



***FROM NATIONAL TO REGIONAL LEVEL
MBSHC AMBASSADOR INTO MSDIWG***





REGIONAL LEVEL

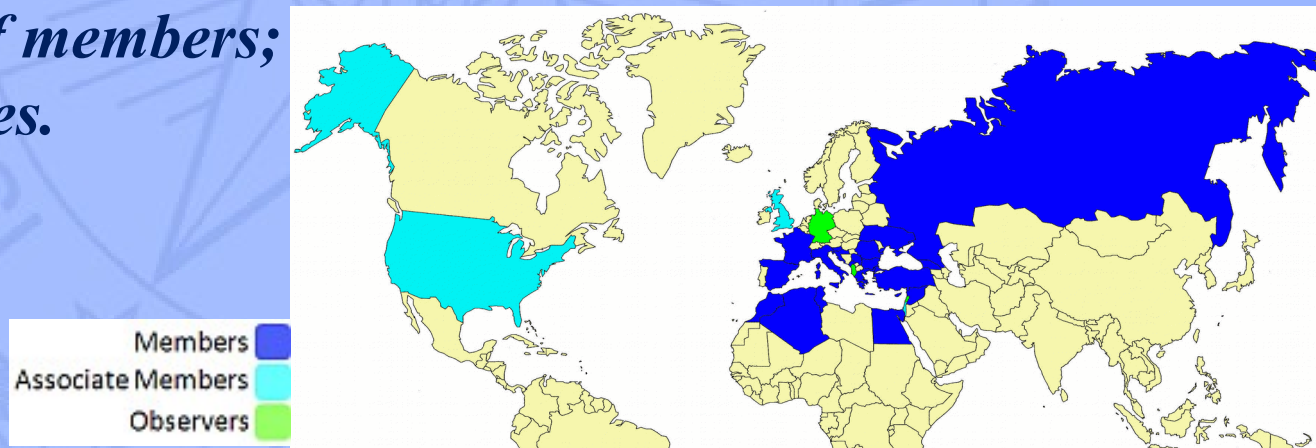
ROLE:

Italy ambassador of MBSHC into MSDIWG (decision MBSHC 20/01)

- Are there other Ambassadors formally nominated?

REGIONAL PRECONDITIONS:

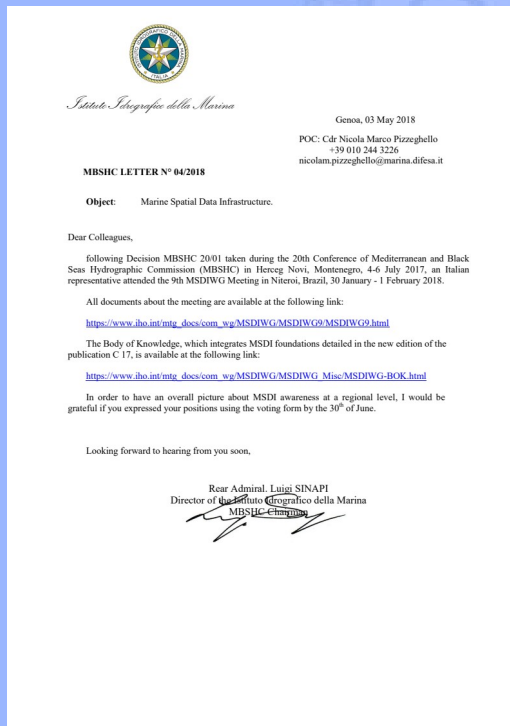
- different types of members;*
- geopolitical issues.*





REGIONAL LEVEL

ACTIONS: - MBSHC CL 04-2018: post 9th MSDIWG feedback and questionnaire



Annex to MBSHC CL 04/2018

03/05/2018

Status Update of Marine Spatial Data Infrastructure (MSDI) Implementations related to a Marine Spatial Architecture

(to be returned to the E-mail: jim.corsi@marina.difesa.it by 30th June 2018)

The intent of the study is to determine the relative level of advancement of various countries of the MBSHC in the development of their MSDI. It also explores what is offered and what can be offered within a given resource framework. This means that the questions are intended to scope the scale of the MSDI resources required in their development.



REGIONAL LEVEL



ACTIONS: - MBSHC CL 09-2018: feedback of the questionnaire



Istituto Idrografico della Marina

Genoa, 12 November 2018

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MBSHC LETTER N° 09/2018

Object: Marine Spatial Data Infrastructure (MSDI)

Reference: MBSHC Letter 04/0-2018 dated 3 May

Dear Colleagues,

a questionnaire on the status of MSDI in the Mediterranean and Black Sea Region was sent with the Letter in reference.

The feedback was evaluated and summarized by Cdr. Pizzeghello – MBSHC Ambassador to MSDIWG, and a Report was produced (see the enclosed document) to take into consideration the different points of view on MSDI within the Region.

As stated in the IHO Strategic Plan, “*improve global coverage, availability and quality of hydrographic data, information, products and services and to facilitate access to such data, information, products and services*” represents one of the objects of the International Hydrographic Organization. Therefore, the development of MSDI at national, regional and global level is one of the ways to obtain such object through a step by step procedure.

The enclosed Report could be considered the first step to increase the MSDI awareness to move towards a common MSDI within the Region.

Kind regards,

Rear Adm. Luigi SINAPI
Director of the Istituto Idrografico della Marina
MBSHC Chairman

QUESTIONNAIRE ABOUT THE STATUS UPDATE OF MARINE SPATIAL DATA INFRASTRUCTURE IMPLEMENTATION

Background
During the 20th meeting of the Mediterranean and Black Sea Hydrographic Commission (MBSHC), it was decided that Italy should represent MSDIWG in the [Marine Spatial Data Infrastructure](#) (MSDI) through an ambassador.

During the MBSHC meeting, held in Milan in January 2018, the Group discussed a possible way to connect the MSDI Marine Spatial Data Infrastructure related level to the MSDI global level through the regional level, which is represented into the IHO Government structure by the Regional Hydrographic Commission (RHC).

Version 2.0 of the IHO publication [“GIS, Spatial Data Infrastructures: The Marine Dimension”](#) (Guidelines for creating MSDI within the national hydrographic context).

Further documents, within the national spatial data infrastructure, can be found at global level in the United Nations Global Geospatial Information Management (UN-Geospatial Information Management). This year, the 49th session of the Committee of Experts of the IHO, CGM, approved the [“Coordinated Strategic Framework of the Integrated Geospatial Information Framework](#), which can be found together with the other meeting documents, at the following link: [http://www.un.org/Depts/los/geospatialinformation/09_session/09_session.html](#)

This year the IHO [Global Geospatial Information Management \(UN-Geospatial Information Management\)](#) was held in Rome. The next MSDIWG meeting will be held in Rome next March, immediately before the final meeting of the UN-Geospatial Information Management. It will be a good opportunity to participate in both face to face meetings of the two working groups.

In order to develop the link between different geographical levels of MSDI (local, national, regional and global), a questionnaire was sent with the [questionnaire](#).

MSDI concept
The National Hydrographic Office (NHO) has traditionally produced high quality hydrographic data and published them through safety of navigation products. The two levels, data and products, have been transferred into a common historical path.

A global trend, arisen during last decades, is promoting the perspective to look at data by an independent point of view, in a national description of facts.

In order to be used, data cannot be just gathered and stored, but they have to be managed through an infrastructure which handles and provides their availability. This infrastructure is commonly defined [“Spatial Data Infrastructure”](#) (SDI). SDI is defined in the [Spatial Data Infrastructure Guidelines](#) as “*an open layered base consisting of technologies, policies and institutional arrangements that facilitate the availability of and access to spatial data*”.

SDI can be transferred into geographic data, linking the data to a unique thread in a Global ID can be addressed in order to study its spatial state and behavior. The global state can be reached by introducing through metadata a user in a particular situation of a repository

small portion of the Planet. The global level is then divided into different smaller levels, oriented either to geographical position (e.g. regional level, national level, local level) or to environmental position (e.g. land domain, marine domain).
The already mentioned publication [“GIS, Spatial Data Infrastructures: The Marine Dimension”](#) contains a suggested path to address MSDI from a national perspective, showing an evolution of MSDI to MSDIWG in terms to connect MSDI through different geographical levels from national, global level through the regional level.
Both the IHO and UN-Geospatial Information Management (UN-Geospatial Information Management) have regional bodies. On the one hand the IHO has a Marine focused approach. On the other hand the UN-Geospatial Information Management has a more general approach. The two bodies are the marine domain and the national level respectively. It will be possible to participate in the Commission around a portion of the sea, or, on the other hand, the UN-Geospatial Information Management will be able to address the geographical context, within a land domain perspective. The result is that IHO and UN-Geospatial Information Management have different geographical objectives.
The basis of the MSDI concept are explained in the IHO 21 by two pictures, one about data and their their spatial form information, the other about the four MSDI pillars.
Really, it explained measuring data, and the level of data is separated from the level of information information. Information derived from data but it is considered data. Spatial information information delivered by NHOs are those contained in the National Charts (Both paper charts and digital).

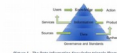


FIGURE 1 - The information knowledge through from 12 of page 10

MSDI is composed of four pillars. Here it is added a word in brackets after every pillar to better explain each address.
Data (NAT) is only one pillar, because it is managed through standards (HOW), which allow interoperability of data, information and communication technologies (TECH), which allow sharing of data, policy and government (HOW), which allow to change MSDI into a value-added activity.



FIGURE 2 - The four pillars of MSDI from 12 of page 10

Feedback from Questionnaires

MBSHC is composed of twenty-two Members, four Associate Members and seven Observers. With MBSHC CL 2018/4 Customers are MSDIWG was distributed to MBSHC Members.

Four Members and one Associate Member replied to the CL, sending back the Questionnaire fully completed. Three Members and one Observer replied via e-mail explaining the position on MSDI.

All replies opened to the application of MSDI to different topics related to the sea, even far away from the traditional safety of navigation aim. Feedback underlines recent developments in the use of the sea, where MSDI can play a leading role. They are, for example, Marine Energy, Marine Spatial Planning and Ocean Governance.

Feedback is more focused on Standards, IHO standards, with particular focus on the transition from 5.87 to 5.300 world, are today complemented by Open Geospatial Consortium (OGC) standards, especially in web-based infrastructures. The Infrastructure for Spatial Information in Europe (INSPIRE), an European Union (EU) initiative, is also used by some of the actors involved.

From a geographical perspective, feedback was received from across Europe and outside the Mediterranean and Black Sea Region.

MSDI initiatives mentioned in the feedback are either internal to the IHO (e.g. the IHO task to lead MSDIWG), or referred to National SDI (INSPIRE), or linked to regional SDI (e.g. the EU initiative INSPIRE) and the European Marine Observation and Data Network (EMODnet), or related to national MSDI activities (e.g. RENC MSDI).

Particular attention was focused on important topics: NHOs data has been traditionally gathered using specific rules. The use of data for safety navigation products is well known, while a different use of data needs to be better regulated. The use of authoritative data is also one of the topics of the feedback.

Costs of MSDI, especially those associated with web infrastructures and IT infrastructures, were particularly raised. These costs are today covered by NHOs internal funding, but the actors involved in MSDI, national funding (even from a framework which defines the MSDI and regional funding (e.g. EU) is funding an MSDI initiative through a project). The difference between the cost to maintain the infrastructure and the cost to create the service (e.g. reply to a specific request of data and propose them) is one of the topics of the feedback. The topic open upon the data is also mentioned.

Finally, feedback tends to keep well separated the safety of navigation topic from all the other topics.

Key elements

Feedback, as explained above, can be connected to MSDI pillars, as highlighted in the paragraph.

- **Data (NAT)**
Looking at the data information-knowledge triangle, products (such as NHO or Paper Charts) are consistently separated from data, and MSDI activities can be managed on a different level with reference to the products.

Focusing on which level of data an actor can manage and share, a list of them can be found in the IHO 21. During the last IHO global meeting, a minimum list of global fundamental geospatial data themes was endorsed and it is available on UN-Geospatial Information Management website at the following link: [http://www.un.org/Depts/los/geospatialinformation/09_session/09_session.html](#)

For example, IHO can be involved in Global Geospatial Reference Frame of Sea, Elevation and Depth, Functional Areas at sea, Geographical Names at sea and in the coastal zone, Geology and Soils, Physical Infrastructures at Sea, Transport Networks and Water.

The role of authoritative, secure, free data at the centre of a strong database. There is no doubt that the use of data represents a future opportunity to develop and change the traditional role of NHO.

The way to share data through a Spatial Data Infrastructure is a key factor for interoperability. As shown from the feedback, different organizations are involved in creating and producing standards. These organizations are today connected and they work together, such as in the case of IHO, SDI and OGC are active at a global level. MSDIWG connects the standards into a unique MSDI framework, at the meeting of the OGC Marine Domain WG usually held immediately after the MSDIWG meeting.

Different documents, shared within all the communities, were prepared to explain the importance of the work of standards. The updated documents are available at the following link: [http://www.un.org/Depts/los/geospatialinformation/09_session/09_session.html](#)

- **Standards (HOW)**
- [Guidelines for the use of Standards in Geospatial Information Management](#)
- [Common Document on Database Interoperability in the Sea](#)
- [Infrastructure and standards of products in the public government information systems](#)

The development of the 5.300 framework is the main challenge, and the possibility to be inclusive to national standards will be one of the main key drivers for the success of the project.

Information Systems (NAT)

The availability of data can be realized using technologic infrastructures. On the one hand, building up a web-based infrastructure is becoming accessible in many countries, on the other hand what is focused in the feedback is the cost of creating and access of maintaining it.

It is necessary to evaluate that this pillar is not only connected with the information technology, but also with the communication technology, which makes the infrastructure able to link to external stakeholders in a secure way.

- **Policy and Governance (HOW)**
In the feedback it is well understood that MSDI is strongly connected to different strategic activities of the actors involved which are, for instance, the way they choose to present their products to external stakeholders, the way to link their activities to the national ones, the way to share data.
Concepts, funding and pricing are key factors for MSDI policy. A useful compendium on funding of geospatial information has been prepared by UN-Geospatial Information Management and endorsed during the latest UN-Geospatial Information Management Meeting. The compendium is available at the following link: [http://www.un.org/Depts/los/geospatialinformation/09_session/09_session.html](#)



REGIONAL LEVEL

QUESTIONNAIRE OUTCOMES:

- *feedback by questionnaire or e-mail*
- *beyond safety of navigation*
- *standards (OGC, IHO, EU)*
- *HOs (internal) MSDI,*
- *connections with NSDI, Regional SDI (INSPIRE, EMODNET)*
- *role of authoritative data, open data, free data*
- *cost of the infrastructure and the connected services*
- *copyright, licencing, responsibility (legal framework)*





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QUESTIONNAIRE FEEDBACK

- Pillars and Data Information Knowledge triangle*
- Connections with UN GGIM*





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Future :

- MSDI presentation during 21th MBSHC (June 2019)***
- Role of ambassadors into the RHCs (other WGs mention them)***
- Connections with UN GGIM and IOC***

