Project	AtlantOS – 633211
Deliverable number	D2.3
Deliverable title	Bathymetric Integration
Description	Integration of High Seas bathymetry holdings of partner organisations into EuroMapApp which involves making an inventory of the data, determining freedom of access (quality controlling the data) and integration into a Multi-Resolution Topography
Work Package number	2
Work Package title	Enhancement of ship-based observing networks
Lead beneficiary	GEOMAR
Lead authors	Colin Devey
Contributors	Anne-Cathrin Wölfl
Submission data	2018-03-31
Due date	2018-03-31
Comments	[in case the deliverable is late please explain why]

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Stakeholder engagement relating to this task*

WHO are your most important stakeholders?	☐ Private company If yes, is it an SME X or a large company X? ☐ National governmental body X International organization ☐ NGO X others Please give the name(s) of the stakeholder(s): E.g. IHO-DCDB, Scientists from GMRT
WHERE is/are the company(ies) or organization(s) from?	☐ Your own country ☐ Another country in the EU X Another country outside the EU Please name the country(ies): Monaco, USA
Is this deliverable a success story? If yes, why? **If not, why?**	X Yes, because bathymetric data has been integrated onto an open-access platform, from which everyone with internet access is able to download the data sets he needs for his or her purposes. ☐ No, because …..
Will this deliverable be used? **If yes, who will use it?** **If not, why will it not be used?**	☐ Yes, by e.g. scientists for research, NGOs for monitoring protective areas, offshore companies for windfarm planning… ☐ No, because …..

NOTE: This information is being collected for the following purposes:

1. To make a list of all companies/organizations with which AtlantOS partners have had contact. This is important to demonstrate the extent of industry and public-sector collaboration in the obs community. Please note that we will only publish one aggregated list of companies and not mention specific partnerships.
2. To better report success stories from the AtlantOS community on how observing delivers concrete value to society.

*For ideas about relations with stakeholders you are invited to consult D10.5 Best Practices in Stakeholder Engagement, Data Dissemination and Exploitation.

Integration of bathymetric data sets into the International Hydrographic Organisation (IHO) Data Centre for Digital Bathymetry (DCDB)

The IHO-DCDB is hosted by the U.S. National Oceanographic and Atmospheric Administration (NOAA) on behalf of the IHO Member States. The goal is to gather multibeam data sets from all over the globe and to make them publicly available for everyone through NOAA's Bathymetric Data Viewer, a functional and intuitive visualisation platform (Figure 1). IHO-DCDB also distributes the data to EMODnet, GEBCO and Seabed 2030 as well as to the Global Multi Resolution Topography Synthesis (GMRT), where the raw data sets are quality controlled and depending on the outcome, processed and integrated into their compilation of seafloor swath bathymetry.

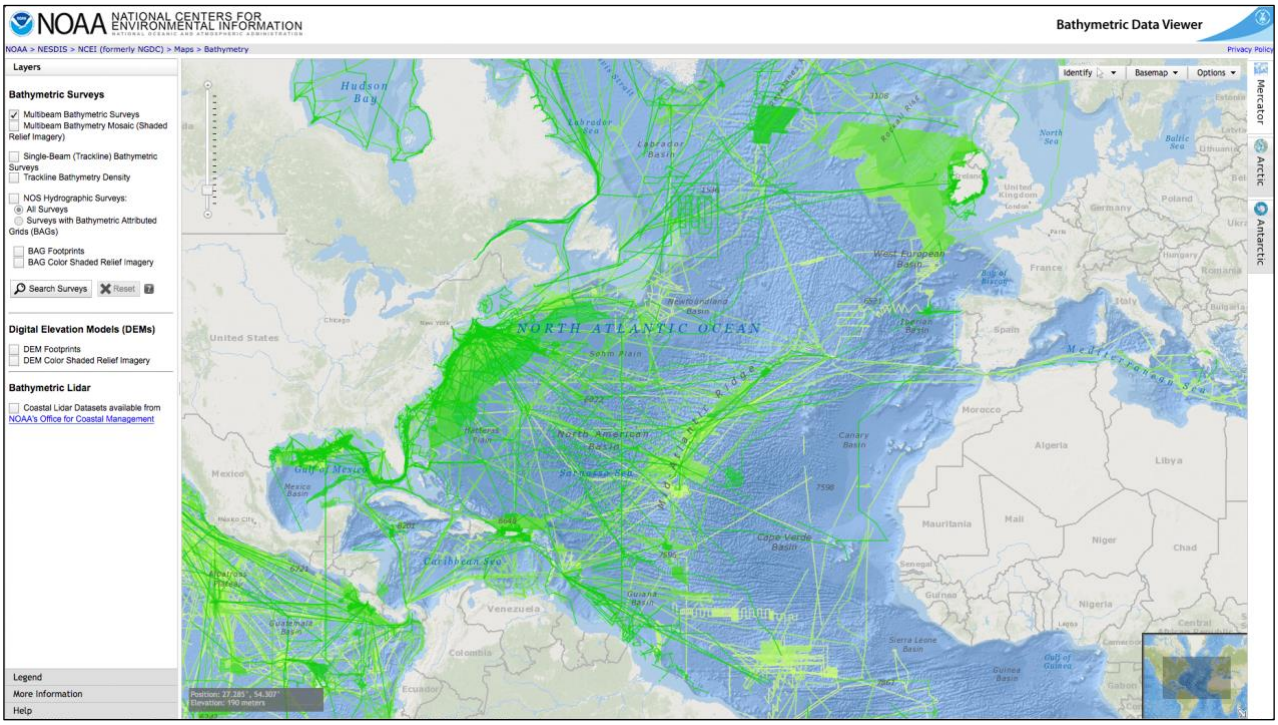

Figure 1: NOAA's Bathymetric Data Viewer, https://maps.ngdc.noaa.gov/viewers/bathymetry/

The partner organisations have investigated their national data archives and generated lists with multibeam data sets that are suitable to be integrated into the IHO-DCDB. The pre-requirements to integrate the data were:

i) located in the High Seas
ii) non-proprietary
iii) available metadata information as requested by IHO-DCDB (Table 1)
iv) directory structure as requested by IHO-DCDB (Figure 2)

Table 1: Metadata form for multibeam bathymetric data for integration of the data into IHO-DCDB

Information Field	Value
SURVEY_NAME	M141_1
SHIP_NAME	Meteor

CHIEF_SCIENTIST	Thor H. Hansteen
CHIEF_SCI_ORGANIZATION	GEOMAR
DEPARTURE_PORT	Las Palmas de Gran Canaria, Spain
ARRIVAL_PORT	Ponta Delgada, Azores, Portugal
START_TIME	08-SEP-17
END_TIME	03-Oct-17
NAV1	GPS
INSTRUMENT	Kongsberg EM 122
HORIZONTAL_DATUM	WGS84
VERTICAL_DATUM	
SHIP_OWNER	Federal Ministry of Education and Research Germany (BMBF)
PROJECT_NAME	Transit
SOURCE	GEOMAR
ABSTRACT	Transit
PURPOSE	Transit
PROPRIETARY	no
COMMENTS	
PROCESSING_STEPS	
DOI	doi.org/10.1594/PANGAEA.883178
OUTSIDE_LINK	https://doi.pangaea.de/10.1594/PANGAEA.883178
ADDITIONAL_POC	
ADDITIONAL_POC_EMAIL	
FUNDING_SOURCE	AtlantOS

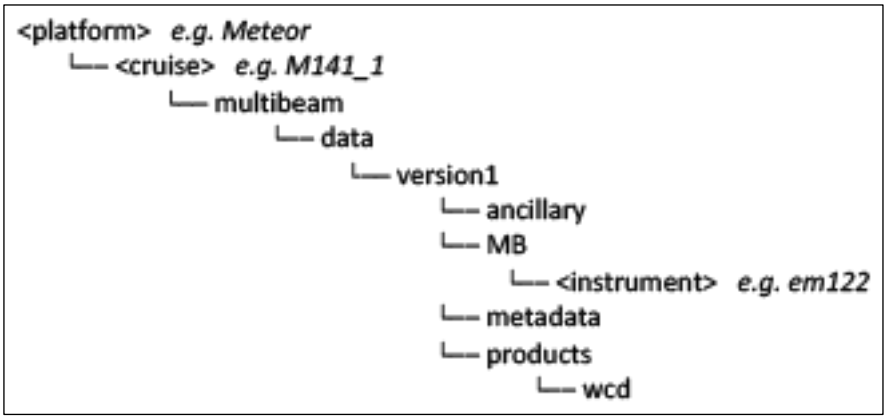

Figure 2: NCEI standard multibeam directory structure for ingesting data

The partner organisations have collected metadata information and prepared the directory structure for the suitable data sets according to the specifications made by the IHO-DCDB. They have established a permanent workflow and integrated the first data sets. Due to the large file sizes (up to 1 TB), the file transfer to IHO-DCDB and integration into the data viewer takes longer time than expected. Remaining data sets are currently transferred one by one. Furthermore, it is planned that forthcoming datasets (from e.g. Atlantic transits) will be continuously integrated to the data center.