Bathymetric database of the Baltic

MONA LISA
MOTORWAYS & ELECTRONIC NAVIGATION BY INTELLIGENCE AT SEA

Hans Öiås, Swedish Maritime Administration

Co-financed by the European Union
Trans-European Transport Network (TEN-T)

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EU Project: Subactivity 3.2:
Baltic Sea harmonised depth model

The Baltic Sea Hydrographic Commission (regional IHO organ) has recognized the need to establish a common database of bathymetric data for the Baltic Sea Area. Below mentioned actions will bring cooperation between Baltic Sea Countries in this direction.

- Study and develop a system for exchange of high density bathymetric …..
- Identify existing regulations concerning depth data in the Baltic Sea States.

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- Develop specification of common harmonized datasets including a common application schema for bathymetry, as part of Geospatial information
- Develop proposals concerning storage, maintenance, exchange and distribution of the bathymetric data. A concept of a “virtual” database and distribution by metadata, view and download services in line with the Inspire directive should be studied.

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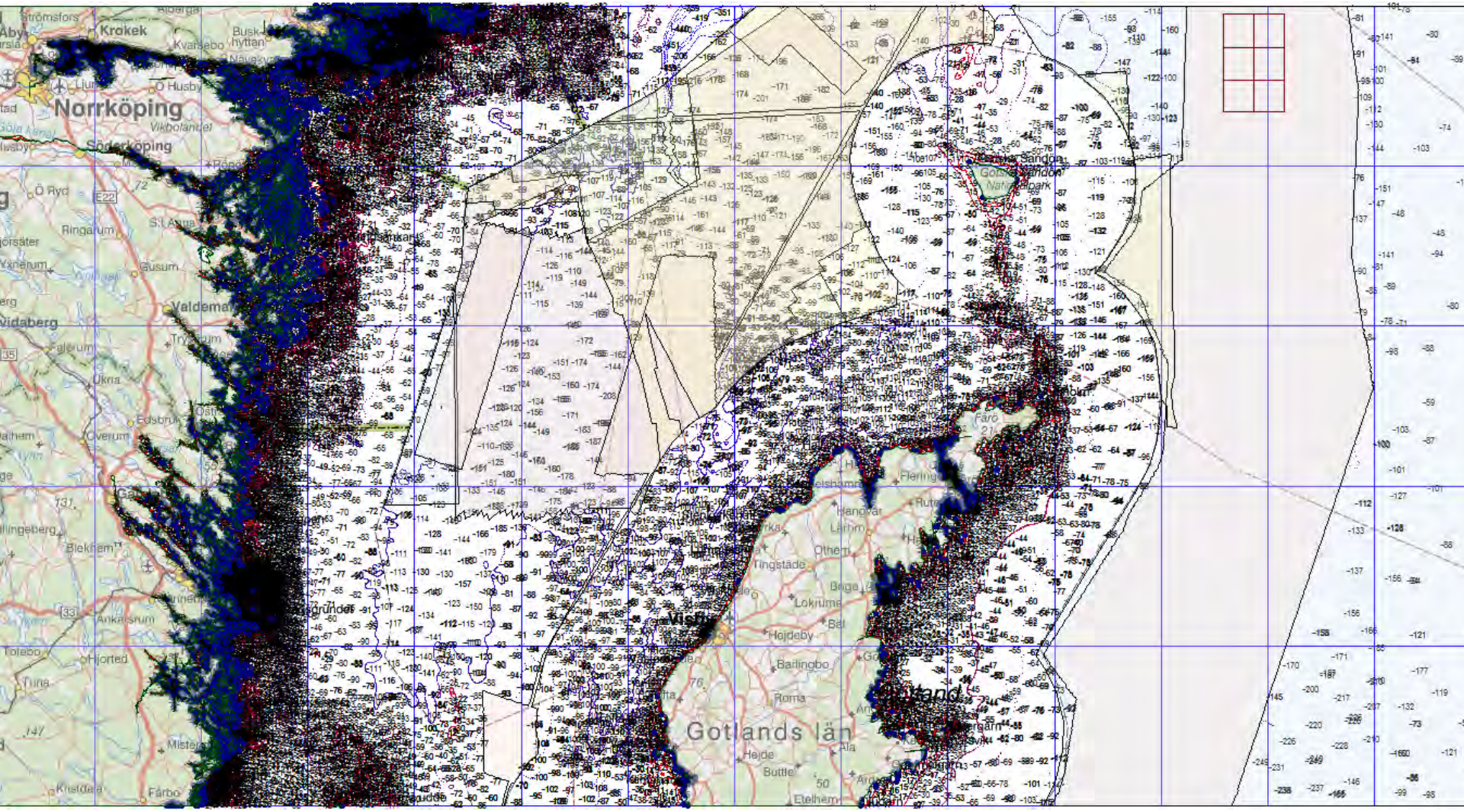
Challenges with modelling



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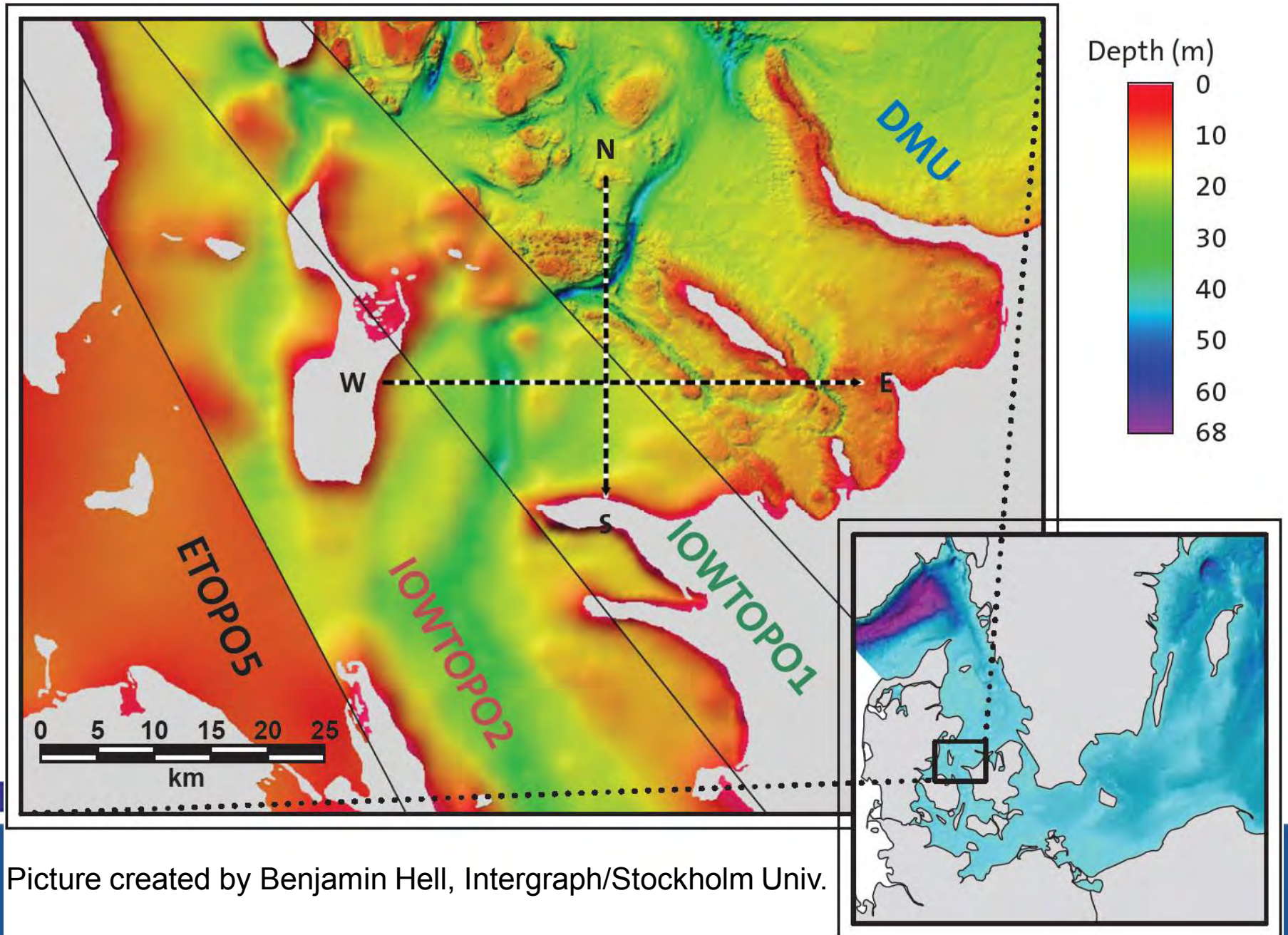
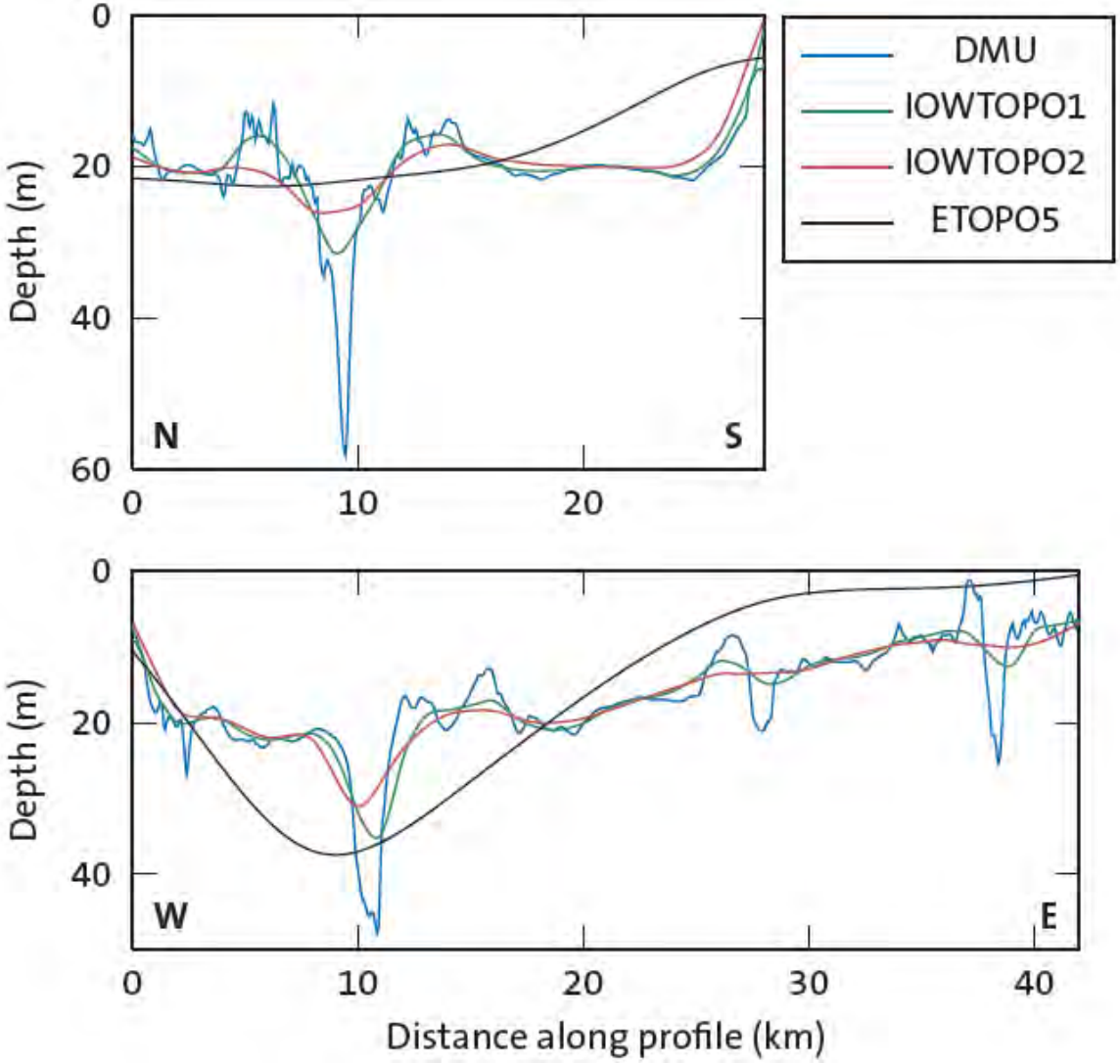
Grey areas covered by Multibeam

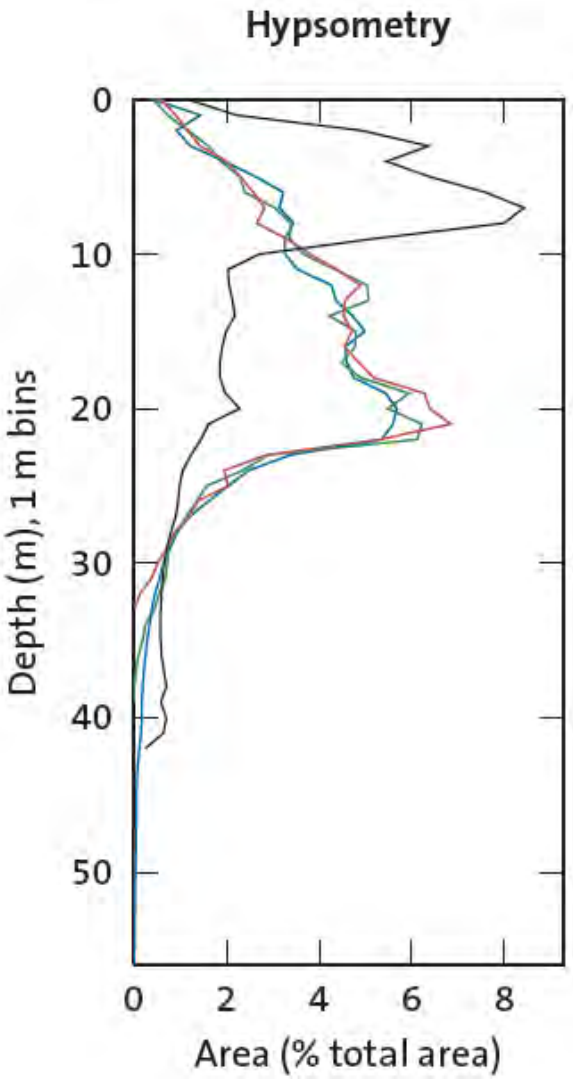
Existing Models



Picture created by Benjamin Hell, Intergraph/Stockholm Univ.

Enhancement by resolution



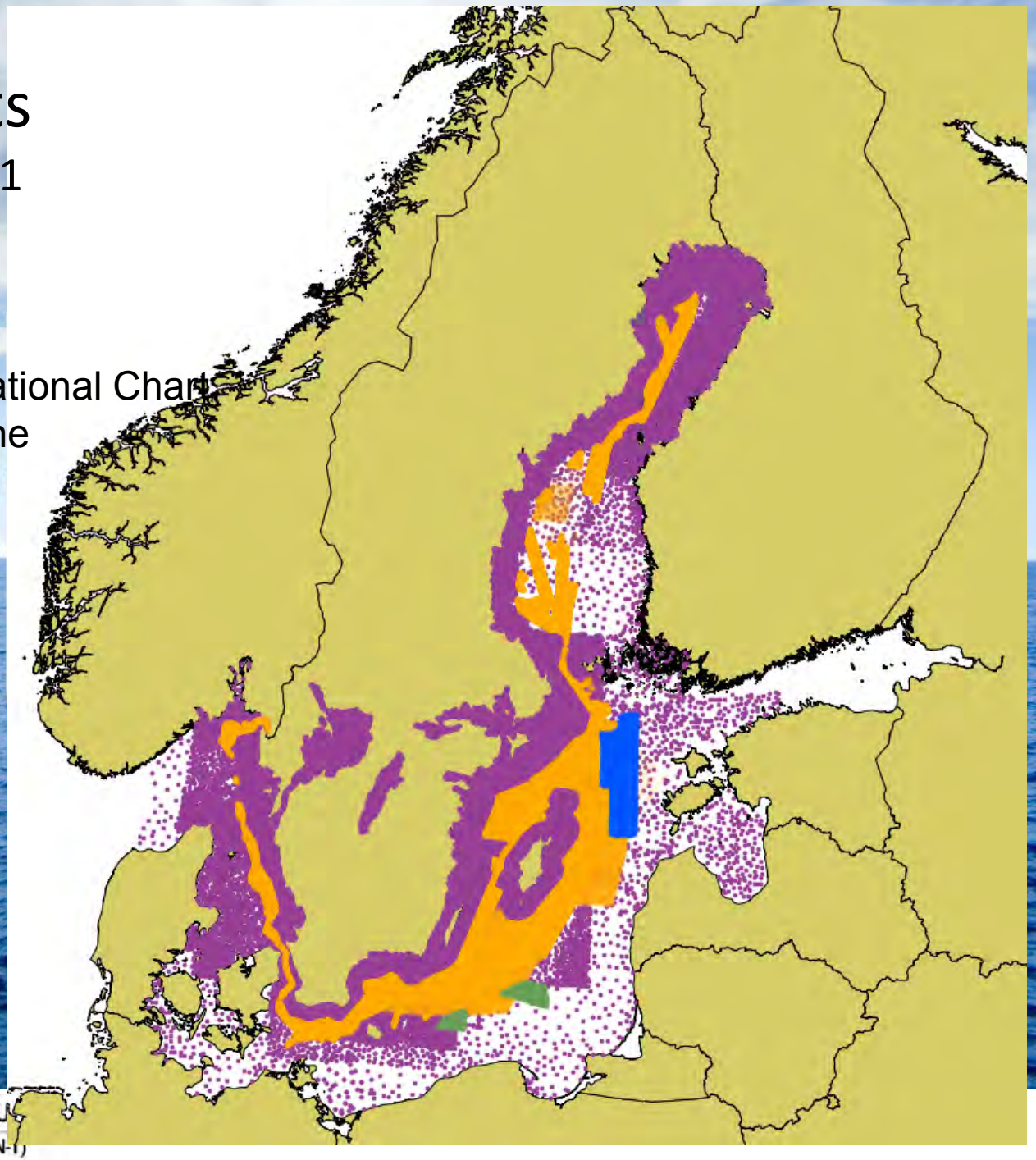


Picture created by Benjamin Hell, Intergraph/Stockholm University

Datasets

2012-05-31

- Data from Swedish Navigational Chart
- Data from Economical Zone
- Estonian test data set
- Polish test data sets



Proj: UTM34

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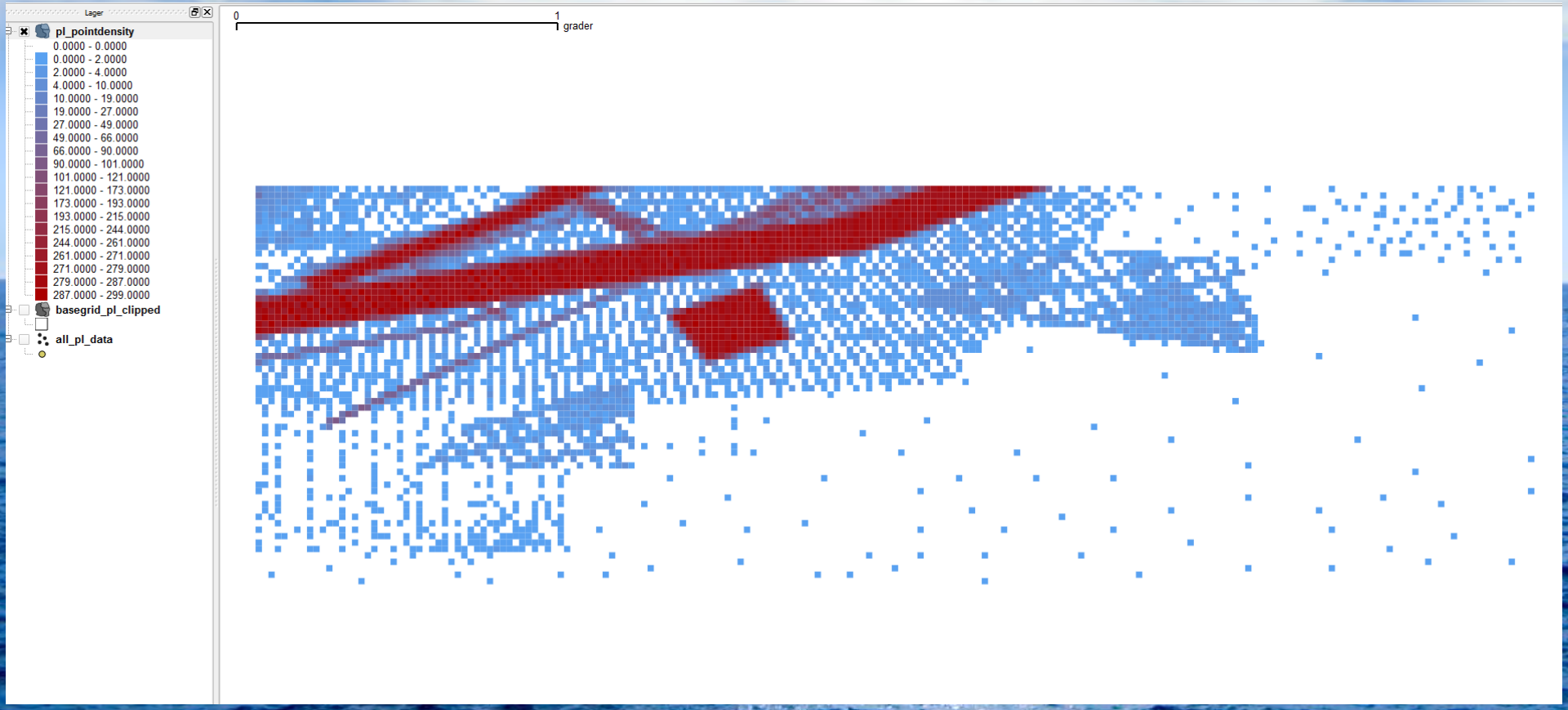
Point density



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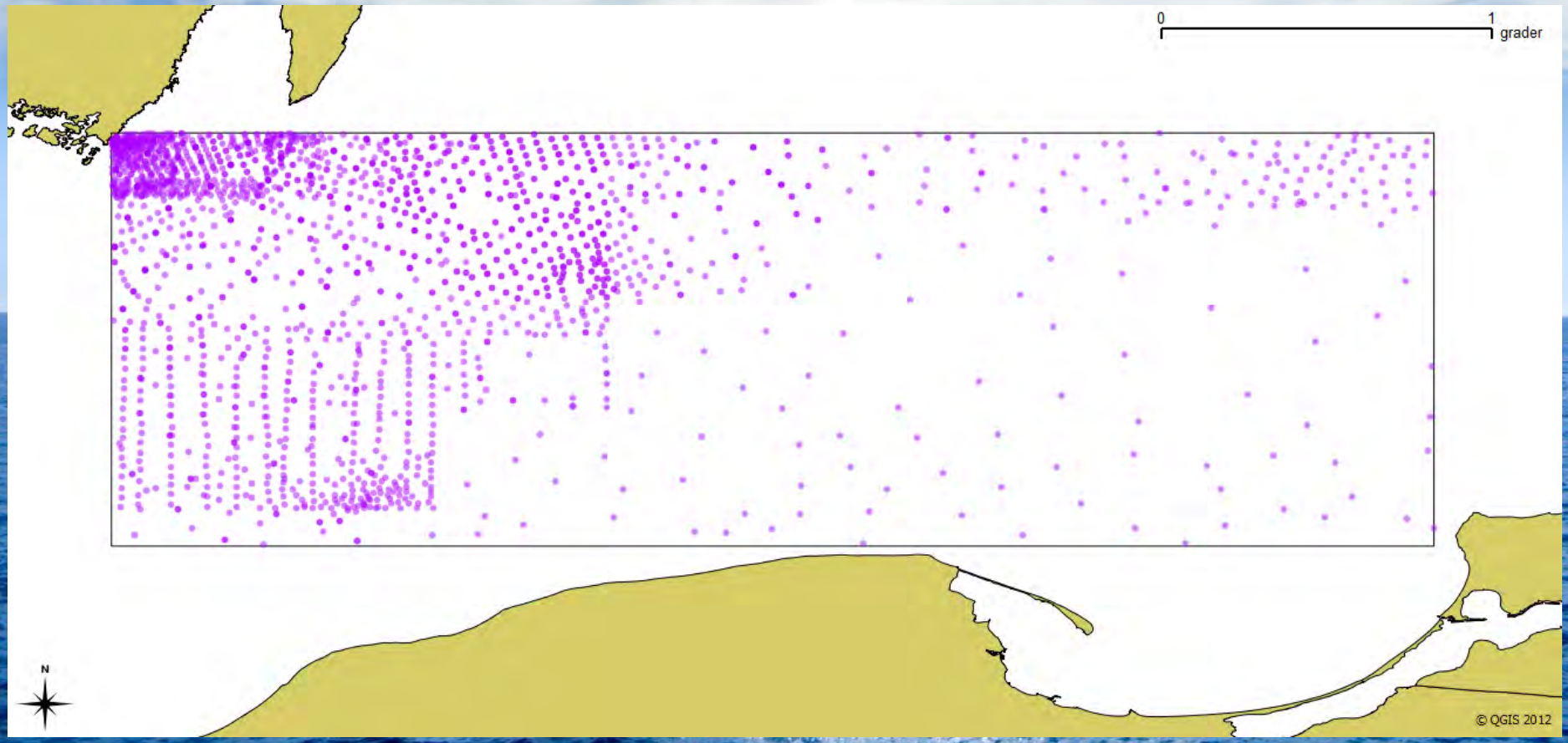
- Data from Swedish Navigational Chart

Data Coverage #1



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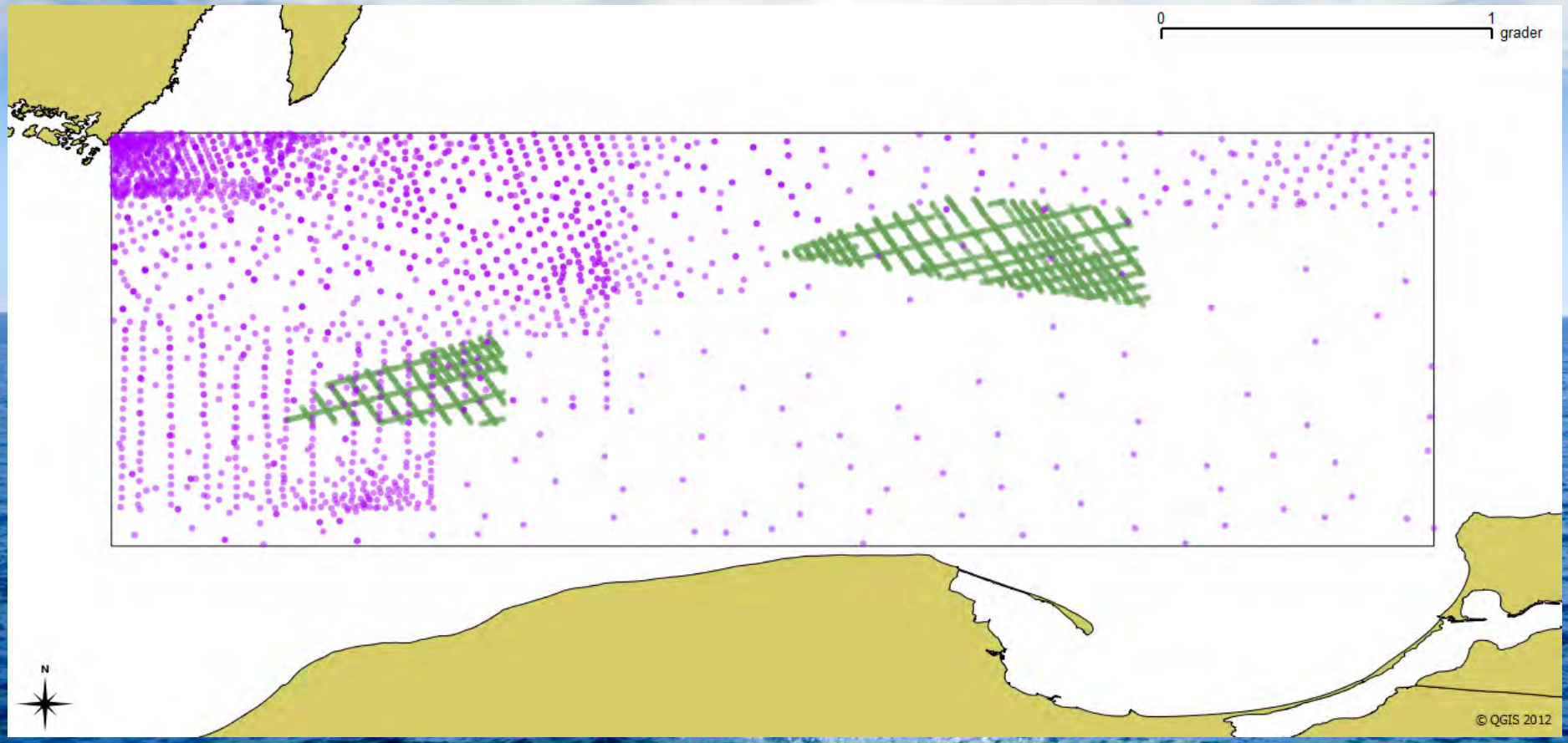
- Data from Swedish Navigational Chart
- Polish test data sets

Data Coverage #2



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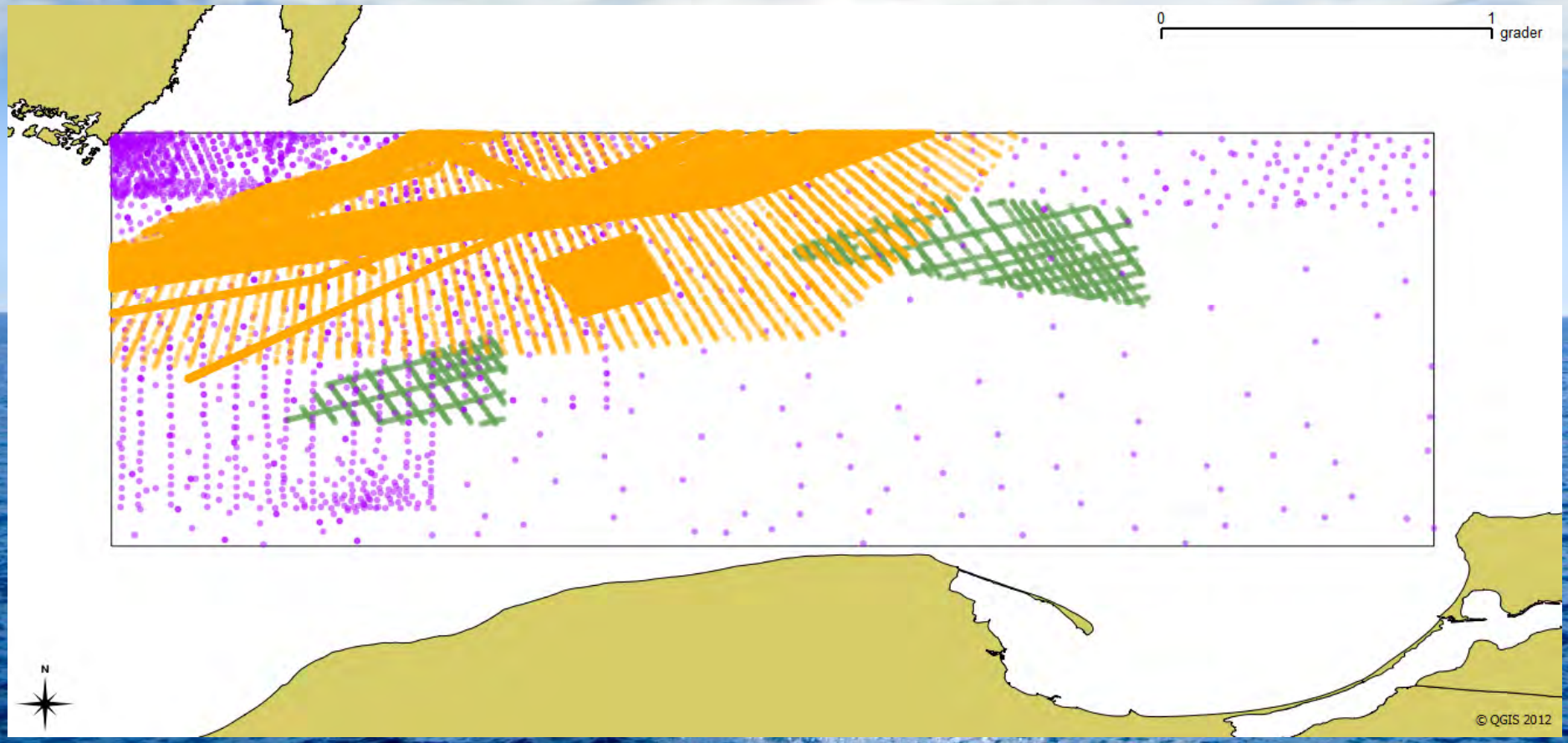
Data Coverage #3



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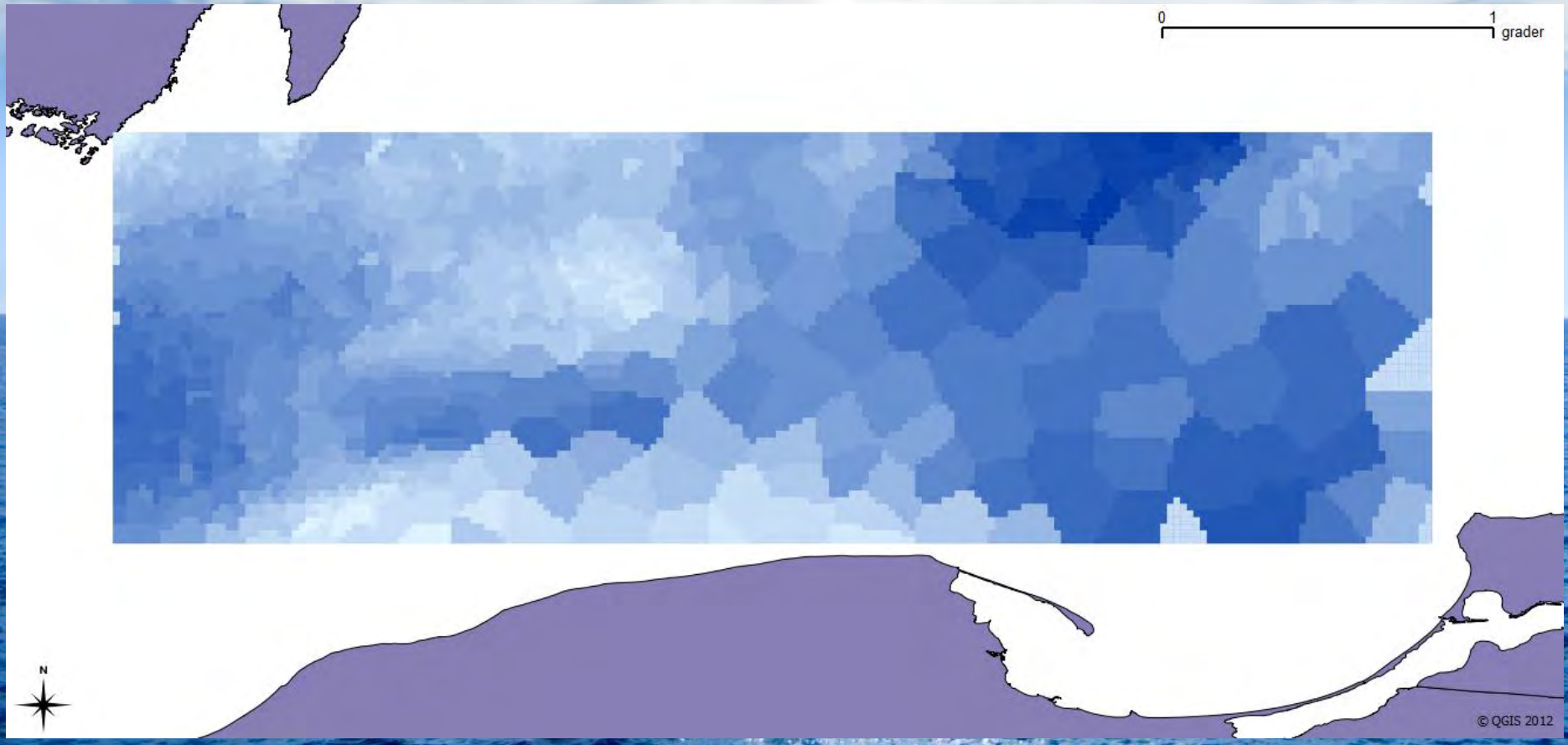
- Data from Swedish Navigational Chart

Grid Result #1



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- Data from Swedish Navigational Chart
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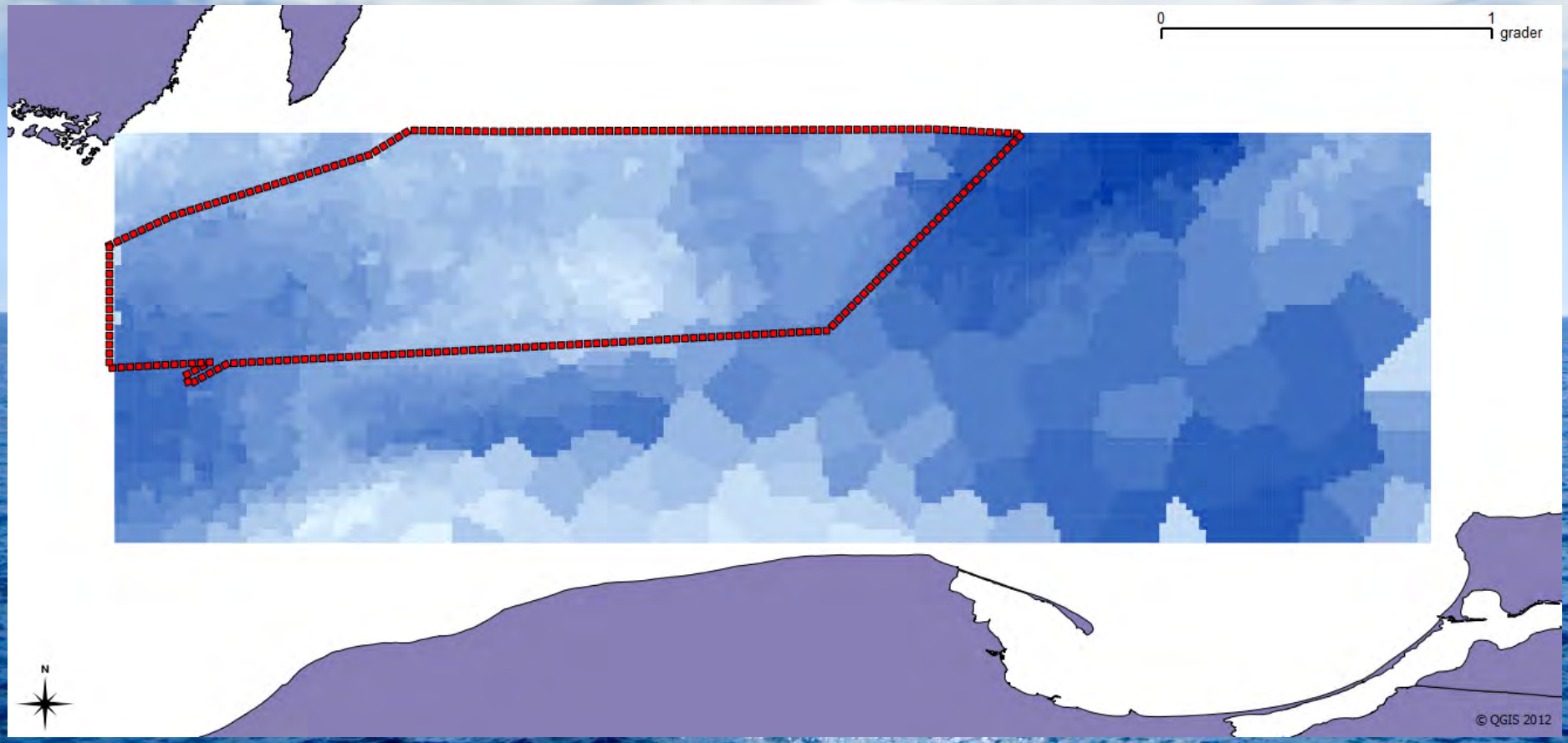
Grid Result #2



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- Data from Swedish Navigational Chart
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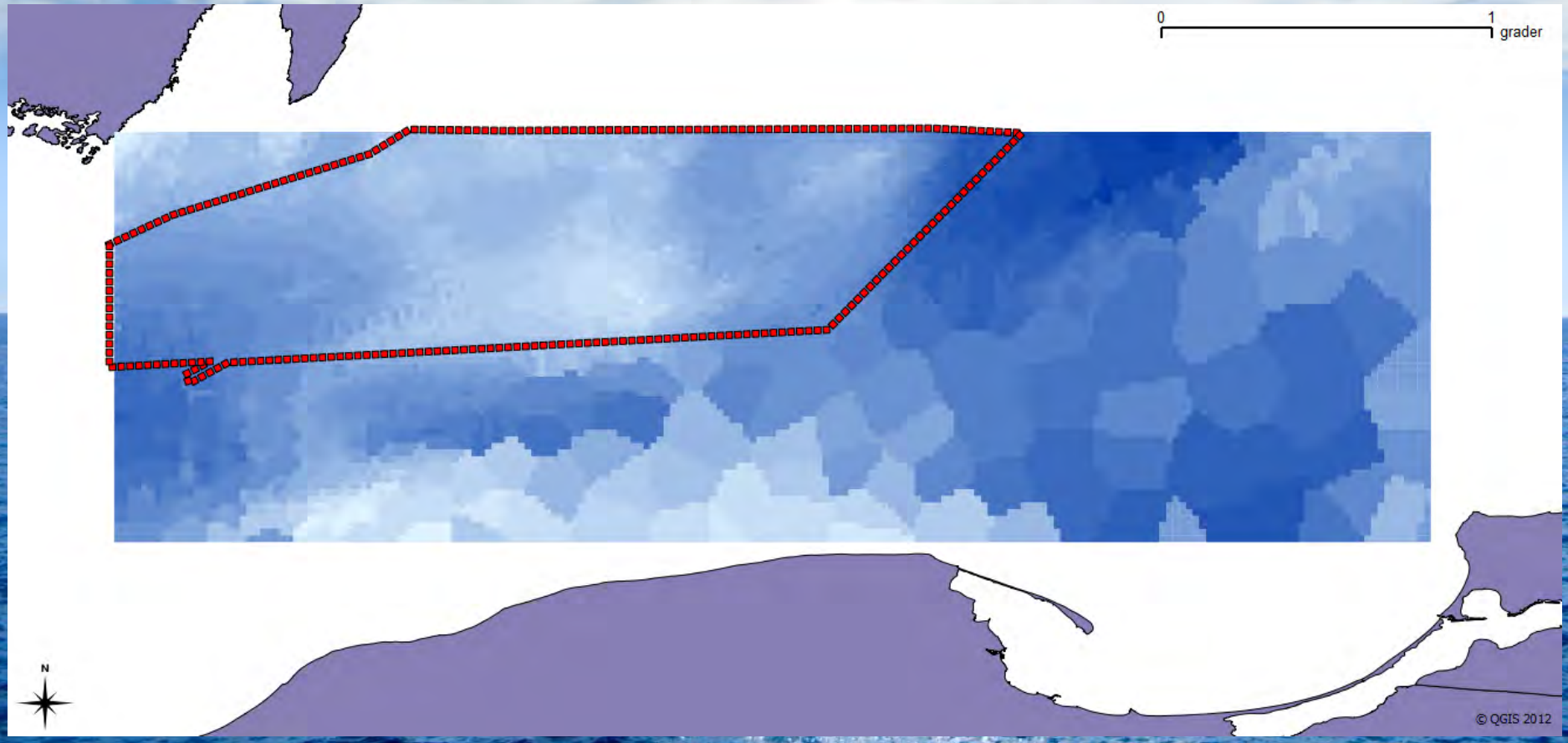
Grid Result #3



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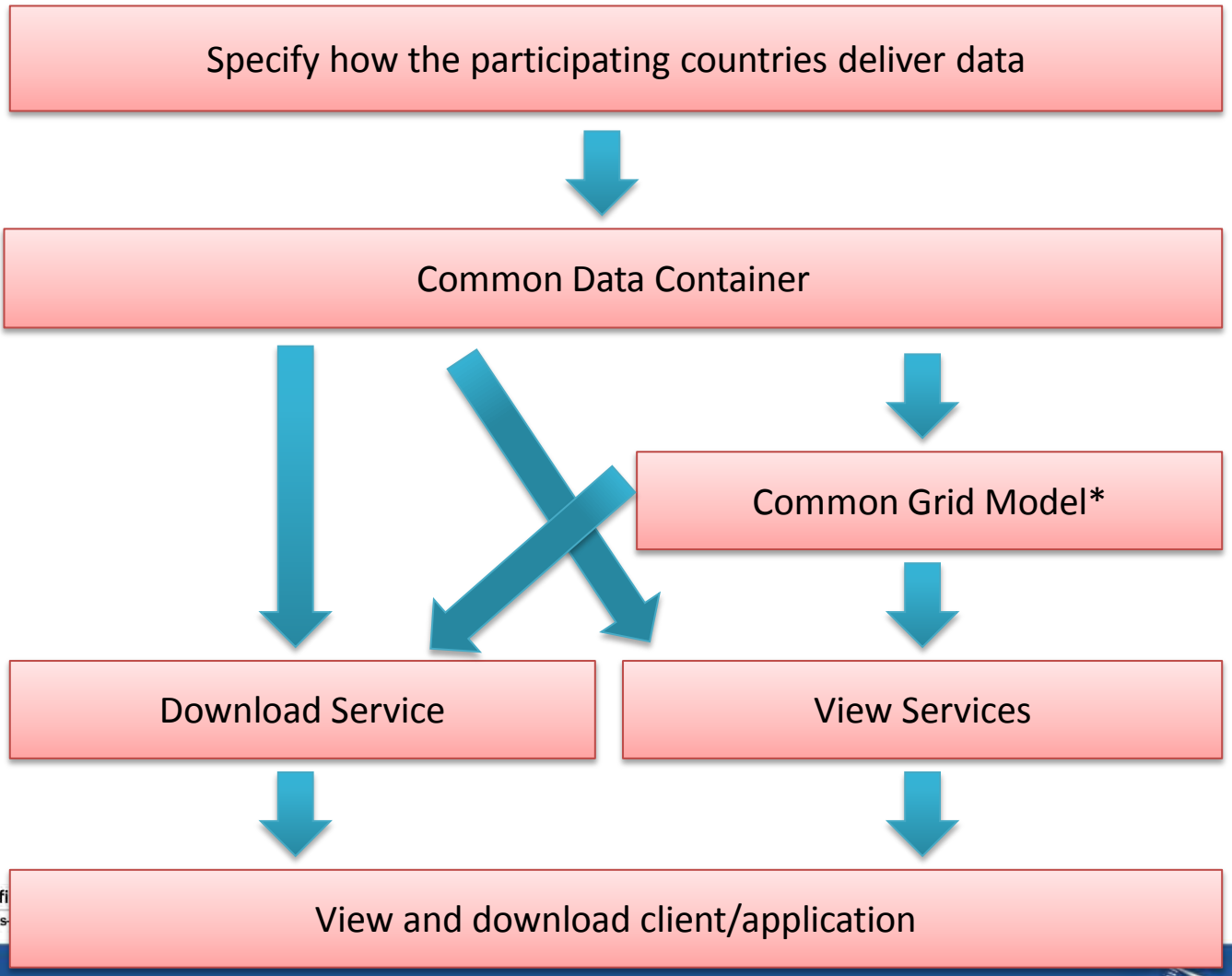
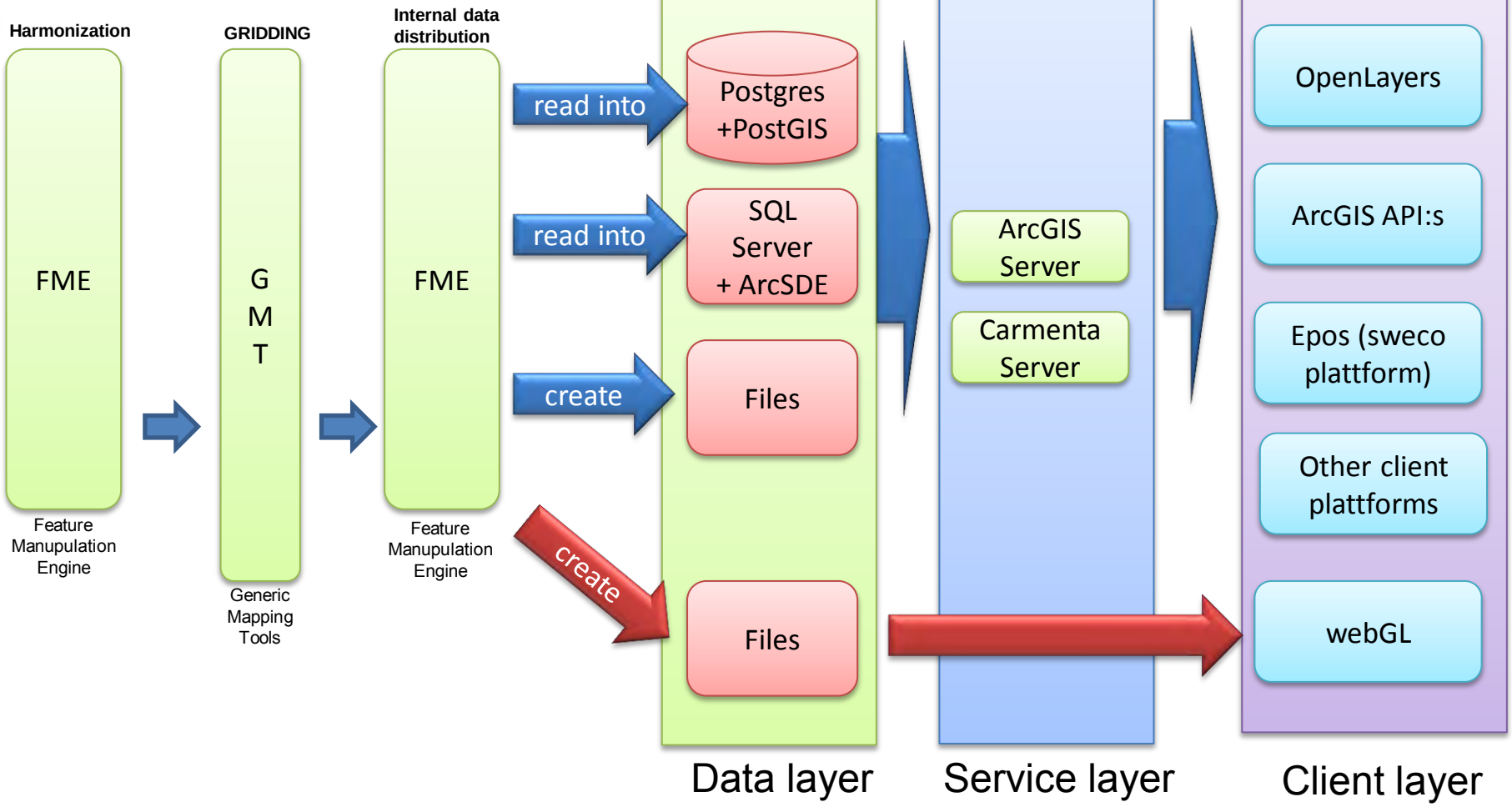
Conceptual Design



Participating countries

- Sweden
- Finland
- Germany
- Russia
- Estonia
- Poland
- Latvia
- Denmark
- Lithuania
- Norway?

Possible architectural design tracks (based on IT-environment at SMA)



Products, possible to deliver this way:

- Depth countours (GML/shape/pdf, 3D-pdf/images)
- Raw data (grid or ascii)
- Interactive 3D-viewing via webGL

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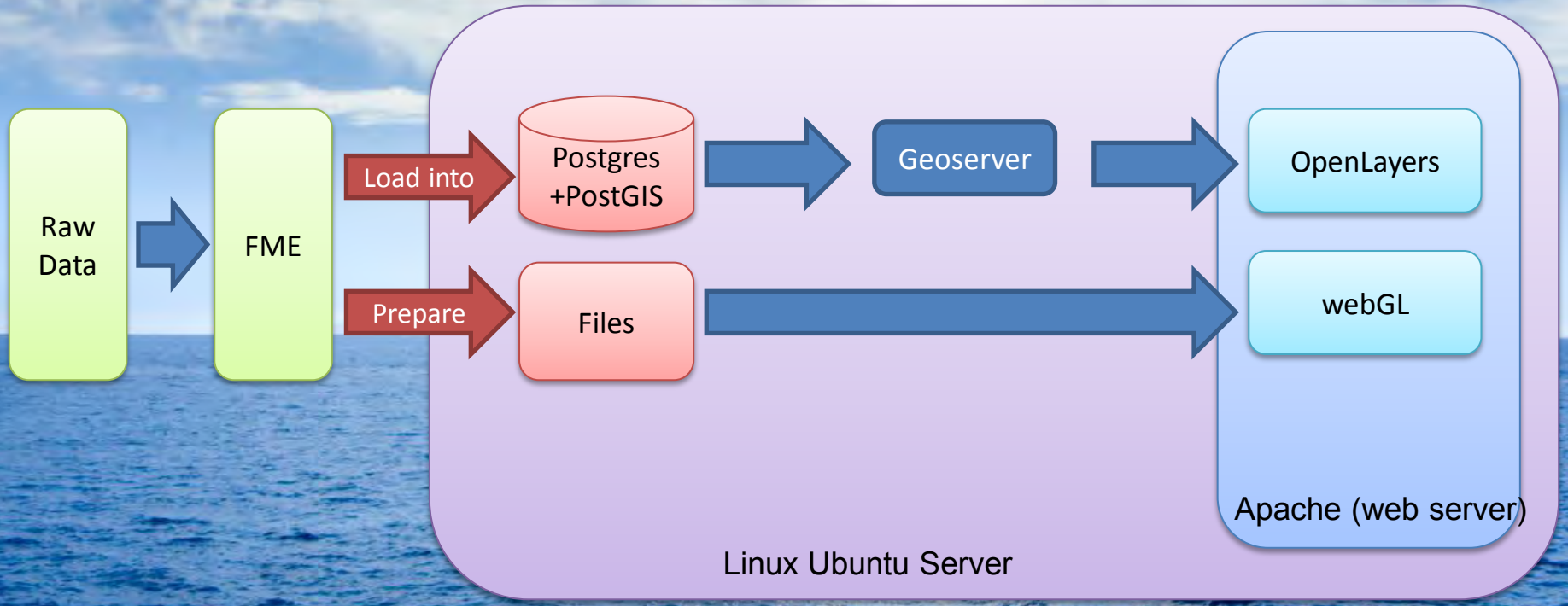
Architecture of the Prototype for publishing, view and download bathymetric data



- Data download (ascii or shape)
- 3D-viewing via webGL-client

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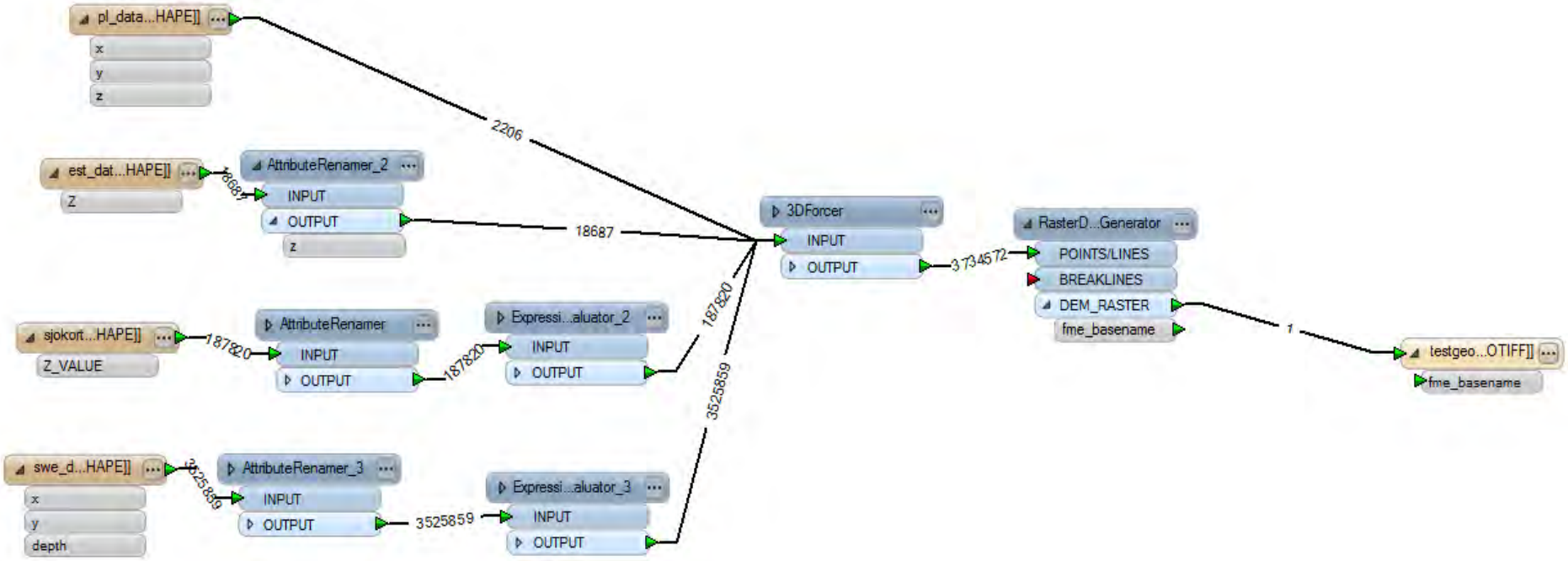
Demodata

Created by FME and the tool RasterDEMGenerator.



[Demogrid]

(Run on an old slow Lap-Top)

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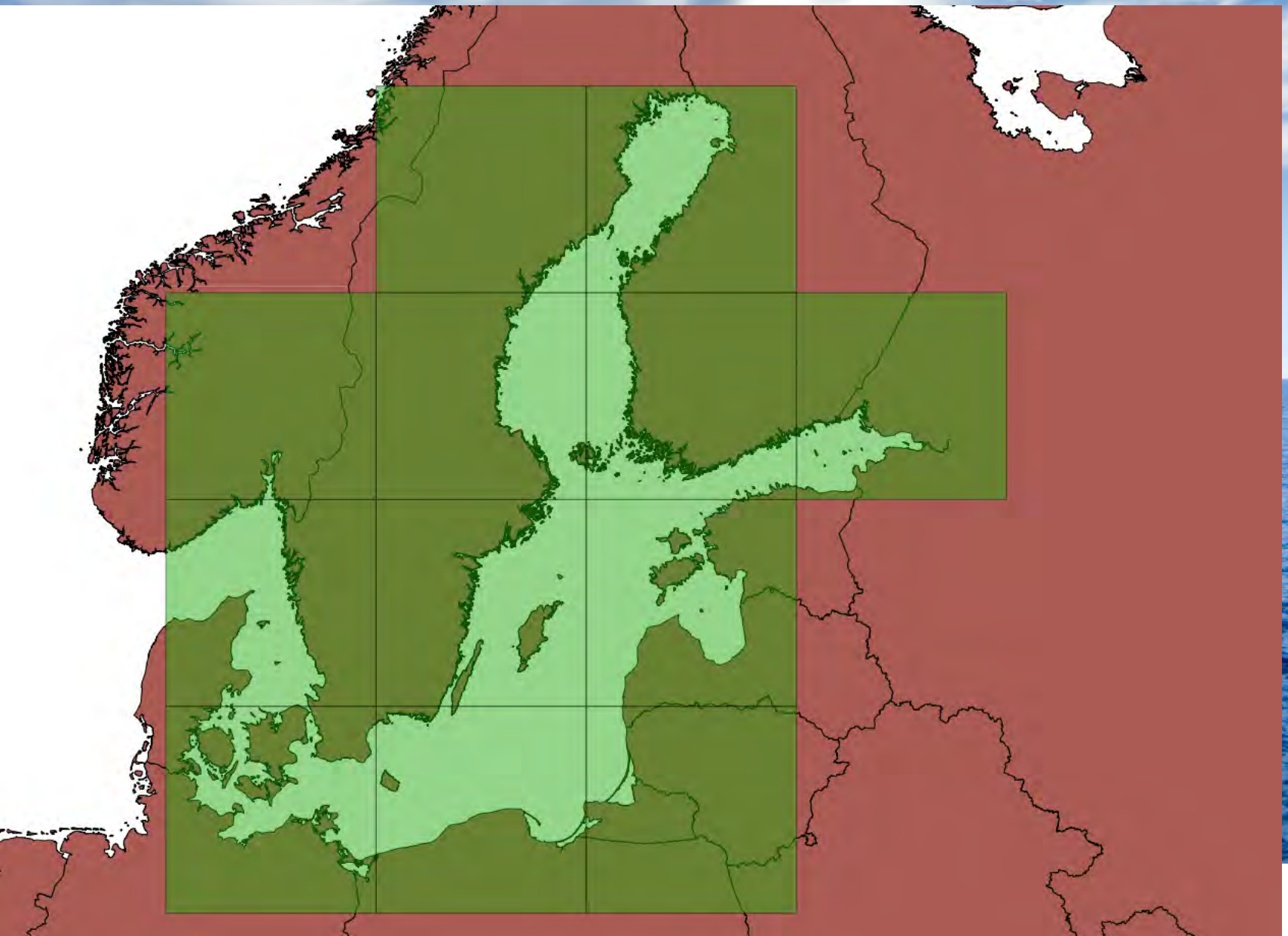
Suggested coverage E 9-31 deg N 53-66 deg



Neighbouring EU projects

MonaLisa 3.2
Ten-T + Regeringen

Sweden + EU
all BSCH members

EMODNet
Maritime and Fischeries

Private company develops services after tendering. At present date MARIS from Holland have the contract.

Baltic Sea Region / Baltic Master II
European Regional Development Fund

Maritime Institute Gdansk
EuroGOOS / BOOS/ HIROMB
http://www.balticmaster.org
http://eu.baltic.net/

All are supposed to use existing data from ”Data providers”.

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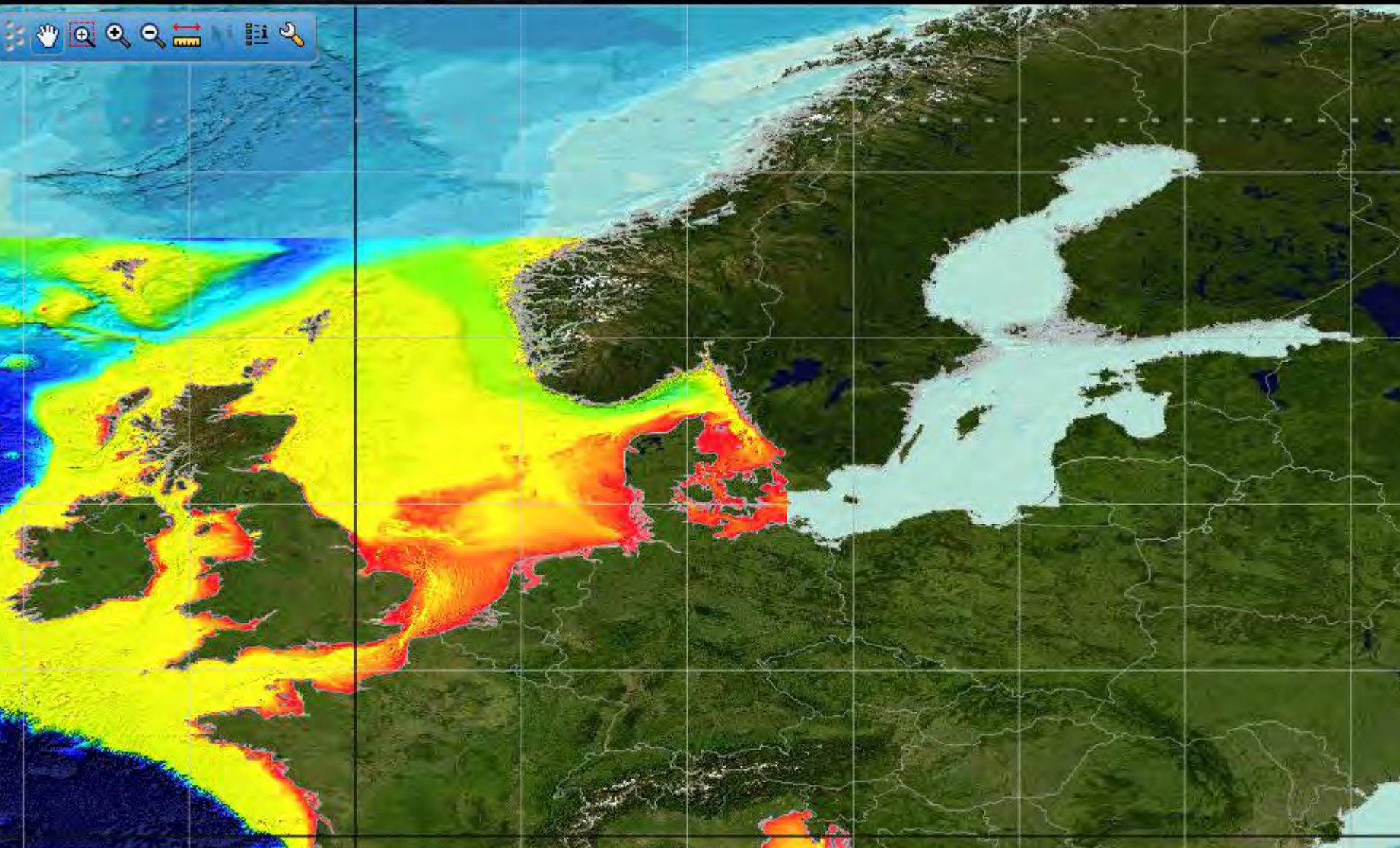
EMODnet
European Marine Observation and Data Network

Pilot portal for Hydrography

ge | Retrieve depth | Depth profile



Problems ?

- BSHC - HO needs to provide data to several parties.
- The right to use the data is signed to private companies, leads to minimized competition in the procurements for EMODNet.
  Hard demands that a new contractor shall have services up and running already three months after contract.
- No regular updates of the models..
- A BSHC portal gives the countries HO more control over what hapens to the data.
  Only official HO data is used in the modelling. In other modells all available data is used as input to the model, like OLEX and other private actors.
- Irellevant demand on 200m (1/8 NM) resolution from EU (for EMODNET).
  Within BSBDWG we aim at a common model of 500m as a first step.

Present workplan.

- Test the latest enhanced gridding method from Stockholm University. (used also by GEBCO and IBCAO)
- Participate and present our work at the coming GEBCO conference 1-4 of October.
- Purchase and Install a reliable storage server capable of handling heavy load.
- Collect data, metadata and the right to use it for public access in a BSHC bathymetry model and if allowed also distribution of the provided raw data. Links to Inspire driven WMS services can also be handled.
- Continue with testing and creation of a first homogenous bathymetric model in 500m resolution for beta testing. *(We aim to have a first BETA model available in a portal at the end of 2012 or latest beginning of 2013)*

The BSHC17th Conference.

The BSHC 17th Conference did consented to:

1. A BSHC Bathymetrical portal will be localized at SMA in Norrköping, Sweden.
2. Data provided from each country is stored by SMA and used for computation of a homogenous Baltic bathymetry model.
3. The creation of a homogenous bathymetrical model with 500m resolution for public use.