

EUMIS - an open portal framework for interoperable marine environmental services

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Outline

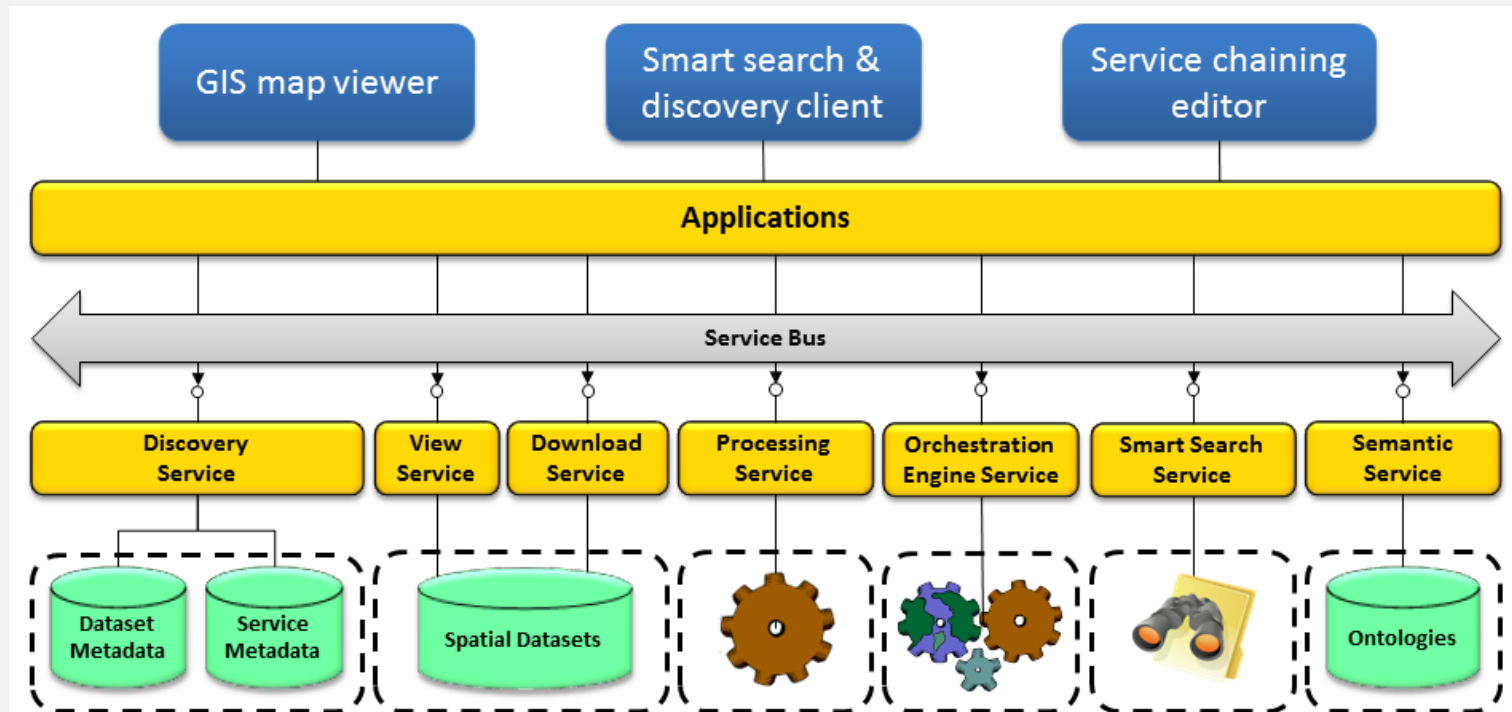
- Objectives and concepts
- Pilots
- Ontologies and semantic framework
- EUMIS portal and components
 - GIS Viewer
 - Discovery Client
 - Service Chaining Editor
- Conclusion

Objectives and concepts

- NETMAR aims to develop a ***pilot European Marine Information System (EUMIS)*** for searching, downloading and integrating satellite, in situ and model data from ocean and coastal areas. It will be a user-configurable system offering ***flexible service discovery, access and chaining facilities*** using OGC, OPeNDAP and W3C standards. It will use a ***semantic framework coupled with ontologies*** for identifying and accessing distributed data, such as near-real time, forecast and historical data. EUMIS will also enable further processing of such data to generate ***composite products and statistics*** suitable for decision-making in different marine application domains.

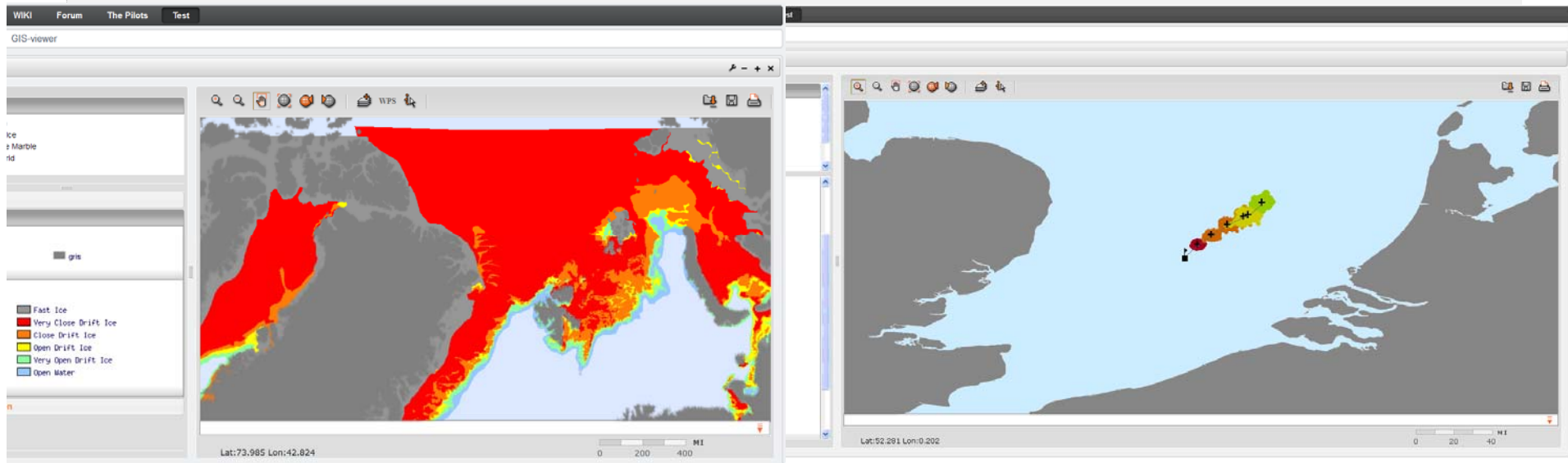
Objectives and concepts

- NETMAR Service Oriented Architecture
 - Portal and components by JSR-168 JSR-286
 - Services by OGC, W3C and OASIS standards

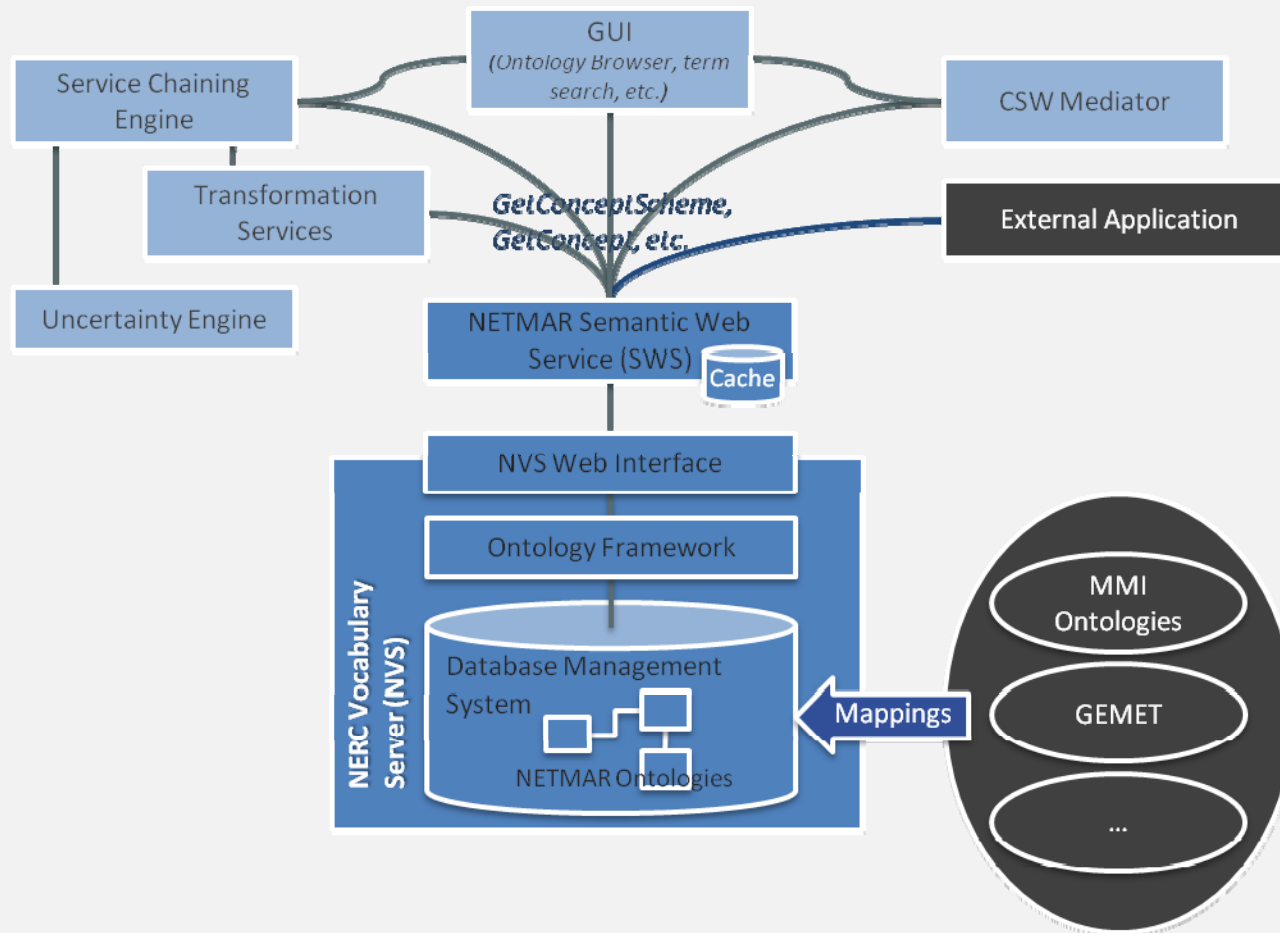


Pilots

- Pilots in NETMAR
 1. Arctic Sea Ice monitoring and forecasting
 2. Oil spill forecasting and shoreline cleanup
 3. Ecosystem monitoring and modelling
 4. ICAN (International Coastal Atlas Network)

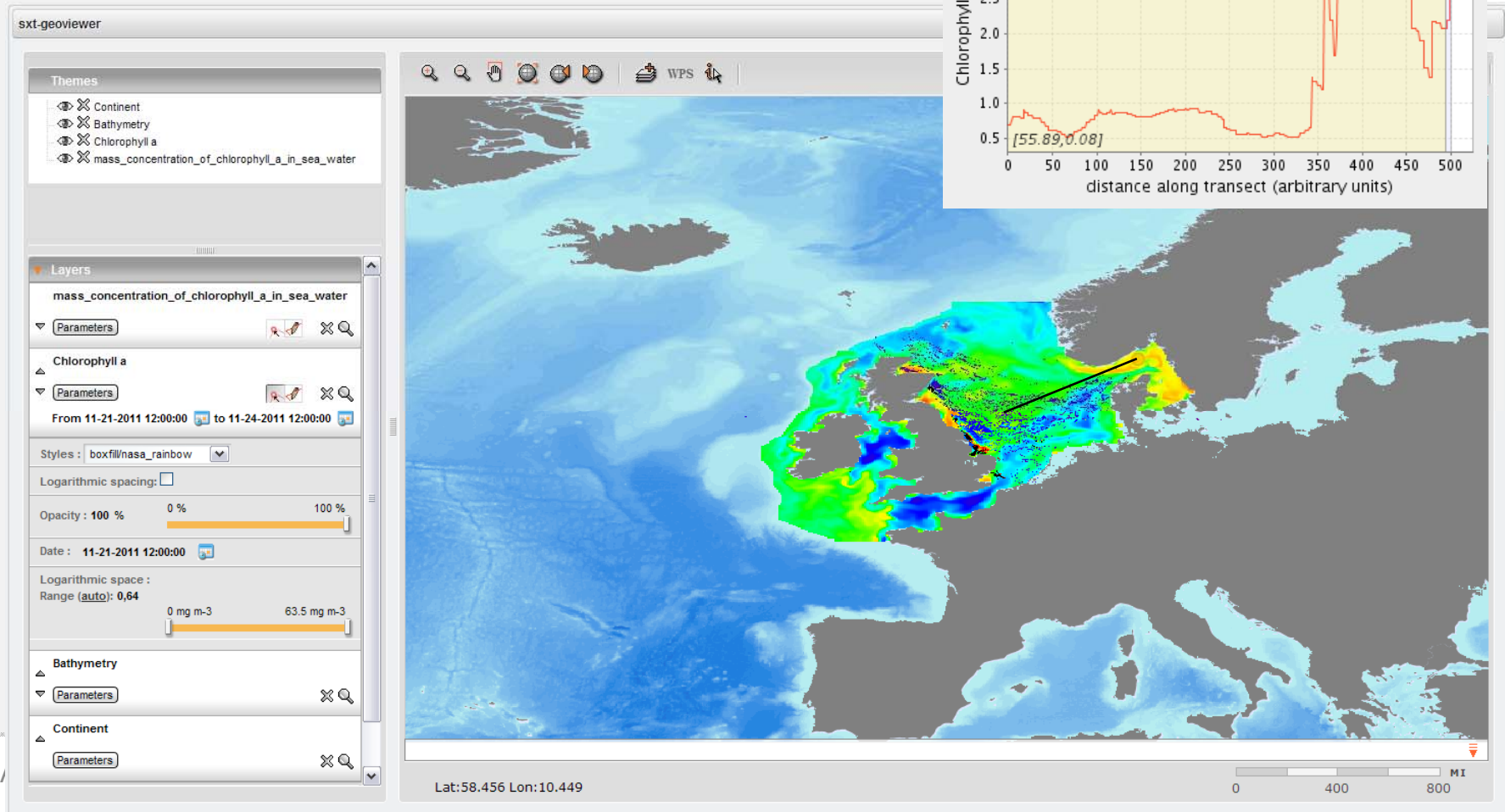


Ontologies and semantic framework



EUMIS portal and components

- GIS Viewer



EUMIS portal and components

- GIS Viewer

Welcome WIKI Forum The Pilots **Test**

EUMIS Test GIS-viewer

sxt-geoviewer

Themes

- Met No
 - Ice
 - Blue Marble
 - World

Layers

Legends

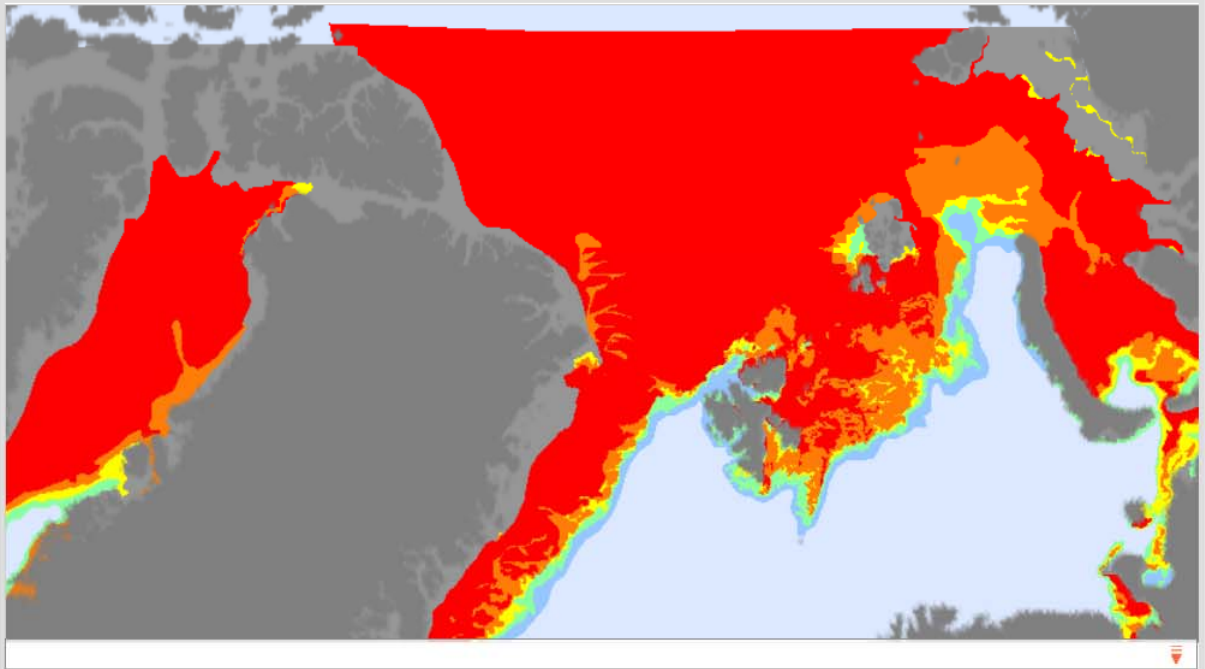
World

- gris

Ice

- Fast Ice
- Very Close Drift Ice
- Close Drift Ice
- Open Drift Ice
- Very Open Drift Ice
- Open Water

Localization



Lat:73.985 Lon:42.824

0 200 400 MI

EUMIS portal and components

- Discovery Client

The screenshot displays the EUMIS portal interface with several overlapping windows. The 'Home' windows show navigation options: 'Browse Ontology' (with a diagram icon) and 'Search Data' (with a 3D area chart icon). The 'Ontology Browser' window is partially visible at the top. The 'Geo Finder' window is also partially visible. The 'Metaview' window is the largest and shows a 3D area chart with the text 'No Threshold Available' overlaid. Below the chart, the title is 'OSI SAF Ice concentration for the Northern Hemisphere'. The description states: 'Ice concentration from OSI SAF for the Northern Hemisphere. The OSI SAF Sea Ice data are developed and produced by the Norwegian and Danish Meteorological Institutes as a part of the OSI SAF project for EUMETSAT'. Below the description is a table of metadata.

Identifier	f5632725-4a1d-44a8-be92-4e14c821fd7b@http://netmar.met.no/geonetwork/
Alternate Title	Ice concentration
Creation Date	2009-08-21T21:37:11Z
Publication Date	2009-08-21T21:37:11Z
Revision Date	2009-08-21T21:37:11Z
Descriptive Keywords	http://vocab.nerc.ac.uk/collection/P22/current/28 , http://vocab.nerc.ac.uk/collection/P01/current/SICEAMSR , http://vocab.nerc.ac.uk/collection/P06/current/UPCT
Temporal Extent	Begin Date: 2009-05-26T21:02:31.157693Z

EUMIS portal and components

- Service Chaining Editor

EUMIS - Service chain editor

WSDL +
Workspace +
Service List +
Service I/O x
Export +

input843 x

Label:
URL:
/testdata/elev_srtm_30m.tif
OR
LiteralData:

ExecuteProcess_r.watersh x

- a
- depression
- blocking
- grass_band_number
- elevation
- threshold
- memory
- s
- convergence
- max_slope_length
- grass_resolution_ew
- flow
- b
- m
- undefined
- disturbed_land
- grass_resolution_ns
- half_basinResult
- accumulationResult
- basinResult
- drainageResult
- slope steepnessResult

Input and Output

- Input container
- Output container
- Input GIS container
- Output GIS container

EUMIS portal and components

- Service Chaining Editor

The screenshot displays the Taverna Workbench 2.3.0 interface. The top menu bar includes File, Edit, Insert, View, Workflows, and Advanced Help. The main window is divided into several panels:

- Service panel:** Located on the left, it features a search filter, a 'Clear' button, and an 'Import new services' button. Below these are sections for 'Available services', 'Service templates', 'Local services', and a WSDL entry at <http://rsg.pml.ac.uk/wps/generic.cgi?WSDL>.
- Workflow explorer:** Located below the service panel, it shows a hierarchical tree of workflow components, including 'input', 'IceClassMapResult', 'textResult', 'ExecuteProcess_r.colors', and 'Workflow15'.
- Workflow editor:** The main workspace on the right, titled 'Workflow19 from /home/jesus/Downloads/_untitled_194053.t...', displays a complex workflow diagram. It consists of multiple interconnected nodes, including 'ExecuteProcess_getIceClassMapsAsar_list', 'lineFeeder', 'Split_string_into_string_list_by_regular_expression', 'filterDate', 'Filter_List_of_Strings_by_regexp', 'listDate', 'ExecuteProcess_getIceClassMapsAsarGeoTIFF_DataInputs', 'ExecuteProcess_getIceClassMapsAsarGeoTIFF', 'ExecuteProcess_getIceClassMapsAsarGeoTIFF_ProcessOutputs', 'ExecuteProcess_r.colors_DataInput', 'ExecuteProcess_r.colors', 'ExecuteProcess_r.colors_ProcessOutput', 'ExecuteProcess_r.stats_DataInput', 'ExecuteProcess_r.stats', 'ExecuteProcess_r.stats_ProcessOutput', 'ExecuteProcess_r.colors_DataInput', 'ExecuteProcess_r.colors', 'ExecuteProcess_r.colors_ProcessOutput', 'Decode_Base_64_to_byte_Array', 'Workflow input ports', and 'Workflow output ports'. The diagram shows data flow between these processes, with inputs and outputs clearly labeled.

Conclusion

- We have implemented a SOA for the EUMIS portal with a set of components
 - GIS Viewer
 - Service Chaining Editor
 - Discovery Client
 - Wiki, Forum, RSS feedsusing multiple programming languages, and deployed them within the Liferay platform.
- The first version of EUMIS was tested for the four pilots in different marine application domains. User feedback was used to improve services and components.
- Positive experience with the Java Portlet Specification standard and the portal framework. With further work EUMIS can be developed into a sustainable system.

More information

- NETMAR Public Splinter Meeting
 - Wednesday 25 April, 13:30-15:00, Room SM5
 - Presentations + Demonstrations
- NETMAR web site: <http://netmar.nerisc.no>
- Contact Torill Hamre (torill.hamre@nerisc.no)

Thank you!

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