marine data exchange.

At the 12th IENWG meeting, the IHO Secretariat commended the involvement of Hydrographic Offices in EU-funded projects. It invited the group to take any opportunity in these projects to promote the IHO S-100 framework.

4. Action Required of IRCC
The IRCC is invited to:

a. note the present report
b. note the range of activities supported by the IENWG
c. take any decision as appropriate.