



Connecting our Coasts

Yassine Lassoued

y.lassoued@ucc.ie

Ned Dwyer

n.dwyer@ucc.ie

Coastal and Marine Research Centre

Outline

- Terminology
- ICAN
- Problem
- Approach
- Demo

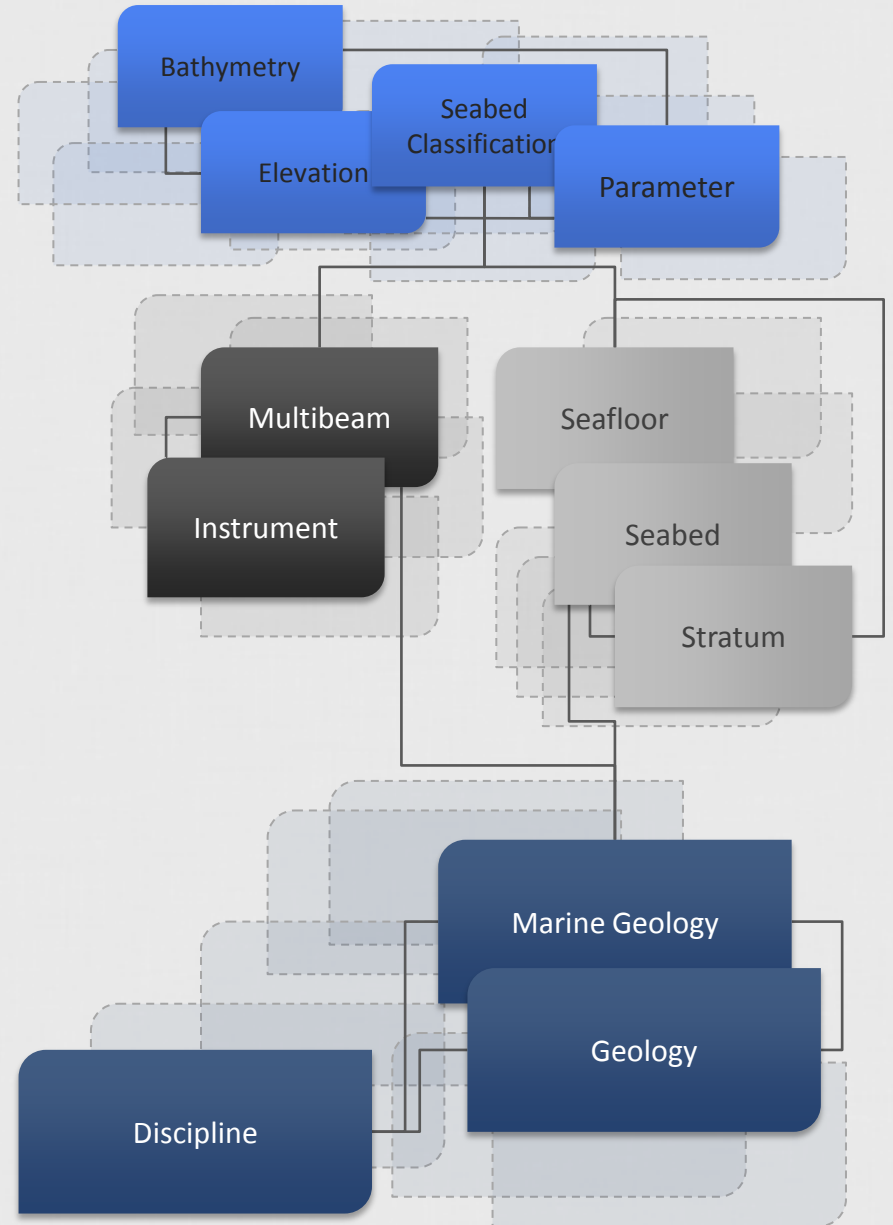
Interoperability

Make distributed heterogeneous information systems (web services, databases, etc.) communicate



Semantics

Meaning of “information” (data, metadata, etc.): term definitions, semantic relationships, etc.



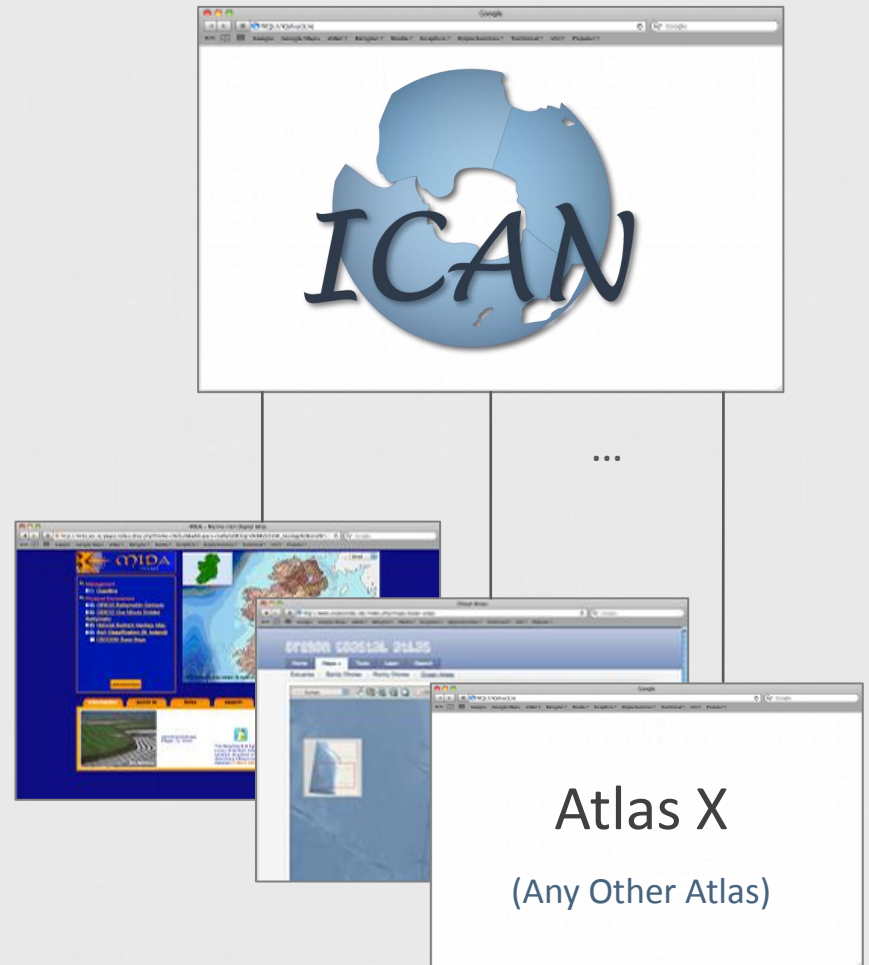
Coastal Web Atlas (CWA)

Web application for the delivery of coastal resources, including: maps, geospatial data, metadata, thematic information



CWA Semantic Interoperability

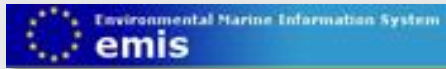
Providing seamless access to distributed, and semantically heterogeneous coastal web atlases



ICAN

- International Coastal Atlas Network
- ICAN is an informal group of +50 organisations with shared interest in coastal web atlases.
- ICAN community has been meeting regularly over the past 7 years to scope and implement data interoperability approaches to coastal web atlases.

<http://ican.science.oregonstate.edu>



Goals of ICAN

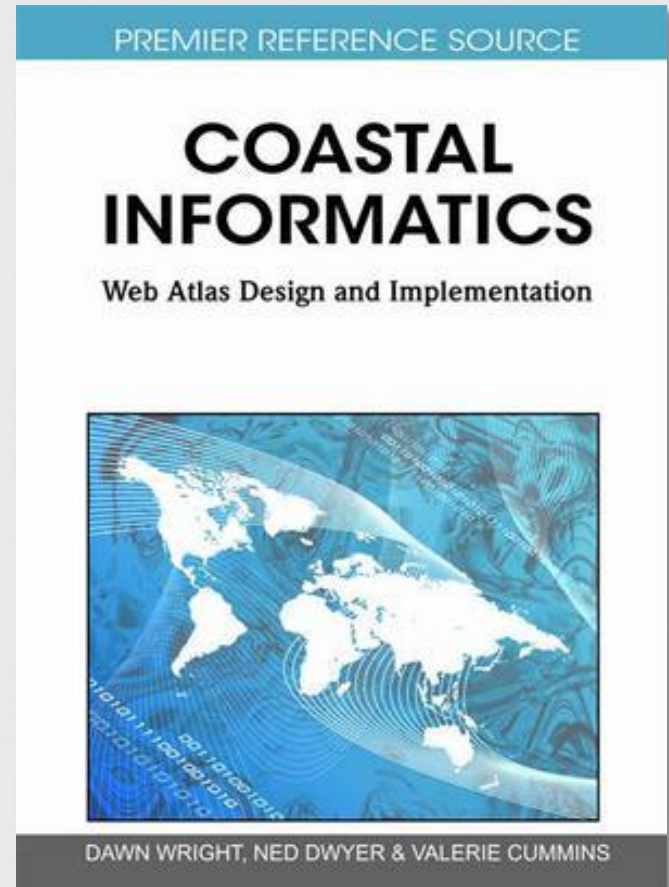
- Ensure network has **wide representation** (developers/users)
- Develop technical & policy **guidelines** for atlas developers
- Highlight benefits of **interoperability & standards** based systems

Goals of ICAN

- Develop **collaborative projects** for sharing know-how, atlas implementation, and demonstration
- Align atlas efforts to facilitate **interoperability**
- Engage with **other relevant projects** and developments
- Involve representatives of the **user communities**

Guidelines for Developers

- Principles of atlas design
- Case studies around the world
- CWA management and governance



Guidelines for developers

- Cookbooks produced as part of the EU FP7 NETMAR project
 - Web Processing Services Cookbook
 - ICAN Semantic Cookbook
 - Semantic Data and Processing Service Cookbook

<http://netmar.nersc.no>



Problem

- CWA Heterogeneity:
 - Syntactic (data formats, query languages)
 - Structural (data schemas)
 - Semantic (meaning of data values)

Example: Metadata

- Different metadata standards (ISO-19115 vs. FGDC)
- Different vocabularies: ‘Seabed’ vs. ‘Seafloor’
‘Coastline’ vs. ‘Shoreline’
French, Spanish, English...

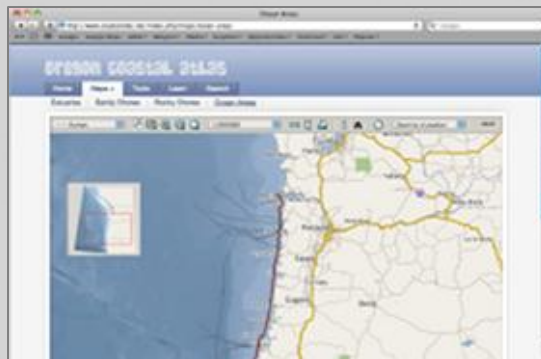
Problem



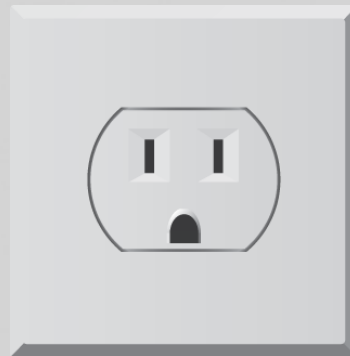
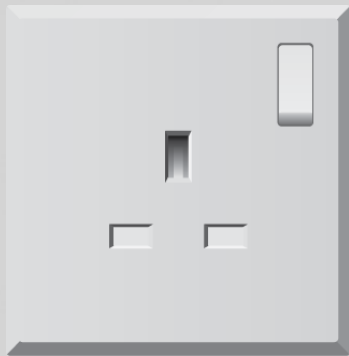
“Coastline”

“Shoreline”

“Ligne de côte”

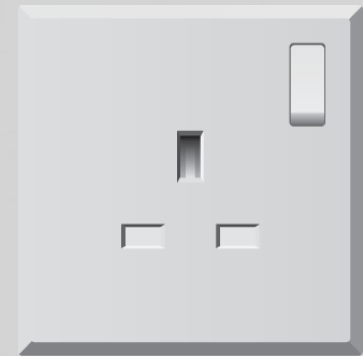
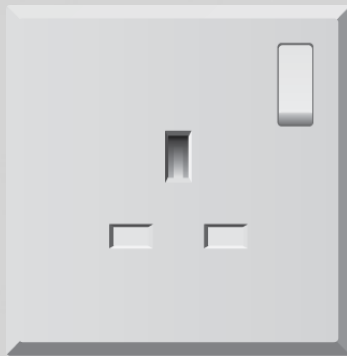


Problem



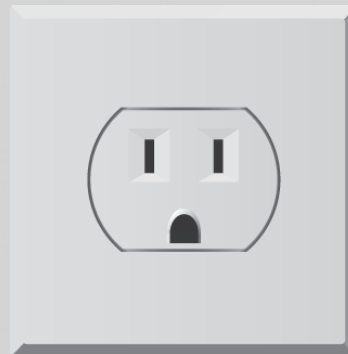
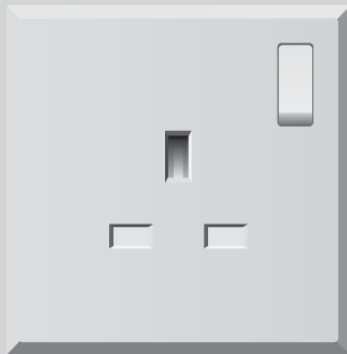
Approaches

Approach 1: Standardisation



Approaches

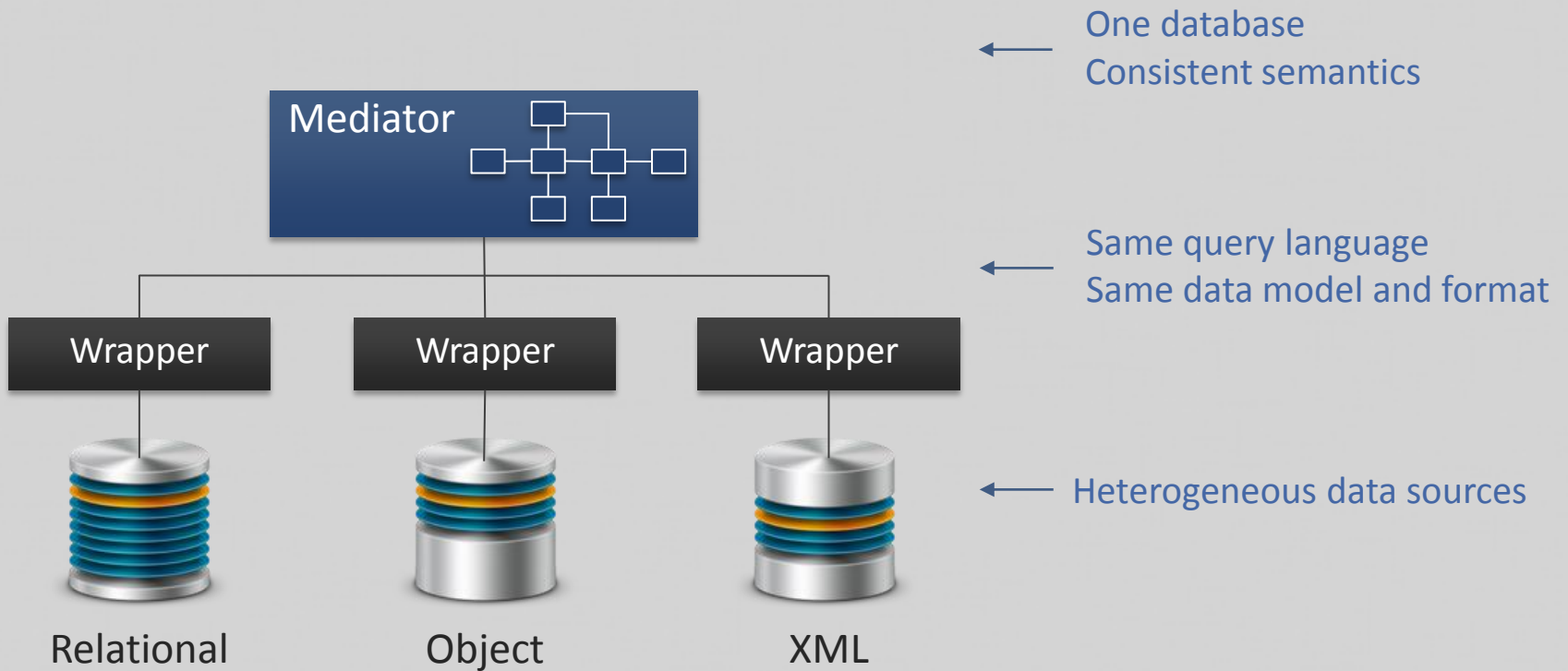
Approach 2: Mediation (Adaptor)



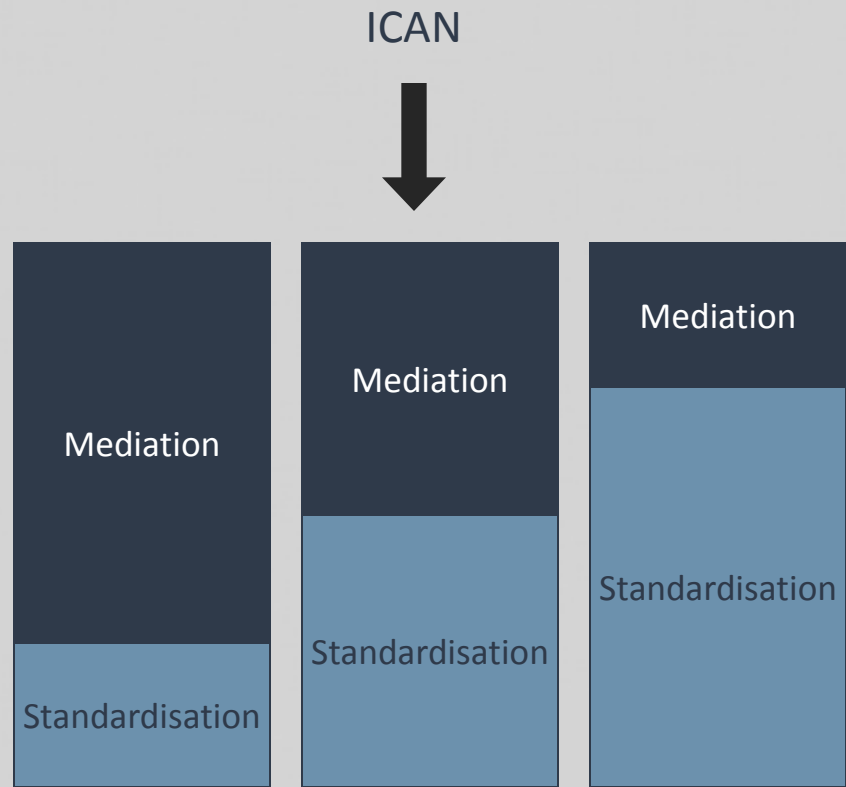
Standardisation

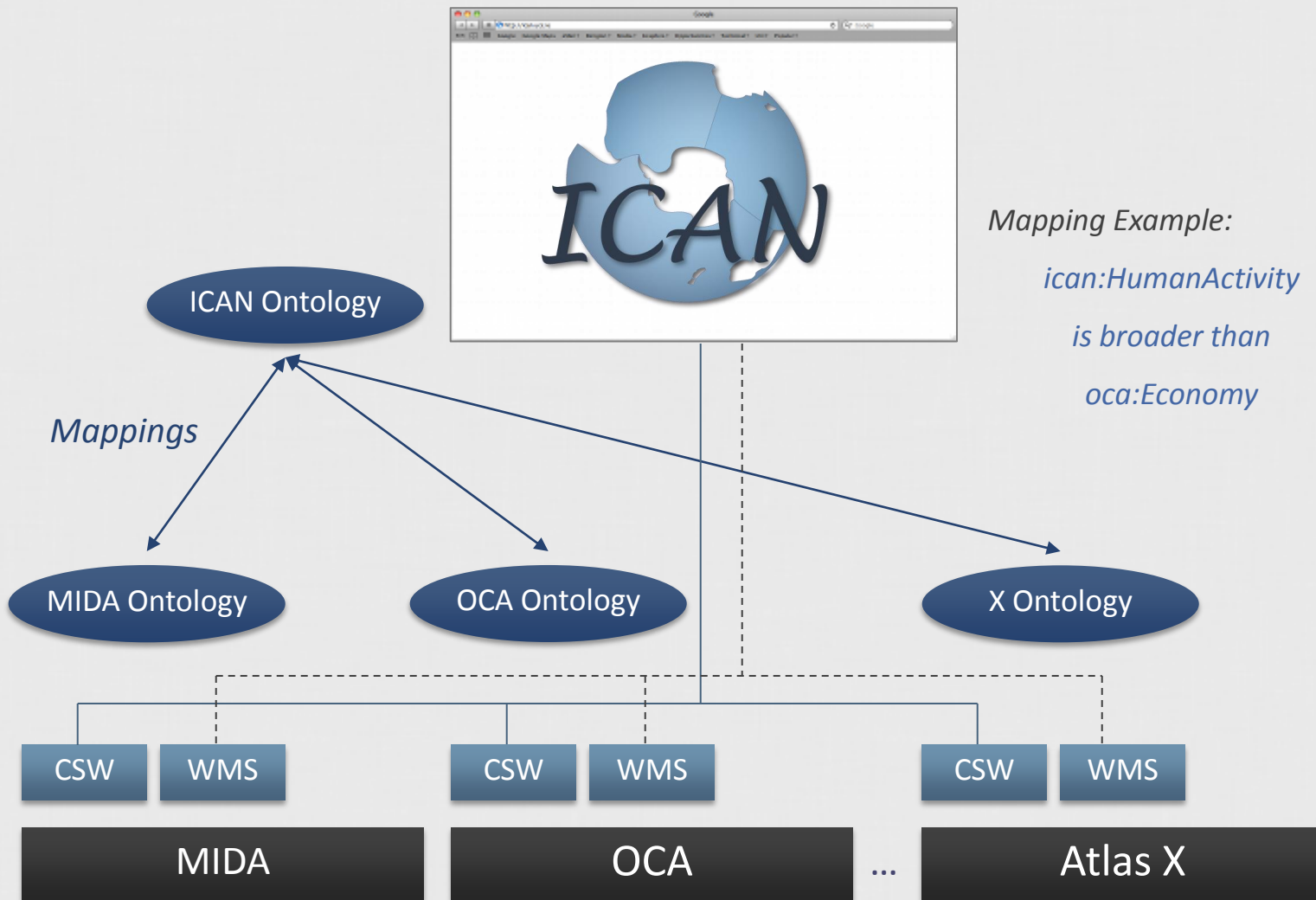
- Standardise access interfaces and data formats
 - Use W3C standards
 - Implement OGC Web Services
 - Use metadata standards
 - ISO-19115, ISO-19139, ISO-19119, Dublin Core

Mediation

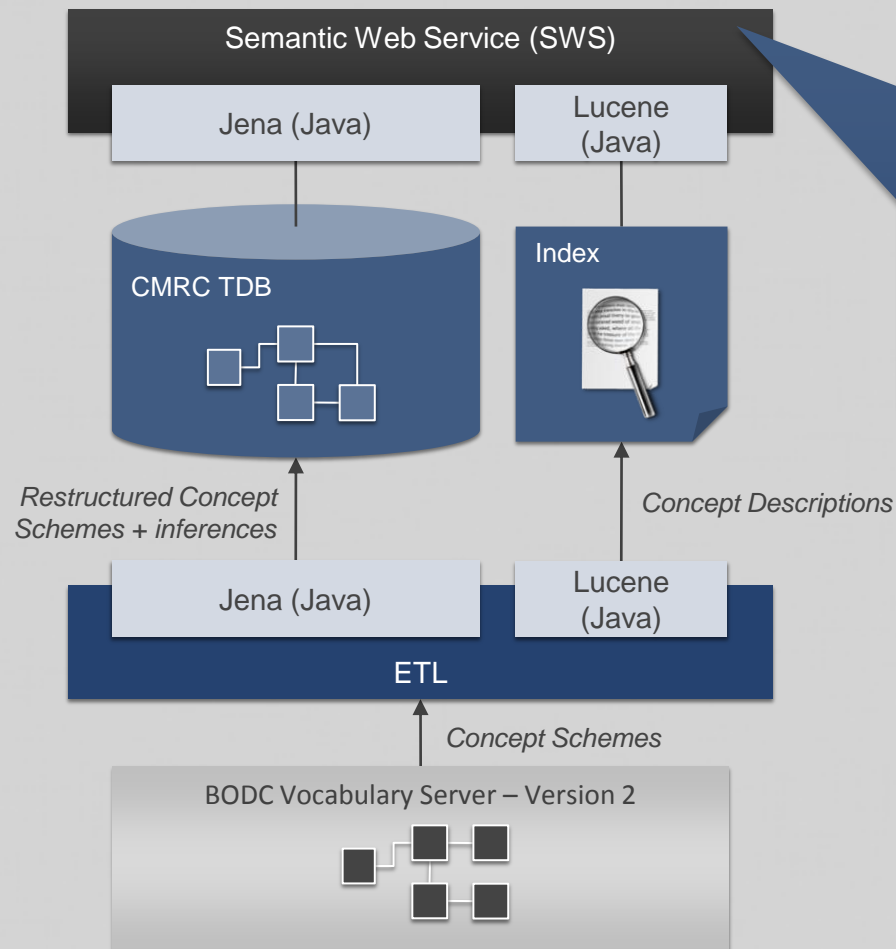


Standardisation vs. Mediation





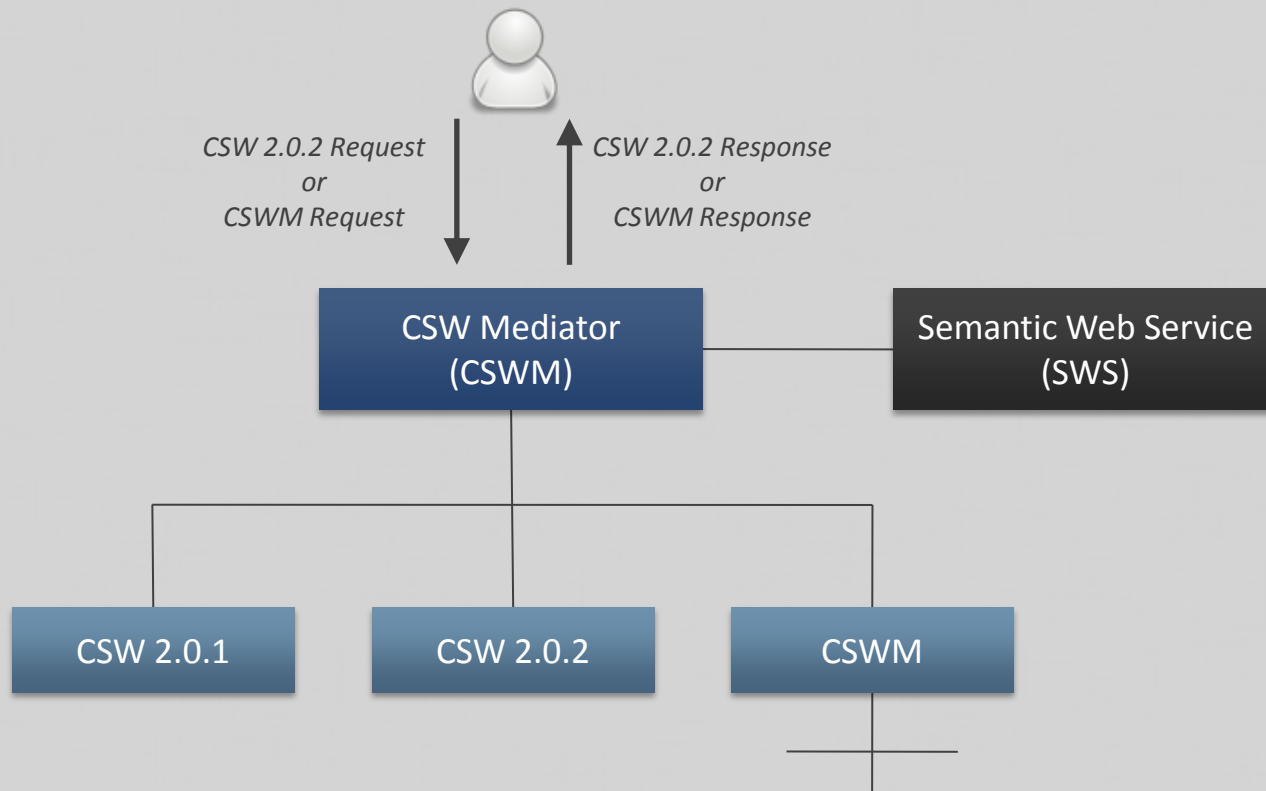
Semantic Framework



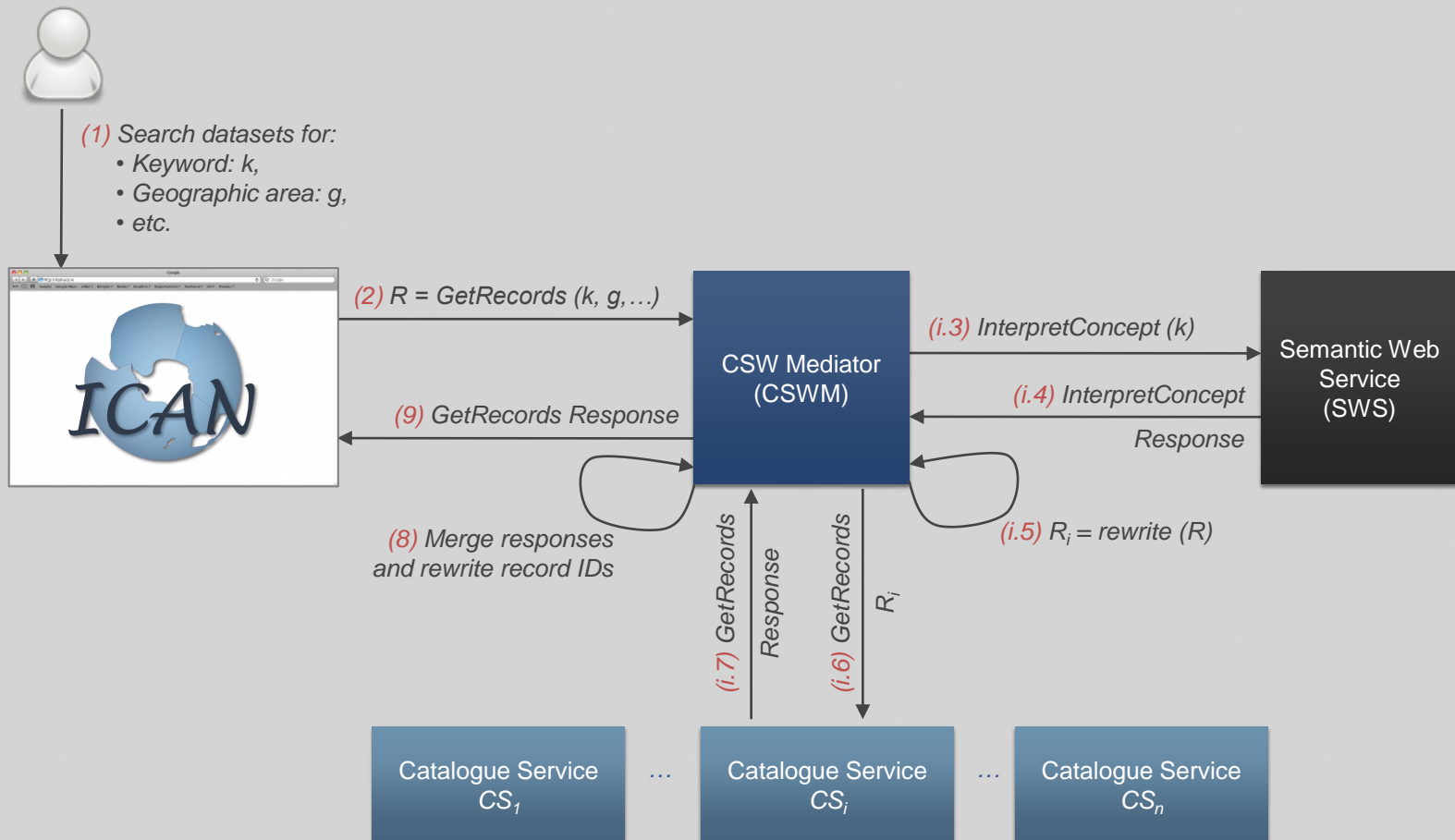
Get Concept Schemes
Get Concept Scheme
Get Collections
Get Collection
Get Concepts
Get Concept
Search Concept
Get Related Concepts
Build Concept Hierarchy
Interpret Concept

**SWS Specification
submitted to GEOSS
best practices wiki**

CSW Mediation Architecture



CSW Mediation Work Flow



Demo

[HTTP://ICAN2.UCC.IE/ATLAS](http://ICAN2.UCC.IE/ATLAS)



Browse

Search

Display Language:

English

Thesaurus

Thesaurus: ICAN Coastal Erosion

Find Data

Find Data

Metadata

Map

Agents of Coastal Change

Human Activity

Natural Processes

Sediment Budget

Effects of Coastal Change

Habitat Alteration

Shoreline Accretion, Shoaling and Emergence

Shoreline Erosion, Flooding and Submergence

Human Responses to Coastal Change

Habitat Alteration

http://vocab.nerc.ac.uk/collection/A01/current/Habitat_Alteration/

Processes, activities and events that change the nature of the environment provided for living organisms.

Related Terms

MIDA Themes	Bathing Water Quality
MIDA Themes	Coastal Lagoons
MIDA Themes	Coastal Stability
MIDA Themes	Coastal Typology
OCA Themes	Dune Grading
OCA Themes	Dune Restoration
OCA Themes	Oil Spill
MIDA Themes	Saltmarshes



Search Criteria Search Results

Search medio fisico

in Spanish

Options

Thesaurus

Find Data

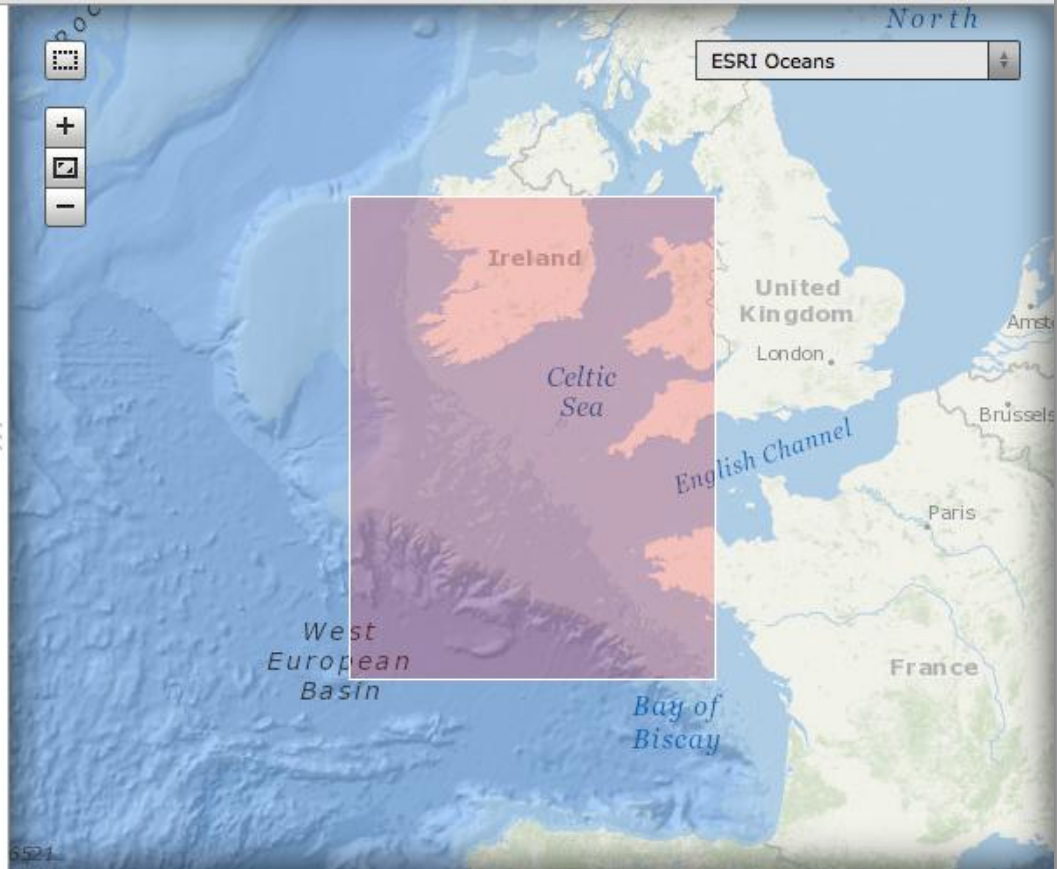
Metadata

Map

Geographic Area of Interest

Draw a bounding box in the map area or select a geographic area from the hierarchy below.

- + Arctic Ocean
- Northeast Atlantic Ocean (40W)
 - Bay of Biscay
 - + Bristol Channel
 - + Celtic Sea**
 - + English Channel
 - Gulf of Guinea
 - + Inner Seas off the West Coast of Scotlar
 - + Irish Sea
 - + North Sea
 - Skagerrak
 - St. Magnus Bay





Search Criteria Search Results

Search in Options

Thesaurus

Find Data

Metadata

Map

Source || Resource



Weather Stations

Abstract: Weather stations in the Republic of Ireland managed by Met Éireann. It includes stations currently...



National Bedrock Geology Map

Abstract: The national bedrock geology map at 1:500,000 scale, providing useful data to Local Authorities,...



Stable Lights

Abstract: The locations of stable light sources, (mainly built-up areas) have been determined from the...



Coastal Lagoons

Abstract: The dataset displays the location of 103 lagoons in Ireland and provides information on their type,...



Salt Marshes

Abstract: Comprehensive inventory of salt marshes for the island of Ireland.



Coastal Land Cover Change

Abstract: This dataset from the La Coast project, coordinated by the Joint Research Centre of the European...



GEBCO Bathymetric Contours

Abstract: An extract of bathymetric contours from GEBCO Digital Atlas (published by the British Oceanographic...

20 datasets found



Summary Full XML Data Links

Thesaurus

Find Data

Metadata

Map



National Bedrock Geology Map

The national bedrock geology map at 1:500,000 scale, providing useful data to Local Authorities, Environmental and Geological Consultants, Engineering Contractors, Universities, Exploration Companies and the general public.

Identifier

c0910b0b-65a4-4e76-a863-99bb72826a61@http://mida2.ucc.ie/mida-ican-geonetnetwork/srv/en/csw

Publication Date

2004-12-07T15:02:00

Status

Ongoing

Descriptive Keywords

http://vocab.nerc.ac.uk/collection/A04/current/Bedrock/, Bedrock [Theme]

Ireland [Place]

Geographic Bounding Box

North: 55.433513



Zoom Delete Move Up Move Down Feature Info

- Thesaurus
- Find Data
- Metadata
- Map

Layers

National Bedrock Geology Map



Thanks



Yassine Lassoued

y.lassoued@ucc.ie

Ned Dwyer

n.dwyer@ucc.ie

Coastal and Marine Research Centre