BSBD-WG Report to the BSHC 21st Conference

The Baltic Sea Bathymetry Database Working Group has not held any meeting during the last year.

1. Status of the work of BSBDWG

Since the last conference the portal has been up and running without any downtime on the viewing services. The bathymetric model at present time is the same as the version published in December 2013.

We have continued to use the Amazon Web Services with the same setup and size of servers. Together with the server for the BSHC webpage and development server, the monthly cost is presently about 250$. The email handling for the BSBD support questions has during 2015 been moved to Amazon.

2. The use of the bathymetric database

2.1. The portal

The portal address remains as data.bshc.pro

The site is fairly widely used and the number of visits on the portal between the first of July 2015 and first of July 2016 is 11 991visits (4% less than the previous year) made by 9 208 unique visitors (8% less than the previous year= more returning visitors).

The peak number of daily visits during the period originates from the 27:th of July 2015. 345 visits were made on one day, but we don't know why we have a peak on that day. Interesting to see is that on the 13th of March 2016 the Russian users suddenly rises from <5% to around 25% of the total number of users. The amount of Russian users has since then remained steady on the same level.

The number of returning visitors is up to 25% indicating that there is a solid number of users returning to the site.

As foreseen the percentage of Swedish users has decreased to 25% (>85% in the beginning and 36% the previous year) and is expected to decrease further as the usage by other nationalities continues to increase.

Country	Sessions	% Sessions
1. Sweden	3,040	25.35%
2. Russia	1,294	10.79%
3. United States	956	7.97%
4. Poland	803	6.70%
5. Finland	781	6.51%
6. (not set)	645	5.38%
7. Germany	643	5.36%
8. United Kingdom	474	3.95%
9. Denmark	307	2.56%
10. Estonia	251	2.09%

Figure 1 Top ten countries using the portal July2015-July2016

It has so far been registered active links to the portal from 176 sites (previous year 128), *except from these we know that in some places our portal is mentioned and the address is given as inactive links (plain text).*

- 53% of the visitors arrive to the portal from one of the active links.
- 9% of the visitors, that use active links to reach the portal, use the link on the BSHC homepage.

Of the Baltic countries HO only few seems to link to our portal and we would like to ask that all countries add active links to the site from their national webpages in order to further promote the portal.

2.2.Downloads

We have not made any statistic images showing the areas and frequencies for downloads the last years.

We have had 17 support questions sent by email to us and they mainly concerns downloads and/or questions about higher resolutions.

2.3.Use of OGC services

We know that the WMS service is used by several users. Some users also have an internal cache service for the use in their own GIS systems. This internal cache reduces the number of downloaded tiles from our servers as they only need to download each tile once.

As an example the number of DNS-Queries for the month of April was 42,875 (37,689 year 2014 and 46,847 Queries year 2015), 9% lower than the year before. This is only an indication and not an actual number of requests to the server due to external caching.

The HELCOM map portal can still not make use of external WMS services and for that reason redistributes the BSBD by themselves. For the future it would be the best solution if they could use our WMS services for use in their portal and new discussions about this should be started as soon as we have a new release.

3. Work Group participants

Mr. Hans Öiås has during the last year been acting as the Chair of the WG.
The activity during the year has been low.

The manning at SMA has, except the chair been Dr. Benjamin Hell

The current WG members and points of contact is:

Country	Name	E-mail address
Denmark	Jens Peter Weiss Hartmann (Used as point of contact)	jepha@gst.dk
Estonia	Peeter Väling Signe Paevere	peeter.valing@vta.ee signe.paevere@vta.ee
Finland	Juha Tiihonen	juha.tiihonen@fta.fi
Germany	Jűrgen Monk	juergen.monk@bsh.de
Latvia	Normunds Duksis	normunds.duksis@lhd.lv
Lithuania	Viktoras Liulys Mindaugas Zakarauskas (Used as points of contact)	viktoras.liulys@msa.lt mindaugas.zakarauskas@msa.lt
Poland	Marcin Banaszak	m.banaszak@mw.mil.pl
Russia	Capt.Sergey Travin (Used as point of contact)	main@gunio.ru
Sweden	Hans Öiås Benjamin Hell	Hans.oias@sjofartsverket.se Benjamin.hell@sjofartsverket.se

Denmark, Lithuania and Russia have not appointed participants for the WG.

4. Performed work

SMA have had plans to create a newer version of the BSBD 500m grid, but for different reasons and high workload we have had to postpone it several times. We now hope that we soon can plan for a new release early during the autumn as there is a real need and possibility also for improvement as much newer and better data is available from many countries.

Data deliveries for the territorial waters are still pending formal clearance in Finland, some lesser restrictions for the northern part of Finland has been announced. Until clearance has been given only sea chart figures are available. This situation remains but quite a lot of newer data covering Finnish EEZ that will enhance future versions of the model is available.
SMA now has a general approval to use 300m resolution for the compilation of the territorial waters, and we are working on getting approval of at least somewhat higher resolution (250 or 200 m). In some areas 100 m or higher resolutions may already be used for the compilation.

5. Presentations

No presentation has been held or is planned for the near future.

6. Cooperation's

6.1.GEBCO

GEBCO recognizes the BSHC database as a Regional Mapping Project.
The 0.9.3 model has been included in the GEBCO 0.5 arc minute global compilation that was planned for 2014 but was finally released before summer 2015. The BSBD dataset is a major improvement to their compilation for the Baltic region.

At the same time BSBD uses the GEBCO dataset for areas where no data has been provided by national HO, Russia, Lithuania and a part between Denmark and Poland.

Hans Öiås participated in the GEBCO Future of Ocean Floor Mapping Forum in Monaco this past June.

6.2.EMODnet

BSBD is still used in the latest EMODnet phase 2 model.

We plan also to assist in deliveries to EMODnet "High Resolution Seabed Mapping" (phase III). Even that the minimum goal this time is a 3 arc seconds (≈90 m) model, where no other data will be available, upsampling of the BSBD is better than using the GEBCO dataset.

Metadata for BSBD is entered in the IFREMER SEXTANT catalogue for pre-modelled grids: http://sextant.ifremer.fr/en/web/emodnet_hydrography_cprd/catalogue

7. Financing

SMA can continue to keep the portal alive, update the model and also some additional development. Financing is available for the coming three years.

8. Future plans

Even that a new third generation EMODNet-bathymetry dataset will become available in one to two years, there is still a need for the BSBD, especially if we can create the model in higher resolution than 500m. Main reasons are:
- BSBD is based only on quality controlled datasets from HO, no unreliable sources.
- Low degree of smoothing in the modelling to indicate the actual usability of the dataset. If you zoom in too far, you will see that the data is unsuitable for use in that scale for most purposes. In EMODNet, much higher degree of smoothing is applied so the dataset looks much better than it actually is.
- Possibility to display the basin names and to add other BSHC specific information to the portal.

As new data has become available from Finland (EEZ) and a lot of new data is available over Swedish waters, a new version of the 500m model would be of much higher quality. A new version will also cover the Norwegian areas of Skagerrak. Also other countries have announced that they have newer and better data to provide.

The work to reorganize BSBD tasks into a maintenance organization at SMA will continue after the change of chart production system when some personnel resources will have a lower workload. We will work on getting an update of the model published as soon as possible.

We have on our development environment included the basin borders and names for presentation in the portal. This will also be available as the version 0.9.4 is published. The implementation has been approved by the chair of BSICCWG. It would be very helpful for others if the basin boundaries could be made as a BSHC official downloadable dataset (shapefile) for other uses such as navigational warnings and weather services.

- An error has been corrected on our development server that will be corrected on the live server as soon as a new version of the bathymetry model is published. The problem is that some GIS software doesn't recognise any other supported layers than pure tif images, hence no WCS data can be accessed that way. There is though no problem to download via WCS commands in a browser window using the links the portal provides. (*Those in need for it can instead connect to the development server dev.bshc.pro that actually calls on the same dataset.*)
- Update the BSBD 500 m model.
- Include Russian and Lithuanian data if it is made available for BSBD.
- Hope to get better, unmodelled datasets from Denmark and Poland.
- Optimization of the production tools and documentation.
- Compile and provide additional bathymetric layers with higher resolution where the data providers and legislation permit (Germany and Estonia). Possibly also a homogenous version that contains an up-sampled version of all other areas.
- Enhance the coastline for masking and presentation in the portal. The present coastline is taken only from Swedish nautical charts. Except for that we have received coastlines in vector format from Estonia, Poland and Germany. The separate coastlines need to be stitched together.

9. Actions for the BSHC 21st Conference

The BSHC 21st Conference is requested to:
1. Note this report
2. Consent that the work with the portal continues as stated above using the WG members as a reference group.
3. Endorse future cooperation with GEBCO and EMODnet.