Dataportal Bathymetry
Team Flemish Hydrography

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Elevation and Orthoimagery
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Some background information

Implementation of the Bathy DataBase (BDB) since 2006

- The CARIS BDB TRITON is operational and actively used since 2007
- In the last few years a lot of enhancements are made:
  - Splitting the BDB in 1 big archive TRITON and 4 smaller production BDB on separated servers
  - Using customized filters and scripts in the production process
  - More powerful client workstations, servers and network infrastructure

Implementation of the Spatial Fusion Enterprise (SFE) since 2011

- The CARIS SFE TRITON is operational and actively used on the Intranet since June 2013
  and on the internet since March 2014:
  - WMS & WMTS for using Google Maps as background reference
    https://maps.google.com/maps/api/js?v=3&amp;sensor=false
  - WMTS to visualize the bathymetric grids (Sea Area, River Scheldt and Canal Ghent-Terneuzen)
    https://bathy.agentschapmdk.be/spatialfusionserver/services/ows/wmts/OPENSFE?request=getcapabilities&service=WMTS&version=1.0.0
  - WCS for selecting and downloading bathymetric grids and point clouds
- End of 2014 WFS is also be activated for downloading S-57 objects (e.g. wrecks)
  https://bathy.agentschapmdk.be/spatialfusionserver/services/ows/wfs/WFS_ENC?request=GetCapabilities&service=WFS&version=1.1.0
Dataportal Bathymetry

What?
• An online portal system where survey data, metadata and data products can be queried, displayed and downloaded through a web browser.
• The portal SFE has a central database TRITON with depth and height information.
• Is an automated system with Web services where the GIS component provides a good visualization of the data.

Why?
• Offers the possibility for partners of the Flemish Hydrography to download wet and dry measurements as quickly as possible.
  ▪ Public partners: aMT, WL, VLIZ, NGI, LINZ, BEMM, RUG
  ▪ Private partners: DEME, TCARTA, NAVIONICS, ELIA, TOTAL
• Is user friendly and more accessible.

How?
• Composite Grids are Open Data.
• Detailed survey data through registration on http://bathy.agentschapmdk.be/
• After receiving an account you can select the appropriate hydrographic or terrestrial survey and download it.
Source Data & Conversion to EMODnet

Source Data

- Bathymetric database *TRITON* where survey data, metadata and data products can be queried together, displayed and exported.
- The Cartographic production software CARIS has all the *necessary tools* for making Composite GRID and associated metadata.
- A *semi-automated system* developed on top of the CARIS application for conversion of the bathymetry and associated metadata to combined grid and CDIs.

EMODnet conversion

- Annual production of a *new composite DTM* of the Belgian Continental Shelf (BCS) in the EMODNet format for inclusion in the EMODnet Bathymetry.
  - For SB: <Position Long>;<Position Lat> and <Depth Min>.
  - For MB: <Position Long>;<Position Lat>;<Depth Min>;<Depth Max>;<Depth Average>; <Depth StDev>; <Number of Soundings> and <CDI ID>.
- The grid resolution is 60x60m (1/32’).
- Delivering CDI metadata of the new SB- and MB-surveys for import in *SeaDataNet Metadata Bank*.
- Import metadata of the composite DTM in the European *Metadata Bank SEXTANT*. 
Bathymetric Database TRITON

- Migration of SB point clouds and corresponding grids of 5x5m, 10x10m and 20x20m with metadata in XML format in the Bathy Database TRITON (15500 imported data sets)
- Migration of MB and LiDAR grids 1x1m with corresponding metadata in XML format (4300 imported data sets)
All the necessary tools for production
Conversion CARIS ASCII to EMODnet ASCII

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Generate CDIs with MIKADO in 2014

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Generate CDIs with PYTHON in 2015

- Selecting survey from the TRITON Bathy Database
- Reading metadata
- Reading GML template MIKADO
- Completion of metadata in the CDI

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Both the CDI Data Discovery and Access service have been upgraded and now make use of the ISO19139 XML formats and have become INSPIRE compliant. Moreover all SeaDataNet metadata directories now make use of the Version 2.0 of the Common Vocabularies.

Examples of CDI GML coding
Release of CDIs, Composite GRID & Surveys

- Checking the correct syntax and semantics in consultation with MARIS.
- CDIs are entered in the import site for quality control: [http://seadatanet.maris2.nl/v_cdi_v3_import/search.asp](http://seadatanet.maris2.nl/v_cdi_v3_import/search.asp).
- Entering the composite DTM (60x60m) in EMODNet portal site: [http://portal.emodnet-bathymetry.eu](http://portal.emodnet-bathymetry.eu).
- At the request of customers open up the required surveys after registering on our Data Portal Bathymetry: [http://bathy.agentschapmdk.be](http://bathy.agentschapmdk.be).

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Searching CDIs in SeaDataNet

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2243_EMODNet Regional DTM of the Belgium Continental Shelf (Version 3)

Abstract
Source data for the EMODNet DTM for the Belgium Continental Shelf (BCP) is compiled by the Vlaamse Hydrografie (http://www.vlaamsehydrografie.be/) at a resolution of 60x60 meter.
The data set covers the Belgium Continental shelf area.

Keywords

Resources
Metadata | Metadata(XML) | (PDF) |

2243_EMODNet Regional DTM of the Belgium Continental Shelf (Version 2)

Abstract
Source data for the EMODNet DTM for the Belgium Continental Shelf (BCP) is compiled by the Vlaamse Hydrografie (http://www.vlaamsehydrografie.be/) at a resolution of 125x125 meter.
The data set covers the Belgium Continental shelf area.

Keywords

Resources
Metadata | Metadata(XML) | (PDF) |
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Dataportal: gateway to depth and height data
Own customized Dataportal Bathymetry
 Further plans


• For a number of data sets there are concrete plans for further opening to INSPIRE:
  ▪ Combined bathymetric grid Belgian Continental Shelf, Canal Ghent-Terneuzen and River Scheldt.
  ▪ Bathymetric and terrestrial surveys.
  ▪ Sea areas and coastline.

• Delivering Composite Grid BCP on behalf of EU Coastal Mapping Project:
  ▪ Resolution 30x30m within the 12-mile zone.

• Creating a Composite Grid BCP with multi-resolution on behalf of EU EMODnet Project:
  ▪ Resolution 30x30m within the 12-mile zone.
  ▪ Resolution 60x60m outside the 12-mile zone.
Thank you for your attention