# ICAN Tech Team: Progress in NETMAR

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ICAN
International Coastal Atlas Network

# Overview

- What is NETMAR?
- NETMAR products
- Cookbook content

# What is NETMAR?

- EU FP7 Project
- “Open Service Network for Marine Environmental Data”
- Aims
  - Make it easier for real users to perform ad-hoc processing tasks online, in their web browser
  - Create an open and extensible platform, based on established standards and open source software

# What is NETMAR?

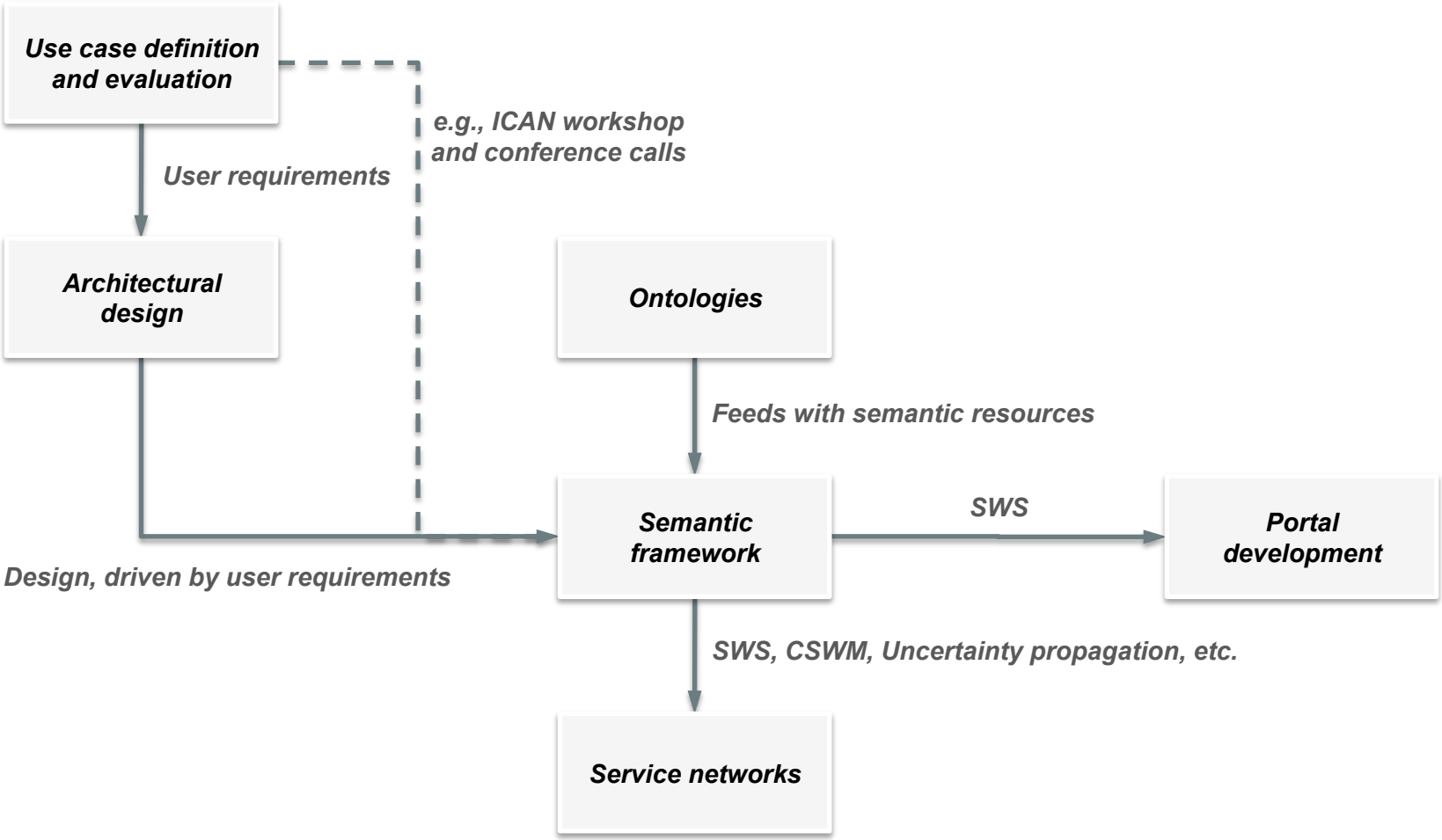
- Aims
  - Develop a novel semantic framework that enhances discovery of data and services, and with uncertainty measures available, and propagating through the service chain
  - All linked in a portal – the European Marine Information System (EUMIS)

# What is NETMAR?

- Driven by four case studies
  - ICAN
  - Monitoring Arctic Sea ice
  - Forecasting oil spill evolution
  - Processing ocean colour satellite images

NETMAR BODC SEVENTH FRAMEWORK PROGRAMME ICAN International Coastal Atlas Network

# What is NETMAR?

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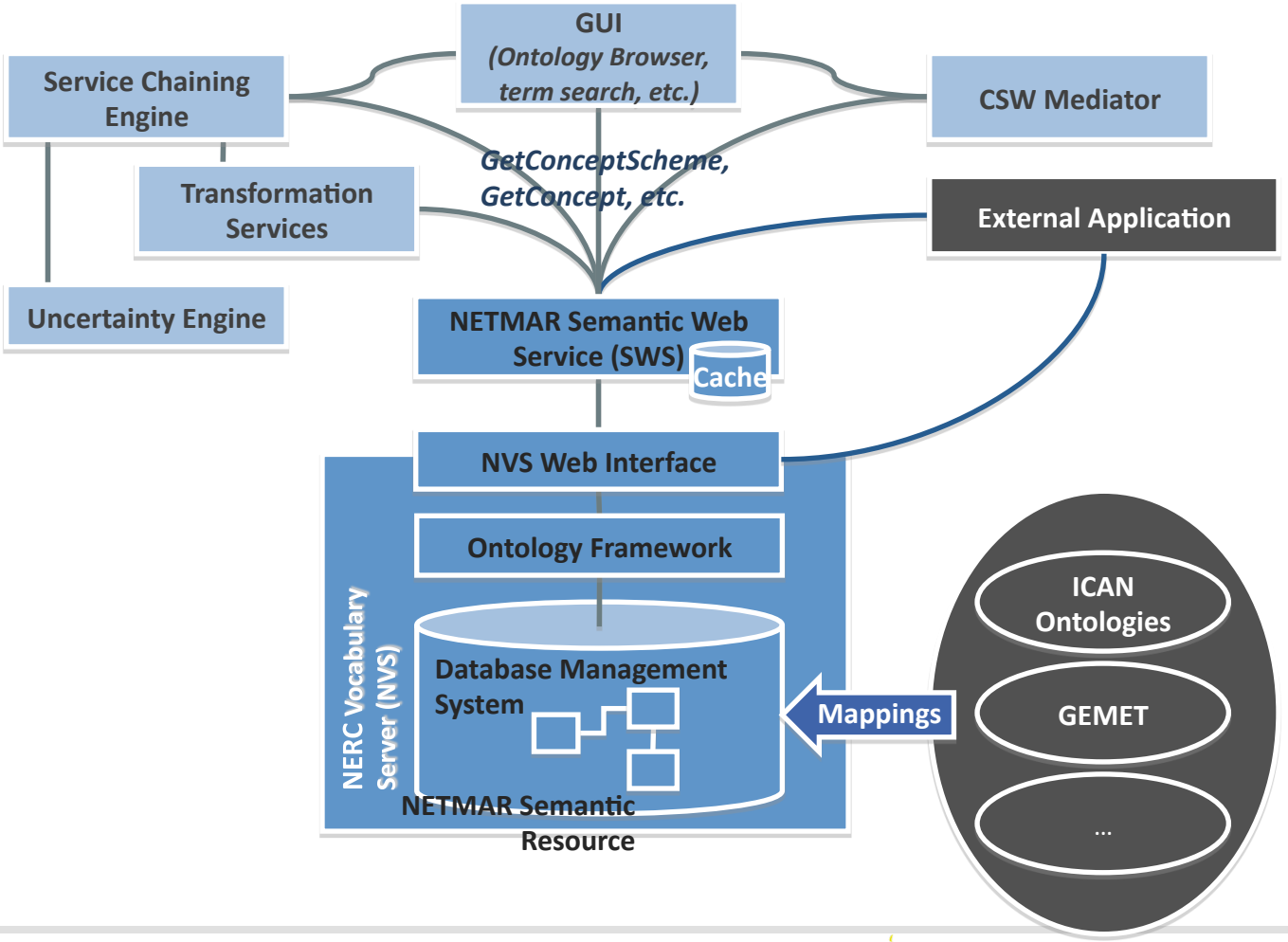
# NETMAR Developments for ICAN

- Design of an interconnected semantic resource
- Built on standards
  - Delivery payload XML, RDF, SKOS
  - Access methods ReST, SOAP
- Content derived from many existing resources

# NETMAR Developments for ICAN

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# NETMAR products

- Ontology extension and semantic framework: supporting smart search and semantically-valid chaining
- Search client & ontology browser: ontology viewing, smart discovery, semantic mediation
- PyWPS: integration with standard chaining tools via WSDL

# NETMAR products

- Service chaining editor: simple ad-hoc chain creation, with semantic validation
- GIS viewer: Flexible, open source front end
- Cookbooks

# NETMAR products - Semantics

- New projects often simply generate new semantic resources at much effort
- These exist in isolation and cannot be discovered or interoperate
- An extended ontology maps between the disparate, existing semantic resources
- A coherent extended ontology is key to allowing interoperability between clients, services and data

# NETMAR products - Semantics

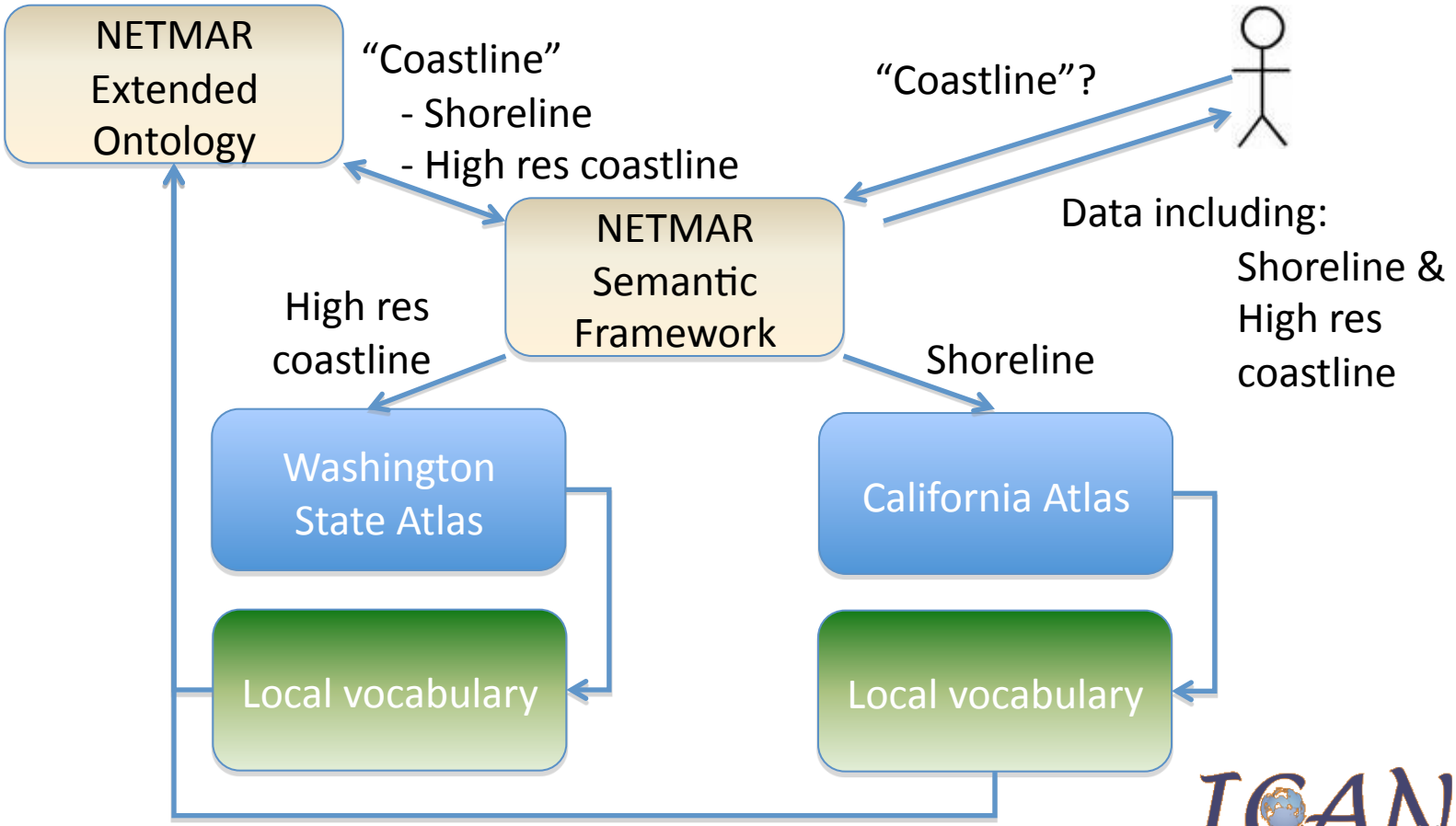
- A known point of access to the extended ontology
  - A published, OGC-like API
  - Making it discoverable and reusable!
- Provides the software tools to utilise the knowledge contained within the ontology
- Provides a human readable interface for discovery of data and services

# NETMAR products - Semantics

- Portal component providing smart search and ontology browsing
  - Web GUI implemented in Adobe Flex
- Mediator to "talk to" multiple search catalogues
  - CSW Mediator and Semantic Web Service implemented in Java
- Currently being deployed on the NETMAR domain and integrated within the portal

# NETMAR products

- ICAN Example



# Cookbook content

- NETMAR to produce cookbook
  - First version by December 2011
  - Revised version by July 2012
- "Straw-man" for the content of the cookbook
  - Understanding metadata [CMRC]
  - How to establish a standard CSW metadata catalogue with GeoNetwork [CMRC]
  - Understanding semantics [BODC/CMRC]
  - How to connect my coastal atlas to the ICAN semantic interoperability pilot [CMRC/BODC]

# Cookbook content - Semantics

- What are vocabularies, thesauri and ontologies?
- Why would one use a "knowledge organization system"?
- How would one define the content of a knowledge organization system (KOS)?
  - What is the domain scope of the KOS
  - Identifying the content of the KOS
    - How narrow or broad should the concept definitions be? (Granularity)
    - Ensure concept definitions at the same hierarchical level have the same granularity
    - Linking concept definitions together – internal mapping

# Cookbook content

  - Ensuring the quality of the content of the KOS (content governance / register manager and technical governance / control body)
- Making the content available
  - Deploying the KOS within the NETMAR semantic framework
  - Mapping the KOS to existing KOSs (external mapping)
- Is this proposed content in-line with ICAN's requirements?
  - Discussion during workshop later today