Toward's an EU Strategy for Coastal Mapping

Mr **Ricardo SERRÃO SANTOS**, MEP, Vice-Chair of the Intergroup explained that coastal mapping is not a new issue, but a very important one. It is a very important tool. We are creating more impact on our coasts and seas, which is why it is so vital that we have good knowledge of what is there. The role of EMODNet is very significant. We have highly diverse centres and they do not always communicate amongst themselves. If we think about better knowledge of the topology of our seas and oceans and of our habitats, we will contribute to the better protection of our coasts, especially in terms of climate change and rising sea levels.

Mr **Bernhard FRIESS**, Director, Directorate A Maritime Policy and Blue Economy, Directorate General for Maritime Affairs and Fisheries, acknowledged that data is hugely important for everything, especially in the sea, where virtually all economic activities depend on the knowledge we have of them and on data and the availability of that data. The blue economy effects the coastal territories but also the inland single market. Lots of activities are competing for space at the coast. Those who want to conduct business and public bodies that want to regulate these activities and consider the environmental impact, need data and maps to determine how such activities effect the unique and valuable ecosystems that are found on the coast. The EU and EC has been doing what it can to help. Before working on EMODnet, marine data was held by individual state agencies that kept their own maps, navigational charts mostly only for sea navigation. People are now understanding that sharing benefits everyone, that open source enhances progress. It has not been easy but data has now been made more accessible. It is much more complicated to stitch together a map from individual data sources. It takes skill and patience to be accurate. Our work has helped improve the protection of coastal communities and those working on offshore platforms. There are still many areas not yet surveyed, especially coastal areas, as it is astonishingly more expensive to survey shallow areas than deep waters, and most surveys are carried out for navigational purposes. There are gaps in the data available. The next challenge is to think whether it is worthwhile and cost efficient to close these gaps where needed. Stress tests have been carried out in sea basins. To develop renewable energy further, higher resolution data is needed. Access to data is still restricted, for example in the Baltic SeaOur hope is that marine data and mapping of the seas is something that will generate a commercial viability in itself.

Round-Table 1: What is Coastal Bathymetric Data and why is it crucial for maritime activities?

Mr **Bruno FRACHON**, Chief Executive Officer, French Hydrographic Service, thanked Mr Friess for providing an overview of coastal mapping. As mentioned, hydrographic services are responsible for charting the seabed for safe navigation. It is a very stringent obligation. His presentation can be found here. He presented the consortium and explained the objectives of the study. Coastal mapping is increasingly demanded by many domains, for example, for the safety of navigation. He stressed that it was important to note that we do not use

the same reference levels for measuring depth. There needs to be a strategy at European level to obtain and develop bathymetric data.

Mr **Sean CULLEN**, Senior Geologist, Geological Survey of Ireland, gave an overview of his work within the project on data governance and economic models. His presentation can be found here. He explained the results of a questionnaire carried out, which demonstrated that partners fall into one of three categories:

1. Freely available data;
2. Data is available but at a cost;
3. Data is restricted under national security limitations.

Mr **George ALEXAKIS**, Vice-President of the Conference of Peripheral Maritime Regions, gave a speech on the use of coastal bathymetric data by the regions. The regions need a wide range of data in order to support the implementation of key policy areas, such as MSP and ICM, tackling coastal erosion and climate change, fisheries and aquaculture etc. His presentation can be found here. He listed the policy areas in which Regions use bathymetric data, and then focused on examples from the Region of Crete. He concluded by stating that the regions need coastal mapping in order to deal with real problems at regional and local level.

Mr **Joseph COLIN**, Worldline, gave a demonstration of a coastal mapping portal. His presentation can be found here. He explained what a coastal mapping portal is, why it is necessary and what data is available. He then gave examples including visualisation and tools. He concluded by providing details of the possible future for the portal.

Discussion with the participants

Mr **Andris Andrusaitis**, BONUS, highlighted some of the exciting thoughts that had been expressed. One problem is how to map the blind zone, where water is too shallow for ships and too deep to reach with Lidar or other tools, and how to solve the cost problem. BONUS is working on some of these issues. He provided details of a project to develop a specific platform which will be involved in the mapping and collection of data within the blind zone, and another project that will try to combine acoustic and optic data to improve coastal zone mapping. He stressed that many scientific problems are dependent on coastal seabed mapping. He concluded by highlighting the problem of mapping underwater habitats and underlining the importance of this work.

Mr **Jonathan Wills**, Shetland Islands Council, explained that they made an early start to coastal mapping in Shetland. With the arrival of the oil industry in the 1970's, the charts were useless to big tankers. Since then a coastal mapping project has been developed. He provided examples of how this project has been used and how it has helped:

1. For detailed bathymetry;
2. To implement a unique inshore shellfish management scheme;
3. To plan oil and gas pipes and cable routes;
4. To identify marine protection areas, in particular a coral reef;

5. To identify areas to be avoided;
6. To identify sites for proposed wave energy machines;
7. Wildlife tourism etc.

He concluded by explaining that the oil spill contingency plans were being revised, with new maps being used and extended. There would be a lot more problems without coastal mapping.

Mr **Ricardo SERRÃO SANTOS** asked about autonomous vehicles equipped for scanning, that can go close to the coast and are better controlled. He also agreed that habitats are also important and asked how they were integrated into the approach being used.

Mr **Bruno FRACHON** replied that indeed all autonomous vehicles are very active in the field of research and provide very accurate and precise information. Although you can deploy a whole swarm of them, you need to look after them. He agreed that a key point is habitat modelling, to help understand the seabed.

Mr **Lorenzo Rossi**, ISPRA, provided clarification on the use of the website.

Mr **Bernhard FRIESS** agreed on the importance of habitat analysis. The idea of EMODnet is to create more availability, more data, for example chemical, biological and physical properties of the sea. It is essential to have the whole picture, that brings together as much data as possible from different sources and different dimensions.

Mr **Sean Cullen**, highlighted the fact that the resolution of the data is becoming increasingly important, especially for habitat mapping. The higher the resolution, the higher the cost, but the greater the benefit.

Round-Table 2: Which support from the EU?

Mrs **Gesine MEISSNER**, MEP, President of the Intergroup, made 2 short comments on the first round table. She stated that there is legislation regarding AUVs and how and where they can fly. They cannot simply fly anywhere without permission from authorities. There needs to be rules on this. Regarding the issue of wave energy mentioned by Jonathan Wills, she explained that MSP is very important. It leads to cooperation with other stakeholders and institutions and authorities have to be involved to see what is planned, where, and if it can be combined. She gave the example of a project that combines wave energy and aquaculture. She then opened the second panel and introduced the first speaker.

Mr **Jan-Bart CALEWAERT**, Head, European Marine Observation and Data Network (EMODnet) Secretariat, said a few words on the wider context, explaining what is being done at EU level to make coastal data more easily available and accessible to a wide range of users. He provided a simplified version of the marine knowledge value chain. He explained that data information can only create knowledge and provide support if it can be easily found, accessed and used. Data acquisition activities in Europe are very expensive especially in coastal environments. He then described what the EU can do, and what it has already done, in particular the development of the marine knowledge 2020 strategy, which aims to move away from fragmentation and to develop a coherent open data sharing framework. He concluded by explaining the current state of play with

EMODnet and its primary goals, how it works and what information it provides, and provided examples of EMODnet products and services.

Mr **Magnus WALLHAGEN**, Head of Production, Hydrographic Office, Swedish Maritime Administration spoke about funding opportunities and bathymetric acquisition costs. His presentation can be found here. He provided examples of projects already indirectly funded by the European Union, explaining that even low co-financing make a big difference. He then demonstrated the real benefits of financing bathymetric acquisition, safety (this is crucial), efficiency and accuracy. He pointed out that there is a need to be innovative in order to find funding opportunities. Reliable bathymetry provides basic knowledge for all aspects of blue growth. He then listed the obstacles in existing funding programmes and concluded by stating that we know what we can do and we need to it, but we need help to do it.

Mr **Damien PERISSE**, Director for Maritime Affairs, Conference of Peripheral Maritime Regions analysed funding opportunities with different EU funding programmes. His presentation can be found here. The first part of his presentation focused on Interreg Operational Programmes. He presented the work carried out in the framework of the Coastal Mapping project, explained the method used including the collection of available documents and the identification of opportunities. As a result, 2 maps were developed, of transnational and cross-border programmes. He then presented the results of the analysis. Although there are funding opportunities, they are not well-known. Beyond Interreg programmes, there are other funding opportunities, ERDF, CEF and TEN-T, EMFF and LIFE. To conclude, he stressed what was needed:

1. To raise awareness of EU funding opportunities;
2. To improve the interoperability of the data produced.

Discussion with participants

Mr **Njål Tengs Abrahamsen**, Norwegian Mapping Authority, gave an update on the current situation in Norway. He provided details of the work carried out over the last 2 years, including providing the tools needed so that they know the standard of the data and can streamline the production of charts. The problem in Norway is the Safety Act, however, research institutions and other partners have security clearance so they can use detailed bathymetry to do their analysis.

Mr **Andris Andrusaitis**, BONUS, explained that if the European Commission and Member States succeed, and if the European Parliament agrees, hopefully there will be a joint Baltic Sea and North Sea research programme starting from 2021. At BONUS they believe that the EU needs a coordinated approach to the development of regional seas research and innovation programmes.

Mrs **Gesine MEISSNER** agreed that although there are regional sea basin strategies they don't always work as they should. A European strategy should try to combine everything. There has to be cooperation because the seas know no borders. It is very important to move forward with a common approach.

Mr **Bruno FRACHON** stressed coordination and cooperation. Products cannot be made from data if the data is not standardised. Although coordination has created much value in the basins, there is another level of coordination beyond the basins. Coordination is not only exchanging best practice but mobilising assets. There needs to be some kind of strategy and governance to address this coordination.

Mr **Bruno Thenail**, Normandy Region, highlighted the possibility of funding through Interreg programmes. The situation should be examined programme by programme as the possibilities are very different, and with each Authority to see how these kinds of initiatives or funding can be promoted.

Mr **Ricardo SERRÃO SANTOS**, stated that he believes public funding is fundamental, but there are a lot of industrial stakeholders involved in the field of bathymetry. Are the industries that need the information big funders of basic bathymetric data, does it all rely on public funds? How hard is it to get access to military or navy information for these databases?

Mr **Bruno FRACHON** replied to the first question on public funding, confirming that the shipping industry is used to not paying for surveying. In general, the oil industry and marine renewable energy industry have to fund bathymetric surveys, but when they do they are reluctant to make them public. In reply to the second question regarding the navy, he explained that some navies have restrictions on the level of resolution accuracy in certain areas. Bathymetry is very useful for naval operations. A lot depends on national circumstances and legislation.

Mr **Iain Shepherd**, DG MARE, highlighted that not only surveys are carried out for wind farms, oil exploration etc, but also environmental impact assessments. This data has to be provided to the public authority. A new facility has been opened to enable people, for example those submitting environmental impact assessments, to discuss what format they need to provide their data in, so it can be made available for reuse. This is a step forward with regard to standards and reuse of data.

Mrs **Gesine MEISSNER** agreed this could be a win-win situation for all involved. There is no sense in collecting data from the same place twice - there needs to be cooperation. Although we have made good progress, there is always room for improvement.

Ms **Anna Pineau**, Aquimer, regretted there were no aquaculture examples. She expressed her support for all those who had mentioned data interoperability, as it is important for the aquaculture sector to understand what is on the seabed. A lot of other information is required to be able to make investment decisions. The aquaculture strategy would benefit from further development of the strategy.

Mrs **Gesine MEISSNER** added that archaeologists are also interested in this kind of data, and often have data to share with others. She stated that she was very optimistic about the future, and thanked everyone for their active participation, in particular the speakers for their informative presentations.