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1 Introduction

This first interim report is the Project midway milestone. It takes stock of the work done in the first 18 months of the project. It is broken down into three sections:

- Activities provide details about efforts allocated and difficulties encountered when carrying out the various blocks of work.
- Results describe how far the Project has gone in achieving its goals.
- Outlook for next period is a workplan for the second half of the Project taking into account the recommendations from the panel meeting and report.

2 Activities

2.1 The literature survey

As a preliminary note, the Literature Survey was not designed to be only a literature survey as usually expected. Based on a limited amount of 22 studies from the literature, some key findings were made but it also appeared authors seldom give much detail about their data, so the expectations were low about how the availability side of data adequacy would really be informed from the literature.

Instead, anticipating on future work, the Project spent quite a bit of time identifying what data inputs would be needed to perform the challenges. This was made in the form of a large excel spreadsheet giving as much detail as possible on data types and data sets using data management standards from ISO and SeADataNet. This compilation of input data sets was found to be quite consistent with the views retrieved from the literature in terme of types of characteristics (i.e. parameters).

2.2 The First data adequacy report

The first adequacy report was mainly focused on availability, i.e. how easily users access data sets of interest. In order to best perform this assessment the metadata related to the conditions of availibility were added to the descriptions of input data to be used for the products to be delivered by the challenges. These descriptions are managed in an ISO19115 compliant Geonetwork opensource catalogue common with the Medsea and the BlackSea Checkpoints in the GIS database called Sextant.

Availability was assessed by the challenges upon effectively downloading the datasets they deemed necessary to perform their work. Seven key availability indicators were informed for each of the 550 or so metadata records (a record being a unique combination of a dataset along with its source) to give account of adequacy from this standpoint. The advantages of using a repeatable method strongly based on standards have been described in both the Literature Survey and DAR reports. This method will enable the partnership to easily update the metadata base as new attributes are discovered. It also offers a way for providers to check the quality of their services. It was reported as a very appropriate tool by our panel of reviewers.

2.3 Products development

The preliminary product were the ones successfully developed by the Oil leak challenge in real time in May 2016 upon request from DG/MARE: a 24 hour and a 72 hour bulletin.

Products development was initiated in the last three months of the period, following the panel meeting in Dec. 2016. The first action assigned to the partners was to fully describe their challenges products by way of products metadata.

Each challenge produces several products, and for each of these metadata are going to be informed as per ISO 19115. In the lineage section of each product a list of the datasets contributing to it will be appended. In the Sextant GIS platform where the products will be displayed, a permanent link between products metadata and input datasets will be provided along with a number of quality measures used to assess the adequacy of the input data

2.4 Management

Management mostly consisted in making sure the Project proceeded towards its objective by delivering its deliverables according to the workplan.

The coordinator organized the kick-off in Brussels as well as two progress meeting (frequency of 6 months) in Lisbon and Brussels, the latter back-to-back with the Panel meeting. A training workshop on the Sextant software was organized in Brest in Jan. 2016.

So far the Project has delivered:

- 9 bi-monthly reports spanning the 18 months
- The first Data Adequacy Report on M15
- The first Panel meeting on M16 and its report on M18
- This stakeholders meeting on M18
- This present interim report

The coordinator organized a Panel review (M16) and the Checkpoints stakeholders meeting (M18) and attended three EMODnet Steering Committee meetings over the period. It also attended an Atlantic Stakeholders Platform meeting convened by DG Research in Dublin in Sept. 2016.

2.5 The panel meeting

The Panel was established in the tender and the submission as a group of 9 experts whose remit is to assess the Project's work and help steer it towards proper achievement of its objectives. Two panel meetings are planned at month 15 (Dec. 2016) and month 33 (May 2018), immediately after the delivery of the two Project Data adequacy reports (DAR).

The first Panel's task was to assess two deliverables, namely the Literature survey delivered in Aug. 2016 and the first Data Adequacy Report (DAR) delivered in Nov. 2016, and assess whether the Project's trajectory is likely to lead to the results described in the Grant agreement. This first assessment was focused on data availability, while data appropriateness will be assessed over the next 18 months.

The Panel meeting report was submitted by the end of January. In short the main conclusions rom the experts were:

- Then literature survey was not thorough enough to give a good view on products related to the challenges;
- The availability study was well conducted, and the use of stable concepts, vocabulary, indicators derived from ISO was a good choice;
- The indicators talked by themselves, however in a few cases where they are low, worked examples would be good to better describe specific issues;
- A feedback mechanism should be established whereby data providers, upon looking at flaws in their data flow and dissemination, could give comments to the Checkpoint and take action where concerns were raised.

2.6 The website

The EMODnet Atlantic checkpoint website (http://www.emodnet-atlantic.eu/) gives a description of the project and provides access to material and deliverables produced by the partnership.

It includes five sections in free access along with a section for restricted internal use by the partners only.

In the “About” section Internet users can gain information about the checkpoint concept, the targeted audience, the political context, the checkpoint partnership and the panel composition.

The eleven challenges are described in a specific section. The « Assessment framework » tab opens up a presentation of the checkpoint assessment framework, including the definition of terms and vocabulary, the implementation of the assessment method and the list of the expected deliverables.

The « Checkpoints webservices » are of two kinds: on one hand the catalogue of datasets collated by the partners (the “Browser”), on the other hand a “Dashboard” which by tapping into the catalogue gives a live picture of the data landscape by way of indicators and statistics. The last section « Reports and news » makes available the project’s deliverables (Literature survey, Data adequacy report, Panel report etc.).

On the Access pages, the project partners can make their way towards: (i) various types of information: Organization around checkpoint services, Framework for information collection on upstream data, Indicators methodology, Sextant metadata editor, Sextant thesaurus, (ii) documents such as the Literature survey template and (iii) project’s tools and services, namely the Alfresco Share document repository hosted by Ifremer, the Atlantic checkpoint Sextant catalogue with either edition or administration rights (Checkpoint Service), the Service desk contact. A feedback sheet to the attention of the Service desk is also made available.

Finally the landing page gives access to the EMODnet central portal and its social networks (Facebook, Twitter, LinkedIn).

2.7 Dissemination

Communications in conferences

- The Atlantic checkpoint was first publicised at EGU (Vienna) in April 2016 in a presentation made by the MedSea project;
- Later in Sept. in Dublin in the Atlantic Action Plan meeting EMODnet and the Atlantic Checkpoint were presented in a talk titled “Open data for enhanced growth in the Atlantic Area - The EMODnet push”.

- At the IMDIS Conference in Oct. in Gdansk a whole session was devoted to EMODnet, with a talk given by the project on “EMODnet essential data needs and gaps - A comparative review of the Atlantic, Black Sea and Medsea Checkpoints”.

The stakeholders meeting

From our initial suggestion, the decision to organise a joint stakeholders meeting (rather than leaving each Checkpint to do so as per tender) was rightly taken by DG/MARE. The Secretariat was tasked with organizing it in Brussels in Feb. 2017. In preparation to this the Atlantic Checkpoint provided the Secretariat with:

- About 180 stakeholders contact details, about 50% of French people and other from across the EU;
- About 40 key findings retrieved from the literature survey and investigations about data sets contributing to the challenges;
- From these key findings the Project prepared several presentations as required : a) the Project status, b) a round table focusing on essential key findings, c) an Atlantic break-out session focusing on the main issues raised by the key findings and possible solutions as viewed by the stakeholders, d) plenary debriefing.

3 Preliminary results

This section summarises the key findings about data adequacy from this first phase of the project. They were exposed at the stakeholders meeting to trigger discussion and feedback. In bold characters are the recommendations that have been formulated by the participants of the stakeholder workshop.

3.1 Data adequacy: availability

Issue	Recommendations
AIS	**EU to Deliver free access to AIS data and highest possible resolution of marine traffic information. Next ESA Sentinel satellites that will be launched around 2020 will collect AIS data. There may be room for making that data available for free**
Fishing data	**Data access must be simplified. It is today extremely cumbersome for Member States and creates data bottlenecks. Need for centralisation and provision of relevant interpreted datasets. Possible coding of fisheries data for areas across region. Data would be coded but still interrogable in models**
Information on MPAs management consistency	**For harmonisation, 1) to standardise the way the information should be delivered and 2) to develop of a web platform to centralise this information**
Bathymetry survey datasets	**EU to make more survey data available without "negociation" by requesting better definition of the conditions of access and use and request that survey data funded by public money are not released at commercial costs**
Bathymetry Medatata completeness	**To make mandatory the delivery of time stamping**
Data visibility and data indexing	**A Master Directory to route end users towards the appropriate data sources is needed. NASA’s Global Change Master Directory (http://gcmd.nasa.gov/) is an example which could be**

Issue	Recommendations
	considered although it is limited to climate change.
Data visibility and website indexing	**The Search Engine Optimization (SEO: https://en.wikipedia.org/wiki/Search_engine_optimization) is a series of techniques to meet users' needs which are probably overlooked by data providers, especially institutional and academic bodies. In addition the lack of standard and guidelines for harmonised web sites is a brake to the use of existing data.**
Data visibility and DOIs	**EMODnet portals to increase use of DOIs**
Data visibility and vocabulary consistency	**To increase the relevance of a website to specific keywords, the use of the SeaDataNet common vocabulary lists (P03 and P02 in particular) by both providers and end users as tags and user words would make searches more efficient**
Data policy visibility	**Guidelines for writing and displaying data policy in an understandable manner on data web sites would be useful and these conditions should be specified in EU calls for tenders. As a result this low visibility prompts end users to wrongly equate the presence of a downloading service with open data acces**
Data policy	**Common vocabulary and definitions have to be adopted by the different data providers.**

3.2 Data adequacy: appropriateness

Some elements about data appropriateness were found out so far as part of the literature survey, even though our products are not made yet.

Issue	Recommendations
Sea surface currents observations scale and coverage	**To increase HF radar coverage, especially in relation to strategically important areas/pathways (Oil slick/Emergencies).**
Hydrodynamics models resolution	**A European initiative to produce high resolution gridded models (500m) across Europe is recommended**
Hydrodynamics models gridded output metrics	**Copernicus to provide supplemental metrics: 10, 50 and 90 percentiles and standard deviation**
Data from models: spatial information on uncertainty	**Data providers to produce a GIS layer on uncertainty of predicted values**
Sea level/land motion observation integration	**EU to undertake a broad programme of GPS correction at each tide gauge**
Spatial resolution/coverage of fishing effort maps derived from VMS	**EU to produce extensive fine scale maps of fishing effort**
Tourist beaches proxy data	**Parking Lots/Hotel Beds/Leisure Activities could be used as a complement but the spatial coverage would still not be full. A suggestion is to develop a layer by interpreting satellite data via crowd sourcing**
Aquaculture sites spatial representation	**This issue is not limited to aquaculture sites but is true for a lot of Human activities GIS layers. To undertake standardisation, i.e. working groups to specify in which form the information should be captured in datasets and provide guidance to data originators for delivery of datasets to the existing infrastructure**
Alien Species data consistency	**To develop standards**

Alien Species data collection	**To define protocols for acquisition of data and elimination of bias and undertake more acquisition**
Species mobility observation	**To develop standardisation of Tags/Genetic datasets** **To provide better coordination of monitoring initiatives (Tags/Genetics)** **To increase scope of existing tagging initiatives**
Fisheries discards and bycatch data availability	**Some data on bycatch around the Azores has recently been added to EMODnet Biology.** **To encourage data originators to populate EMODnet biology**
Bathymetry spatial coverage in western Atlantic	**To encourage the developement of a DTM equivalent to that of EMODnet in Europe**
Spatial coverage of data on carbon sinks habitat	**To make more data acquisition across carbon sink habitats** **Spatial distribution modeling across extensive areas may be an alternative to costly extensive surveys**
Deep sea habitat observations	**To perform more habitat observation/inventory in deep sea**
Fine scale habitat maps coverage	**To make data acquisition in priority area**
Seabed substrate data resolution in shallow waters	**Data acquisition subject to priority drivers**
Seabed substrate data knowledge in deep waters	**Data acquisition subject to priority drivers**

4 Outlook for next period

With the checkpoint concept introduced within the “Marine Knowledge 2020” communication, EMODnet initiated a top quality management process to align the existing data collection and assembly programs with the EU maritime strategy.

To do so, the tender specified a number of challenges that the contractor has to meet by way of products development in order to assess data fitness for use.

4.1 Products development

According to the tender, each challenge should deliver a web page with the following information in an attractive format complete with links, digital map facility and downloads:

- a set of excel spreadsheets for data produced as time-series
- for outputs that have a spatial dimension
    a. Maps (on dynamic server)
    b. Digital data layers compatible with INSPIRE, EMODnet and OGC
- Confidence limits
- A list of the data sources used and data providers. This should include primary data producers as well as intermediaries (e.g. Copernicus, EMODnet)
- An analysis of the usefulness of each data source in terms of location, price, attributers, delivery and usability)

To carry out these tasks, the partners has now to give a detailed description of the expected products and of the applicable quality requirements (specifications) which will be used as reference to determine :

- how well real products fit the user requirements
- if they don't, is it due to lack of appropriateness of input data or lack of adequate conditions of availability.

The list and the description of the products are being informed by the partners according to a template circulated on 17 Dec. 2016 which is going to be made available on the web page of the portal.

The information required at this stage is the identification of the products, the purpose of the creation of the product together with an abstract describing its content and a description of the process and of the characteristics (parameter) needed to produce it (i.e. its lineage), the spatial and temporal extents, the spatial and temporal resolutions, the delivery format.

These descriptions will be loaded into the Sextant GIS database according to the INSPIRE directive for discovery and completed with the quality requirements (quality measures to apply and conformance values) defined by groups of information to which they are applicable according to the ISO 19157 Data Quality principles.

It was agreed within the partnership to create these products by fall of 2017 and inform data set appropriateness attributes by the end of the year, for review by the second panel in May 2018.

4.2 Towards the second DAR

The products will be described and loaded into Sextant together with the measures of quality applied to the real products as well as to the input data for discovery, viewing and downloading.

The (automatic) comparison of the results with the expected ones will provide a set of objective quality indicators which will be reported together with the analysis of the challenge experts of the usability of the existing data for the specified products in the second DAR by end of May 2018.

4.3 Milestones and deliverables

The next milestones and deliverables for the Project second phase are:

- Progress meeting in June 2017: progress on products, presentation of data sets appropriateness indicators;
- Products ready in GIS by October 2017;
- Delivery of appropriateness indicators by the end of 2017;
- Review and feedback on indicators: first trimestre 2018.
- Second data adequacy report in May 2018;
- Second panel meeting in June 2018;
- Final report in August 2018.

Conclusion

Midway through its completion the project is well in line with its objectives. In the forthcoming months specific attention will need to be given to:

- High quality products

- Detailed assessment of appropriateness (along with availability) to properly distinguish between (i) non existing data (ii) data existing but not available, (iii) data existing and available but still difficult to make use of.

This will have to be approached jointly with the thematic lots to primarily lead to the improvement of the EMODnet setup, secondarily to the improvements of a number of other providers systems, in the EU and beyond. For this to happen, a feedback process will have to be designed.

Collaboration of the four ongoing Checkpoints on these points remains to be encouraged and implemented with the support of the Secretariat, possibly by convening a joint technical meeting between all checkpoints some time in 2017.