The European Centre for Information on Marine Science and Technology

Facilitating Transnational Usage of Europe´s Marine Research Infrastructure

Summary and Issues Raised

Discussion Paper

Half-Day Conference

November 15th 2016

***Location* IOPAN, Sopot, Poland**

Background

Europe has an extensive network of marine research infrastructure which incorporates a wide range of facilities including research vessels and embarkable equipment, on-land and offshore research and test facilities in the physical, biological and chemical domain as well as numerous remote and in-situ observation facilities. Consolidation, co-ordination and more streamlined access to such facilities is being promoted at European and regional level through overarching initiatives such as ESFRI (European Strategy Forum on Research Infrastructures) and BONUS (the joint Baltic Sea research and development programme) respectively, the establishment of marine and maritime clusters and dedicated project activities to promote such usage. Infobases such as EurOcean´s Research Infrastructures Database, which contains details on over 900 pieces of infrastructure also play an important role in supporting and informing transnational access via the free, publicly accessible database itself but also through its integration in projects and initiatives such as EUROFLEETS (1) and (2), MARINET 2, JPI-Oceans and POGO.

This document summarises the presentations and tries to capture the main points in the ensuing round-table discussion. It can be considered a working document to which comments, additional points and considerations can be added.

Objectives

The objectives of this half day event was to present the state of play and future trends in relation to activities promoting improved knowledge of and transnational access to Europe´s marine infrastructure. Moreover it provided an opportunity to look at regional initiatives, including those taking place in the Baltic Sea Basin. It also provided a forum in which to present EurOcean´s activity in relation to marine research infrastructure and an opportunity to discuss its role and priorities for future work in this domain.

Presentations

The full agenda including the speakers are listed in Annex 1 and video recordings of all presentations can be accessed at http://tv.task.gda.pl/?p=3034. A summary of the presentations is provided here.

The event was opened by Slawomir Sagan, IOPAN representative to EurOcean and current President who welcomed EurOcean Member representatives, speakers and guests. Slawomir highlighted IOPAN´s interest in marine research infrastructures calling attention to their research vessel, various Remote Operated Vehicles (ROVs) and other equipment including optical and acoustic instruments. He furthermore mentioned IOPAN´s involvement in ESFRI (European Strategy Forum on Research Infrastructures) activities namely SIOS (Svalbard Integrated Observation System) and Euro-Argo, Europe´s contribution to the international ARGO floats initiative.

Scene Setting in the ESFRI Context, *Ned Dwyer, Executive-Director EurOcean*

Ned provided an overview of ESFRI and highlighted those marine relevant projects and activities that are on the ESFRI roadmap. The 4th update of this roadmap was published in 2016. He drew attention to the fact that ESFRI itself has highlighted the urgent need for a European integrated and sustained European Ocean Observing System (EOOS) with a specific strategy, implementation plan and sustainable budget.

The BONUS experience of joint use of marine and maritime infrastructure,
Meelis Sirendi, BONUS Programme Officer

Meelis described the background and context to the BONUS initiative which started back in 2003. Since 2007, BONUS has invested over €80M in funding almost 60 projects. Although, infrastructures are not a priority area for BONUS, nonetheless it has carried out an inventory of relevant marine infrastructure in the sea basin (2012) and has identified 20 regional-going Research Vessels and 28 field stations. Details of this infrastructure are available on the BONUS website. It is also estimated that the in-kind value of marine infrastructure access to BONUS funded projects is of the order of €5M. In terms of improving transnational use of infrastructure, Meelis drew attention to the need to give incentives to infrastructure providers and to reduce the administrative burden associated with such transnational use.

The SUBMARINER experience with shared infrastructure
Anna Kaczorowska, University of Gdansk, Poland and SUBMARINER Network

Anna spoke about the INTERREG funded Baltic Blue Biotech Alliance. The focus of this activity is on promoting and demonstrating innovative use of Baltic bio resources. Strategic support is required to take advantage of these resources, so the objective is to develop transnational and integrated value chains. The project itself provides support services, and one challenge is to improve the access and use of relevant facilities. Recently the Alliance launched a European

wide call for ideas and 20 applications from 8 countries were received. After a phased evaluation process, 6 of these have been recommended to join the Alliance and further the development of their ideas. The next opportunity to join the Baltic Blue Biotech Alliance mentoring programme is foreseen for 2017.

JERICO and JERICO-NEXT Trans-national Infrastructures, *Laurent Delauney, IFREMER, France*

Laurent represented the H2020 JERICO Next project team. One of the project aims is to deliver a harmonised research infrastructure for coastal observations. There are 30 observatories and 5 other facilities available for transnational access (TNA). Through this TNA researchers are provided coordinated, free of charge access to unique coastal infrastructures. One TNA call was already made and 2 more are foreseen: one in 2017 and one in 2018. Laurent presented some example infrastructures, including moored stations, seabed cabled observatories and land based calibration labs. Positive aspects of the TNA programme include access to infrastructure that is not available in researchers´ home countries, ideas to improve infrastructures, original projects, and long-term collaborations. The drawbacks include the administrative complexity associated with TNA and the fact that the infrastructure is not available to its owner during the TNA activities.

Laurent also briefly spoke about an action in relation to creating a marine sensor calibration network that has been accepted by the JPI Management Board as part of their roadmap. A white paper on marine calibration is being developed for presentation at the JPI Oceans Management Board in December 2016.

European Research Vessels Operators (ERVO) Group – Coordinating access to research vessels, *Giuseppe Magnifico, CNR, Italy*

Giuseppe introduced the ERVO Group, of which he was the chairman in 2013 and 2014 and a member of the Executive Committee since 2015. ERVO is an informal independent network created in 1999 to be a forum for European research vessel operators and it has the aim of coordinating activities related with small to medium sized vessel operators. The group has grown over the years and now has more than 50 participants from 30 institutions/organisations that attend the annual forum. During this annual event of the Group (18 held to date), presentations, discussion and issues of mutual interest (e.g. technical, operational, safety, environmental and legal issues/problems) are the foci of activities. The next meeting will be in Finland in June 2017.

In April 2014, the Group signed an agreement with EurOcean in relation to provision of a number of services including maintenance of its website. Moreover it has a strong link with the EUROFLEETS 1 and 2 projects; since 2012, in fact, ERVO as been a permanent invitee to EUROFLEETS project meetings.

Over the years, significant discussions have taken place regarding the relationship between ERVO and other European and international initiatives, such as OFEG (Ocean Facilities

Exchange Group), EOOS (European Ocean Observing System), IRSO (International Research Ship Operators) and the role of ERVO to act as custodians and maintain all the networking tools and results of the EUROFLEETS projects. These topics have increased the need for a further formalisation of the Group. In order to achieve this, an *ad-hoc* working group and Executive Committee were established in 2014 and in 2015, respectively to discuss the future of ERVO. Recommendations from these groups include the need to improve ERVO visibility so that it represents the European view on research vessels and large exchangeable equipment; to play a role in EUROFLEETS 2 legacy; to continue to collaborate with EurOcean; to focus on regional and coastal vessels to avoid overlap with IRSO; to maintain dialogue with OFEG and to complement EOOS activities and establish a long-term link with them.

ERVO will continue in the future to foster integration and efficient use of seagoing research infrastructure.

EurOcean´s Integrated Research Infrastructures Database (RID) adding value to marine infrastructure initiatives, *Sandra Sá, EurOcean & Marcin Wichorowski, IOPAN*

Sandra described how since 2006 EurOcean has developed four marine infrastructures databases, based on EurOcean Member requests. The first one in coordination with the ERVO Group was the Research Vessels database; the large exchangeable equipment database was then developed based on an IMR (Institute of Marine Research, Norway) prototype; an aquaculture facilities database includes modules developed with thematic experts and finally a research infrastructure database was developed, in coordination with IFREMER (France). The latter is an overarching database providing an overview of the key marine research infrastructure in Europe. These databases are also linked into EUROFLEETS 2, POGO, JPI Oceans and soon MARINET 2. The current four databases are now being integrated in order to streamline management, access and use. This new database (RID 2.0) will follow a modular approach, simplify the categories used and follow international standards and protocols, as well as develop a new and easier to use interface. Marcin continued by speaking of the SeaDataNet community who are responsible for developing and deploying standards, and he referred to the common vocabulary information (e.g. platform codes, country codes) used in the RID 2.0 which is based on those held at the British Oceanographic Data Centre (BODC). The data model approach used for the RID 2.0 will facilitate its management and expansion, and potentially it could be linked to the "Linked Open Data Cloud". The RID 2.0 will be available soon.

Marine Infrastructure Developments in the Black Sea, *Nicolae Panin, GeoEcoMar, Romania*

Nicolae started by describing the system for early warning of marine geo-hazards that has been recently put in place by Bulgaria and Romania. It consists of three sub-systems: the 1st one is a network of five buoys with surface and bottom sensors providing offshore meteorology parameters and information on the quality and dynamics of water masses in the western Black Sea. These buoys are also equipped with devices for detecting Tsunami type waves; the 2nd sub-system is a series of 18 GNSS enabled coastal sensors that provide information on vertical

and horizontal movement in the Earth´s crust; the 3rd sub-system comprises a network of 8 seismometers. All data from the system is sent to two centres for storage and analysis, one in Romania the other in Bulgaria. This system is part of the EMSO ERIC (European Multidisciplinary Seafloor and Water-column Observatory, European Research Infrastructure Consortium) and data are freely available.

The DANUBIUS Research Infrastructure is one of the largest projects to have been accepted on the ESFRI Roadmap. Work has now started on transforming this to an ERIC. The project focusses on advanced studies of river systems across Europe, including deltas and estuaries. The Danube is considered a super-site and the project data centre will be located in Romania.

Round Table Discussions

How can transnational access in Europe be improved and what is EurOcean´s role in this?

- We need more databases of targeted information; we need to know what expertise is available in specific areas;
- Long term sustainability is needed for coastal and ocean observatories. The promotion of transnational access can help in ensuring this. Organisations such as EurOcean and JPI Ocean can play a role;
- ERVO is a repository of knowledge on research vessels and its relationship with EurOcean can be further enhanced;
- The relevance of ERVO needs to be made more strongly towards the EC, as they can assist the EC in relation to helping them to understand the importance of and how to improve support to marine research infrastructures, especially now as thoughts turn towards FP9;
- BONUS has provided a cookbook in relation to its experience on establishing an article 185 entity and ERA net. This can be of use to others. Having the commitment of all countries in a region is vital. The strong support of HELCOM was also invaluable;
- EurOcean´s Research Infrastructures Database is very valuable as it has long-term sustainability. BONUS can work with EurOcean, as they have the correct regional contacts, in order to ensure the RID is comprehensive for the Baltic. EurOcean can provide BONUS with a tailored dynamic view of regionally relevant infrastructure;
- The influence of river systems on the coastal zone is now a topic of scientific interest. A challenge for EurOcean is how it can address and incorporate such information in its holdings;
- The EurOcean RID is a multi-layered resource, providing big numbers for policy makers, but scientific detail and the names of contact points for scientists working in specific fields, so it can appeal to a wide audience;
- EurOcean members have a lot of hands-on experience in relation to TNA. A number of challenges have been encountered in H2020. EurOcean can help in terms of feedback

and advocacy towards the EC in relation to the next round of calls and in particular towards FP9;
- The way TNA is operated is strongly influenced by the EC system. Other more flexible approaches could be imagined, for example multi-annual regional country agreements for ship time to address specific themes (e.g. chemical pollutants in the western Mediterranean).

What are your expectations of EOOS and what role can EurOcean´s play?

- EOOS can ensure there is better coordination of ocean observations and help avoid duplication. EurOcean can contribute to baseline studies in relation to relevant existing infrastructures;
- ERVO is currently enhancing its relationship with EOOS. There is a complementarity between both bodies;
- Vessels have a major role in relation to some observation systems (e.g. deep-sea observatories, transects, seabed mapping). Multi-year plans are required as only a limited number of research vessels are designed to handle such activities;
- ERVO can coordinate the planning of "special purpose vessels" with respect to the open question on how many vessels EOOS institutions/countries need and can afford.

Wrap-Up

At the end of the meeting, Slawomir Sagan gave a brief wrap-up, highlighting the main conclusions drawn from presentations and discussion. Among others, he stressed the importance of the bottom-up initiatives of institutions and organizations, as a way of capturing and expressing views about the importance of identified issues, to complement the priorities drawn by national and European marine science policy bodies. Closing the meeting, Slawomir thanked the invited speakers, participants and remote viewers for their active presence and valuable input.

Annex 1 - Agenda

Time	Draft Programme
14:30 – 14:50	**Welcome and Scene Setting in the ESFRI Context** *Slawomir Sagan, Vice-President EurOcean* *Ned Dwyer, Executive-Director EurOcean*
14:50 – 15:10	**The BONUS experience of joint use of marine and maritime infrastructure** *Meelis Sirendi, BONUS Programme Officer*
15:10 – 15:30	**The SUBMARINER experience with shared infrastructure** *Anna Kaczorowska, University of Gdansk, Poland and SUBMARINER Network*
15:30 – 16:00	**Coffee Break**
16:00 – 16:20	**JERICO and JERICO-NEXT Trans-national Infrastructures** *Laurent Delauney, IFREMER, France*
16:20-16:40	**European Research Vessels Operators (ERVO) Group – Coordinating access to research vessels** *Giuseppe Magnifico, CNR, Italy*
16:40 – 17:00	**EurOcean´s Integrated Research Infrastructures Database (RID) adding value to marine infrastructure initiatives.** *Sandra Sá, EurOcean & Marcin Wichorowski, IOPAN*
17:00 – 17:25	**Roundtable and Discussion with a focus on enhancing EurOcean´s role in relation to infrastructural information support** *Carlos García-Soto, IEO, Spain*
17:25- 17:30	**Wrap-up and Close of Conference** *Slawomir Sagan, Vice-President EurOcean*

All presentations at: http://tv.task.gda.pl/?p=3034