



IHB File N° TA 005-1

**CIRCULAR LETTER 97/2012  
15 November 2012**

**COOPERATION BETWEEN THE  
IHO AND THE EUROPEAN COMMISSION**

Reference: IHO CL 87/2012 dated 21 September 2012 - *Memorandum of Understanding between the IHO and the European Commission*

Dear Hydrographer,

1. IHO Circular Letter 87/2012 announced the implementation of a Memorandum of Understanding (MOU) on maritime affairs between the IHO and the European Commission (EC). The first meeting between the IHO and the EC took place on 10 October 2012 in Brussels, Belgium.

2. The meeting was hosted by the Directorate-General for Maritime Affairs and Fisheries (DG Mare) and was attended by representatives from the European Commission (DG Mare, DG Mobility and Transport, DG Environment, DG Enterprise and Industry, DG Regional Policy), eight representatives from IHO Member States (France, Germany, Norway, Sweden, United Kingdom) and Director Gilles Bessero representing the IHO secretariat.

3. After a round of presentations, the meeting reviewed the progress of the European Marine Observation and Data Network (EMODNET) and other regional and national projects of mutual interest (such as Baltic Sea Bathymetric Database, MonaLisa, Bringing Sea and Land Together, Litto3D). The recently published Green Paper on "Marine Knowledge 2020"<sup>1</sup> was introduced by DG Mare and the IHO Member State representatives and the IHB provided their initial comments. The respective role of Hydrographic Offices, industry and other stakeholders was discussed.

4. The suggestion offered by Mexico, in response to CL87/2012, that the maritime areas of interest to European shipping outside the European Union (EU) should be considered, was acknowledged.

5. The way forward in implementing the MOU between the IHO and the EU was discussed, taking into account the IHO Work Programme and the responsibilities of the relevant Regional Hydrographic Commissions (RHCs). It was agreed to draft a roadmap based on the work of the North Sea Hydrographic Commission (NSHC) and on items which have emerged from the meeting. The next phase of work will focus on coordinating the response of the IHO to the Green Paper and facilitating mutual participation at relevant IHO and EC activities. A workshop on the results of the Green Paper was tentatively planned in March 2013, followed by a second formal IHO-EC meeting close to World Hydrography Day 2013.

6. Further details can be found in the report attached in Annex A and at <https://webgate.ec.europa.eu/maritimeforum/content/2987>.

7. The consultation process on "Marine Knowledge 2020" is open until 15 December 2012 at [http://ec.europa.eu/dgs/maritimeaffairs\\_fisheries/consultations/marine-knowledge-2020/index\\_en.htm](http://ec.europa.eu/dgs/maritimeaffairs_fisheries/consultations/marine-knowledge-2020/index_en.htm). In order to provide the European Commission with harmonized views that at the same time reflect the full range of national circumstances, it is proposed to respond to the questionnaire at three different levels:

- national level: responses of individual HOs, directly and/or through their national EU focal point,
- regional level: responses aggregated by the RHCs concerned,
- IHO corporate level: responses aggregated by the Directing Committee.

Inputs from both EU and non-EU Member States are welcome.

<sup>1</sup> [http://ec.europa.eu/maritimeaffairs/policy/marine\\_knowledge\\_2020/documents/com\\_2012\\_473\\_en.pdf](http://ec.europa.eu/maritimeaffairs/policy/marine_knowledge_2020/documents/com_2012_473_en.pdf)

8. The Directing Committee encourages IHO Member States and RHC Chairs to provide individual submissions as appropriate.

9. In addition, a draft response that represents the IHO corporate input taking into account the outcome of the IHO-EC meeting is attached in Annex B. IHO Member States are invited to review this draft and to provide their comments to the Directing Committee at their earliest convenience and **no later than 7 December 2012**.

On behalf of the Directing Committee  
Yours sincerely,



Gilles BESSERO  
Director

**Copy to:**  
Chair of EUM2WG

**Annexes:**

A. Report of the 1<sup>st</sup> Meeting between the IHO and the European Commission under the aegis of the MoU signed on 23 April 2012 (*in English only*).

B. Draft IHO response to the EC Green Paper on Marine Knowledge 2020 (*in English only*).

## **First meeting between the International Hydrographic Organization and the European Commission under the aegis of the MoU signed on 23 April 2012**

### **Participants & Welcoming Address**

This was the first meeting between the International Hydrographic Organization (IHO) and the European Commission (EC) under the aegis of the Memorandum of Understanding (MoU) signed on 23 April 2012. It was attended by:

- Matthew King, DG Mare, C1 (Maritime Policy, Atlantic, outermost regions and Arctic),
- Michele Avino, DG Move,
- David Connor, DG Env,
- Christina Lopez, DG Mare, C7 (EMODnet expert),
- Torsten Riedlinger, DG Entr,
- Iain Shepherd, DG Mare,
- Martin Zeittler, DG Regio,
- Gilles Bessero, International Hydrographic Bureau (IHB), Director,
- Paul Canham, Hydrographic Office (HO) of United Kingdom,
- Bruno Frachon, HO of France, Director General,
- Thibaud Genty, HO of France,
- Yves Guillam, HO of France,
- Gerhard Heggebo, HO of Norway,
- Mathias Jonas, HO of Germany, National Hydrographer
- Yves-Henri Renhas, HO of France.
- Magnus Wallhagen, HO of Sweden.

Matthew King welcomed the participants on behalf of DG-MARE. As it was the first meeting, everybody introduced himself and the draft agenda was adopted.

### **Introduction, background and objectives**

For the benefit of the representatives of the different Directorates-General (DG) of the European Commission, Yves Guillam presented the background from the acknowledgment within the North Sea Hydrographic Commission of the importance of EU marine and maritime policies in 2007 to the signature of a Memorandum of Understanding between the IHO and the EC in April 2012. Amongst 14 Regional Hydrographic Commissions, 6 of them involve EU sea areas. Then the group agreed on the objectives for the meeting (mutual knowledge, priorities in the IHO and HOs programmes of work, business models, EU priorities on Marine Knowledge, etc.).

### **Results from the first phase of the European Marine Observation and Data Network: the second phase of EMODnet**

Iain Shepherd presented the background and some results of EMODnet and introduced the way ahead. He pointed out the contrast between the response of a homogenous consortium of national geological survey organizations to provide the geological layer and the response of a heterogeneous

mixture of HOs, research institutes and private companies, in which the concerned nations are not all represented, to provide the hydrographic layer. He emphasized the potential contribution of blue growth to the overall growth in EU and the need of marine knowledge in supporting this growth. Construction of a (1/8') gridded digital terrain model covering all European waters has started and will be available in 2014. Lower resolution data from sources such as GEBCO will fill in the areas where higher resolution survey data are not available.

## **Baltic Sea Data Base and MonaLisa e-navigation projects**

Magnus Wallhagen presented both of these projects. The Baltic Sea is surrounded by 9 coastal States which cooperate on hydrographic matters through the Baltic Sea Hydrographic Commission. This is a good example of the coordination role of Regional Hydrographic Commissions (RHCs) in assessing the state of knowledge, assessing the needs, and programming new surveys. Through the MonaLisa project HOs are also involved in e-navigation developments.

## **Bringing Land and Sea together (BLAST project)**

Gerhard Heggebo presented the BLAST project. This was a regional project funded by EU under the IVB North Sea Region Programme, focusing on better integration of information in the region. One part of it consists of the creation of marine and coastal base reference information. Three other main activities looked into ENC harmonisation, maritime traffic harmonisation and climate change in the coastal zone.

## **Litto3D® project (French national coastal mapping program)**

Yves Guillaum presented the Litto3D® project which uses Lidar to make topographic and bathymetric measurements along the coast. The results of the project run by IGN and SHOM have many applications for coastal zone management and particularly for assessment of submersion risks. 3 DVDs with data under Open Licence covering Cassis-Hyères-Porquerolles in the South of France were delivered to the EC (DG Mare).

## **Green Paper, consultation and further intentions**

Under this item, Iain Shepherd made a presentation (EMODnet, phase 3). Together with GMES, this is the main project which will be carried out in the frame of Marine Knowledge 2020 and this is the one for which HOs can provide the best support. The move towards high resolution starts with the Green Paper on Marine Knowledge which raises several issues regarding EMODnet. In his presentation, Iain Shepherd highlighted some of them.

The consultation will end on 15<sup>th</sup> December 2012. Implementation of Marine Knowledge 2020 will depend on the budget envelope for the European Maritime and Fisheries Fund (EMFF). DG Mare will also launch a study (Marine Knowledge Impact Assessment) to evaluate options for the main issues which include governance and private sector involvement. DG Mare welcomes inputs on how the objectives could be reached.

6% of EMFF might be devoted to supporting Integrated Maritime Policy, out of which half could be for Marine Knowledge. This option will be submitted by the Commission to the approval of the Council and to the Parliament. If it is approved, the amount for Marine Knowledge might reach €30M per year during 2014-2020 financial framework.

## **Initial comments from HOs on the Green Paper**

There are some mutual expectations from EC and from HOs on the Marine Knowledge Green Paper. Initial comments from HOs on the Green Paper, and reactions from DG Mare on these comments helped in improving mutual knowledge and outlining the way ahead. In addition to France HO's initial views (see slides), the 4 other HOs represented (Germany, Norway, Sweden and United Kingdom) and the IHB representative shared their first impressions.

Yves-Henri Renhas presented the slides to be used as “food for thought”. 10 out of the 22 questions raised in the Green Paper were selected due to their relevance on HOs matters and responsibilities. Participants gave their initial views on the different questions, and it is intended to respond to the questionnaire at different level; national official level, each HO, the IHO NSHC EUM2WG, and possibly the IHO corporate view through the IHB.

- **Question 1 Are there any reasons why there should be exceptions, other than those related to personal privacy, to the Commission’s policy of making marine data freely available and interoperable?**

Regarding the free availability of the data, HOs have different business models in Europe, but most of them are more or less requested by their governments to generate some revenues as it is part of their economic model. In most of them those revenues are a small but yet necessary part of their overall budgets.

DG-MARE remarked that their studies indicate that few organisations generate significant revenue from raw data and that by opening the market they would allow other operators to generate new products.

There is also some variety in data classification policies.

- **Question 2 How can Member States ensure that the data they hold are safely stored, available, and interoperable?**

HOs are responsible for the accuracy of the charts. In case of an accident they must be able to demonstrate that all the data have been processed in compliance with the standards. DG Mare acknowledges experience, expertise and reliability of HOs for marine knowledge data and is willing to recognize them as responsible for the bathymetric data.

The research community is not only interested in the current state of the ocean but also the past. MARE said that old surveys cannot be repeated and need to be kept safely.

- **Question 10 What should be the focus of EU support to new marine observation technologies? How can we extend ocean monitoring and its cost effectiveness? How can the EU strengthen its scientific and industrial position in this area?**

HOs are both experts and users in marine observation systems. However they don't have enough people and money to performing all research and innovation they need. They could make inputs in Horizon 2020 research and innovation framework to precise which research and innovation program they commonly need for their marine observation systems. Furthermore, if acquisition of one innovative observation system exceed the needs (and the budget) of one sole Member State, EC might support a common acquisition.

MARE asked the HOs to be specific as to what technologies they thought could help – underwater vehicles for instance.

- **Question 13 What information on the behaviour of our seas and coasts can best help business and public authorities adapt to climate change?**

The question has been asked by DG MARE, but DG ENV and DG CLIMA are also interested. Member States need to adapt to climate change but scientists are unable to tell them on a local scale what will happen in the future. From some point of view, when decision should be taken, the issue is « what is the uncertainty (in sea-level rise) ». Reductions in uncertainty can save money. On the other hand, Member States which have expertise in evaluating risks of submersion could help others for which risks exist and which have less expertise (in a frame which DG Env might define).

In addition to the type of data and modelling which are mentioned on the slide, one should also consider sedimentation/erosion/transport of sediment modelling.

- **Question 14 Are any additional measures required, over and above existing initiatives such as EMODnet and GMES, to enable Europe to support international initiatives on ocean data such as GOOS and GEOSS?**

One should not forget GEMCO (EMODnet contributes to GEMCO and GEMCO contributes to EMODnet).

- **Question 15 What criteria should be used to determine EU financial support of observation programmes other than those that it already supports? Can you provide examples? Could the Joint Programming Initiative for European Seas and Oceans play a role?**

When considering inside EU trade shipping as well as overseas EU trade shipping, some sea basin area are of EU importance (not just national importance).

The Commission invites HOs to provide specific examples of the particular geographical areas concerned.

Costs/benefits balance of observation programmes should be made. One should emphasize that surveys must be made in compliance with IHO S-44 standards.

- **Question 16 How could the governance of EMODnet and GMES evolve to better accommodate the need for long term sustainability?**

We should establish a long-term link (both technical and administrative) between EC and IHO. Mathias Jonas emphasizes that processing the data is a complex operation when data are collected at different epochs and with different observation systems. HOs do have experience in these matters.

The Commission indicated that the present procedure of three-year contracts awarded after calls for tender was relatively efficient but further savings in administration could be envisaged. However, the Commission must work within the rules of the Financial Regulation when awarding contracts.

- **Question 18 Is a regular process needed to evaluate the effectiveness of the observation and sampling strategy for each sea-basin?**

There is an overall agreement on the comments. The Baltic Sea is a very good example of regional coordination.

The Commission informed IHO that, starting next year, two pilot projects will begin looking at this question – one for the Mediterranean and one for the North Sea. The Commission agreed that the needs of shipping had been somewhat overlooked in the Green Paper on the assumption that the shipping industry was relatively happy with their nautical charts. However, the hydrographic offices said that this was not necessarily the case. There are still some areas where better charts would improve the efficiency of the shipping industry. The Commission invited the HOs to give more details on this issue in their written submission.

- **Question 19 What mechanism could be envisaged to manage the evaluation and assessments needed to inform the Commission, Member States and Parliament on priorities for EU support?**

There is an overall agreement on the comments.

## **Quick review of the IHO program of work (only tasks that are of interest for the EU).**

Gilles Bessero presented the structure and contents of the IHO Work Programme. He showed that EC concerns were addressed by existing elements of the Work Programme and indicated that RHCs should be considered as the IHO operational entrance points for responding to EC requirements.

## **Identification of items of common interest, discussion.**

No formal review of items of common interest was made. However, some conclusions have been agreed.

### **1. EC notes that shipping needs to be taken into account as a stakeholder in Marine Knowledge.**

**2. Due to the characteristics of survey data, open access to raw data cannot be taken for granted.**

3. HOs will invite DG Mare to take part to the meetings of the Regional Hydrographic Commissions.

4. DG Mare will invite the IHO to the technical meetings regarding Marine Knowledge.

5. A roadmap should be drafted by HOs and DG Mare in order to improve mutual knowledge.

This roadmap might include items from the conclusions of the 30<sup>th</sup> NSHC Conference and items which have emerged from the discussion on the Green Paper such as:

- governance (slide 11 of « EMODnet phase 3 » and question 16),
- coordination amongst HOs for business models and classification policies (question 1),
- responsibility for bathymetric data (question 2),
- inputs to Horizon 2020 (question 10),
- dissemination of expertise in assessing risks of submersion (question 13),
- examples of sea areas of EU importance (question 15),
- managing marine knowledge for a sea basin (question 18),
- managing a program of marine knowledge acquisition and reporting on the program (question 19).

### **Draft roadmap and milestones.**

FR will prepare a draft roadmap by the end of the year 2012 to be discussed within the IHO and then submitted to DG Mare for its consideration. HOs will respond to the Green Paper's consultation (deadline 15<sup>th</sup> of December).

The next meeting is foreseen in March 2013. Another one will be on the occasion of the World Hydrography Day (21 June 2013).

**Draft IHO Response to the European Commission Green Paper on Marine Knowledge 2020**

**Note: the questions to be answered are in bold characters.**

**(1) Are there any reasons why there should be exceptions, other than those related to personal privacy, to the Commission's policy of making marine data freely available and interoperable?\***

The IHO promotes the interoperability of marine data through standardization.

Conditions of access are a matter of national policy and may vary from country to country.

The following reasons may be incompatible with free availability of data:

- national security concerns,
- rights of third parties (re-use of data not collected under the authority of HOs<sup>2</sup>), and
- business models requiring HOs to generate direct revenues from the distribution of their products rather than rely on government subsidies only to cover their costs.

**(2) How can Member States ensure that the data they hold are safely stored, available, and interoperable? Is a certification process necessary? Should there be a body at national level responsible? Can you provide examples of good practice?**

At any moment, particularly in the case of a shipping incident, HOs must be in a position to provide governments with evidence that they have conducted surveys or processed nautical information in a legally defensible and reasonable manner. Therefore HOs have a long experience of ensuring that the data from which nautical charts are derived are collected, processed, stored and remain accessible in the long term, based on IHO standards and recommendations. A number of HOs have undertaken to be ISO-9001 certified and the IHO recommends that a certified quality management system be in place for the production and maintenance of Electronic Navigational Charts. The IHO considers that the designation of national thematic focal points is a good practice and recommends that HOs be responsible for bathymetric data at the national level. The IHO maintains a world-wide level of coordination for oceanic bathymetry through the IHO Data Center for Digital Bathymetry and its co-sponsorship and management, with UNESCO-IOC, of the GEBCO programme.

The use of IHO-standards for hydrographic data by Member States ensures data interoperability. This requirement is well reflected in the new series of standards which are being developed under the overarching standard S-100 "IHO Universal Hydrographic Data Model".

**(3) Are the seven thematic groups<sup>3</sup> of the European Marine Observation and Data Network the most appropriate? Should some be combined? (e.g. geology and hydrography) or should some be divided?**

The IHO is not aware of any impediments associated with the current series of themes. The IHO supports the continuation of a theme devoted to hydrography in order to continue benefiting from the long-standing IHO cooperation, organization and standardization associated with this theme.

**(4) What should be the balance in EMODnet between providing access to raw data and developing digital map layers derived from the raw data across sea basins?**

The characteristics of hydrographic surveys preclude open access to the raw data due to the volume and the complexity of the parameters involved. The development of standardized products (including high resolution digital terrain models when applicable) should be preferred.

**(5) Should a common platform be set up to deliver products from both GMES and EMODnet?**

The IHO offers no opinion on this question.

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<sup>2</sup> Including current bilateral arrangements between HOs under IHO resolution number 7/1919 as amended.

<sup>3</sup> hydrography, geology, physics, chemistry, biology, physical habitats and human activities.

**(6) Should the GMES marine products and service also be tailored for use by those studying climate change and environmental protection as well as those needing a near-real-time operational service?**

The IHO offers no opinion on this question.

**(7) Should data that are assembled under the Data Collection Framework for a particular purpose such as a fish stock assessment be available for re-use without the requirement to obtain authorization from the original providers of these data?**

The IHO recommends that the conditions<sup>4</sup> of use (and potential re-use) be defined in advance. Re-use not covered by the agreed conditions should be subject to authorization from the original providers of the data.

**(8) Should an internet portal similar to those for EMODnet be set up to provide access to fisheries data held by Member States, as well as data assembled for particular stocks, particular fleet segments or particular fishing areas? If so, how should it be linked to EMODnet?**

The IHO offers no opinion on this question.

**(9) Should control data, such as that derived from the Vessel Monitoring System that tracks fishing vessels, be made more available?**

The IHO offers no opinion on this question.

**(10) What should be the focus of EU support to new marine observation technologies? How can we extend ocean monitoring and its cost effectiveness? How can the EU strengthen its scientific and industrial position in this area?**

HOs are both users of and experts in marine observation technologies.

The IHO has identified a pressing need to improve the rate of acquisition of new, more detailed and accurate data and information in order to meet the needs of accurate hydrographic data and information for safety at sea, protection of the marine environment and various other maritime activities including sustainable economic development. Coordinated research and development activities concerning remote sensing (including lidar and hyper-spectral technology), unmanned underwater or surface survey vehicles, and modeling of sea-bottom changes would all be helpful.

Systematic prioritized survey plans at the regional (basin) level based on meeting end-user needs and using available assets could improve cost-effectiveness. The re-survey strategies developed in the Baltic Sea and in the Strait of Dover are examples of good practice.

**(11) Should there be an obligation for research projects to include a provision ensuring the archiving and access to observations collected during the research project?**

The IHO supports such an obligation. It is standard practice for government sponsored hydrographic surveys intended primarily for charting purposes.

**(12) Should the ‘push’ process whereby marine environment reports are delivered be progressively replaced by a ‘pull’ process, whereby data are made available through the internet and harvested by the competent authority using technology developed through EMODnet?**

The specific nature of bathymetric data and its impact on safety of navigation justifies maintaining a balance between the “push” process (notably relevant for the provision of Maritime Safety Information to mariners) and the “pull” process (relevant for access to standard nautical products and services).

**(13) What information on the behaviour of our seas and coasts can best help business and public authorities adapt to climate change? Is it local sea-level, water temperature, alien species? Where is it most important? Coast, Seabed, open sea?**

The IHO and HOs are primarily concerned with risks of coastal submersion.

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<sup>4</sup> Domain of validity, restrictions of use, resolution, accuracy, financial conditions.

The availability of high resolution bathymetry is essential to model the impact of rising sea level caused by climate change as well as by accidental events such as storm surges or tsunamis. Long term tide observations are required, in conjunction with satellite altimetry, to assess trends in sea level changes.

Other factors such as tidal streams, currents, waves and the nature of the seafloor and of the shore have a major influence on the evolution of the coastline. Progress in modeling sedimentation, erosion and transport of sediment is also important.

**(14) Are any additional measures required, over and above existing initiatives such as EMODnet and GMES, to enable Europe to support international initiatives on ocean data such as GOOS and GEOSS?**

Initiatives such as GOOS and GEOSS require funding commitment and robust governance arrangements in order to set up and operate such long term observation programmes. At the same time, the outputs should be regularly assessed in terms of adequacy and relevance to users' requirements. There is a need to ensure coherence between the national, regional and global levels and to improve coordination with ocean mapping projects such as GEBCO and associated regional projects.

The importance of hydrography as a "foundation layer" and the need to improve survey data coverage (see response to question (10)) should be better taken into account in observation and modeling strategies.

**(15) What criteria should be used to determine EU financial support of observation programmes other than those that it already supports? Can you provide examples? Could the Joint Programming Initiative for European Seas and Oceans play a role?**

EU financial support should not be limited only to programmes within European waters. Observation programmes should at least be considered at the basin level (i.e. Mediterranean Sea, Atlantic Ocean). In relation to safety of navigation and the interests of European shipping, poorly surveyed areas such as the Caribbean Sea, the western and eastern coasts of Africa and the Polar Regions should be taken into account.

The Joint Programming Initiative could play a role in developing joint research programmes mentioned in the response to question (10).

In the EU, and in other areas of interest, there is also a need for surveys and re-surveys (compliant with IHO standards) in shallow water areas where there are changes in shipping use or changes to the seafloor (see also response to question (23)).

**(16) How could the governance of EMODnet and GMES evolve to better accommodate the need for long term sustainability?**

The need for long term sustainability requires evolving from a project approach to an operational approach associated with long term budgetary commitment. In return, the products and services should be assessed regularly to ensure that they always meet the users' needs. Basic products and services associated with liability issues (such as: nautical charts, tidal predictions, etc.) should be provided under the appropriate government authority. They should be distinguished from value added services open for competition.

**(17) What could be the role of the Joint Research Centre and the European Environment Agency?**

The IHO offers no opinion on this question.

**(18) Is a regular process needed to evaluate the effectiveness of the observation and sampling strategy for each sea-basin?**

Each sea basin has its own characteristics including hydrographic conditions and usages of the sea and the capacity of States to make observations. This, in turn, requires specific marine knowledge strategies and products. The IHO believes that a regular process is needed to evaluate the effectiveness of such strategies and products and that the process should be tuned to the local conditions. The Regional Hydrographic Commissions already coordinate the long term assessment and management of hydrographic knowledge in their region. The work of the Baltic Sea Hydrographic Commission is a good example of the relevance of regional coordination.

**(19) What mechanism could be envisaged to manage the evaluation and assessments needed to inform the Commission, Member States and Parliament on priorities for EU support?**

A mechanism should be set up to monitor the users' needs, the state of knowledge, the quality of the products available and the progress made versus the resources allocated. The Regional Hydrographic Commissions could contribute to such a mechanism. The EU could benefit from the current IHO corporate infrastructure.

**(20) Should data provided by private companies for licencing purposes be made publicly available?**

Bathymetric data, particularly any that has navigational safety significance, collected for any purpose should be made available to the relevant HO.

**(21) Should licenced offshore private sector actors be obliged to contribute to wider monitoring of the sea where this is feasible?**

See answer to question (20).

**(22) What public-private partnership models can maximise incentives for industry to share data and investments in data as well as benefits to all stakeholders?**

Regulatory or basic services such as hydrographic services should not rely on private initiatives.

**(23) You have now finished the questionnaire but there may be some other points that you wish to raise. This is your opportunity. You may even append a document.**

The Green Paper does not identify shipping needs as a driver for improving marine knowledge. Both in European waters and in other areas of interest for European shipping, the quality of survey data is not yet sufficient to ensure the safety of navigation, particularly outside the main shipping lanes or for extremely large vessels. Further details are available in IHO Publication C-55 – Status of hydrographic surveying and nautical charting worldwide<sup>5</sup>. The IHO strongly recommends acknowledging shipping as a significant stakeholder in marine knowledge issues.

The IHO suggests that the European Union should consider if and how it can contribute to improving marine knowledge at the global level, taking into account its interests in global maritime communications and trade and the interconnected nature of the world seas and oceans and the worldwide dimension of European strategic and commercial interests (see also the response to question (15)). Contributing to raising awareness and capacity building should be part of the Marine Knowledge programme.

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<sup>5</sup> [http://www.iho.int/iho\\_pubs/CB/C-55/C-55\\_Eng.htm](http://www.iho.int/iho_pubs/CB/C-55/C-55_Eng.htm).