

EMBRC collated requirements

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Introduction to EMBRC

EMBRC, the European Marine Biological Resource Centre (<http://www.embrc.eu/>) is a distributed European RI that is set up to become the major RI for marine biological research, covering everything from basic biology, marine model organisms, biomedical applications, biotechnological applications, environmental data, ecology, etc. Having successfully completed a 3-year Preparatory phase (2011-2014), it is now in its Implementation phase (2014-2016), and operation is planned to start in 2016-2017. It has 9 European countries and associated countries as full members, the stations and laboratories of which contribute their facilities, equipment and human capital to the infrastructure.

The main purpose of EMBRC is to promote marine biological science and the application of marine experimental models in mainstream research by providing the facilities (lab space), equipment (e.g. electron microscopes, real time PCR machines, crystallography, lab equipment, equipment for accessing the environments such as research vessels, scientific divers, ROVs etc.), expertise and biological resources that are necessary for carrying out biological research. Users (scientists, the private sector, SMEs) who are interested in working on a particular marine organism can browse through the EMBRC catalogue of labs and facilities and submit an application for visiting one or more sites (from one of the EMBRC member countries). If their application is accepted, during their visit they can either collect organisms using the EMBRC equipment, or EMBRC can collect them for them, and train them on working on them. They can also set up cultures for which EMBRC provides the access, or EMBRC can set them for them. The users can then perform the experiments that they like, depending on the purposes of their research. They can take away the preserved organisms, or they can work in the EMBRC labs to produce the data that they need for their research. The role of EMBRC is to generate data and make it available. It does not usually do any analysis on the data, unless it is contracted to do so. Data is usually generated through sensors in site in the sea or samples that are collected and then measured in the lab.

Apart from ENVRIplus, EMBRC is also involved in the biomedical cluster CORBEL, and in the marine cluster, EMBRIC.

Requirements gathered

General requirements

General requirements for EMBRC

EMBRC would like to achieve several objectives through participation to ENVRIplus:

- **Establishing collaborations with the environmental community**, which would benefit from their environmental and ecological data: EMBRC has been heavily involved with the biological and biomedical communities so far, but not with the environmental community.
- **Developing and learning about new standards and best practices in terms of standards**: the EMBRC community are very interested in considering new standards in terms of methodologies, workflows and data. They would like to work towards increasing the compatibility of the data generated from their various member institutes such that its analysis can become comparable, but at the same time not lose the compatibility of this data with data which was already generated, sometimes as far back as 100 years ago.
- **Developing new standards within INSPIRE [8], which can be used for other datasets**: While INSPIRE is particularly focused on spatial data, its disadvantage is that it does not apply for other types of data. Through participation to one of the ENVRIplus work packages, the the RI REP advised that his organisation- the MBA (Marine Biological Association [9]), a member of the EMBRC, will attempt to develop standards within INSPIRE which can be used for other datasets by EMBRC.
- **Exploring new data workflows which make use of marine biological and ecological data.**
- **Networking with other RIs.**

The following are some important priorities for EMBRC:

1. **Setting up an e-infrastructure within the next year**, which would need to provide appropriate connectivity in order to facilitate the movement of data between the labs, in cases where users want to sample data from different locations, and send it to various repositories.
2. **Developing several web resources (information about various species, availability of genomes, transcriptsomes, mutants etc) and platforms**: In particular, they are working towards building their access portal, which will include a catalogue of all of their lab locations, equipment, organisms, e-infrastructure services which users (researchers within or outside the marine sector, private sector, SMEs) can search and apply for. The EMBRC community is working on connecting external resources to their access portal, such that information on all of their available molecular resources is available from the same place. They expect their access portal to be ready within at most one year.
3. **Negotiating with other RIs within ENVRIplus, the biomedical cluster Corbel and the marine cluster EMBRIC how they could work together to provide their services.**

The biggest challenge for EMBRC will be looking at the different standards and workflows of the 3 clusters that it is involved in, and deciding on common ones, both for its member institutes, but also with other RIs across domains to facilitate collaboration.

References:

8. <http://inspire.ec.europa.eu/index.cfm/pageid/48>
9. <http://www.mba.ac.uk/>

Identification and citation

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Community support

Community support in EMBRC

Summary and conclusions