

FP7 NETMAR and ICAN use case

Open service network for marine environmental data

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Outline

- NETMAR overview
- ICAN use case
- ICAN primary themes of interest
- Conclusions



NETMAR overview

- *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 diverse marine application domains.*



NETMAR overview

- *System concept*
 - *Portal w/access to*
 - *All data & services*
 - *Service chains*
 - *Web-GIS*
 - *Support functions*
 - *Network of services*
 - *Semantic discovery*
 - *Data Delivery*
 - *Data Processing*



Standard Protocols
(OGC, OPeNDAP, W3C)



NETMAR overview

- *Technologies*
 - *OGC WMS, WFS and WCS*
 - *OPeNDAP*
 - *OGC WPS*
 - *BPEL*
 - *RDF, OWL*
 - *Jena*
 - *OpenLayers*
 - ...



NETMAR overview

- *Use cases (pilots):*
 - UC-1: Arctic Sea Ice and Metocean Observing System*
 - UC-2: Oil spill drift forecast and Shoreline Cleanup assessment services in France*
 - UC-3: Relationships between physical and biological variables*
 - UC-4: Ecosystem model validation*
 - UC-5: International Coastal Atlas Network (ICAN) for coastal zone management*
 - UC-6: Phytoplankton blooms in Gulf of Biscay and English Channel*



ICAN use case

- Coastal web atlases (CWAs) in the ICAN network deal with a variety of thematic priorities and can be tailored to address the needs of a particular user group.
- While CWAs contain a diverse range of datasets, the inclusion of both real-time and historical data products from the operational oceanography and remote sensing communities has been more limited, often because such data has been difficult to access in terms of both data policy and data interoperability. We aim to increase the availability to such datasets, e.g. by connecting to web-based EISs (Environmental Information Systems).



ICAN use case

- ICAN issues to be addressed by NETMAR:
 - Discovery of datasets and data services
 - Connection of real-time data into Coastal Web Atlases
 - Generation of new value-added data products on the fly
 - Integration of local Coastal Web Atlas datasets into a regional/global Atlas (e.g. into the EUMIS prototype)
 - Integration of regionally/globally registered Atlas datasets into a local Coastal Web Atlas



ICAN use case

- Initial work in NETMAR has identified a need for
 - Multi-facets data discovery based on three types of metadata keywords: themes, instruments and disciplines;
 - Advanced ontology browsing allowing for the visualisation of term definitions, related terms, and ontology graph browsing;
 - Smart search functionality for allowing users to search ontology terms and data by meaning.



ICAN use case

- Other optional functionalities include: Semantic service discovery, support for multi-domain ontologies, and multilingual support.
- The ICAN prototype will be further developed based on these requirements.



ICAN use case

- NETMAR has a strong link to the ICAN Technical Working Group
- ICAN Technical Working Group activities include:
 - document and promote relevant regional/global standards and specifications
 - metadata issues
 - network services
 - data and organisational interoperability
 - ontology content and technical governance
 - supporting and responding to the user community
 - technical training of CWA developers
 - knowledge transfer



ICAN primary themes of interest

- We'd like your input on semantic requirements!
 - Themes of interest?
 - Coastal erosion
 - Sediments
 - Habitats
 - Protected areas
 - Human activities
 - ...
 - What are your priorities?



Conclusions

- NETMAR will develop a pilot European Marine Information System (EUMIS) integrating semantic data/service discovery, ontology extensions and semantic frameworks, data delivery and data processing services, and service composition w/handling of uncertainty.
- ICAN is one of the six NETMAR pilots, with strong semantic requirements for flexible discovery services
- Your input to semantic requirements is highly appreciated!
- Semantic data/service discovery will be further developed – beneficial to both ICAN and other marine communities.
- All software development is based on open standards.



Consortium



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Thank you!

NETMAR web site:

<http://netmar.nerisc.no/>

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