

ICAN & Web 3.0

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Overview

- A little Web history
- Online Controlled Vocabularies...
 - ... and some of their uses
- ICAN use case...
 - ... and its implementation



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A little Web history

- Web 1.0 - The read-only web



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A little Web history

- Web 1.0 - The read-only web
- Web 2.0 - Interaction, collaboration, social
 - Wiki sites
 - Twitter, Facebook
 - Docs / Drive



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A little Web history

- Web 1.0 - The read-only web
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- Web 3.0 - The semantic web
 - Unstructured web of documents...
 - ... becomes a structured web of data



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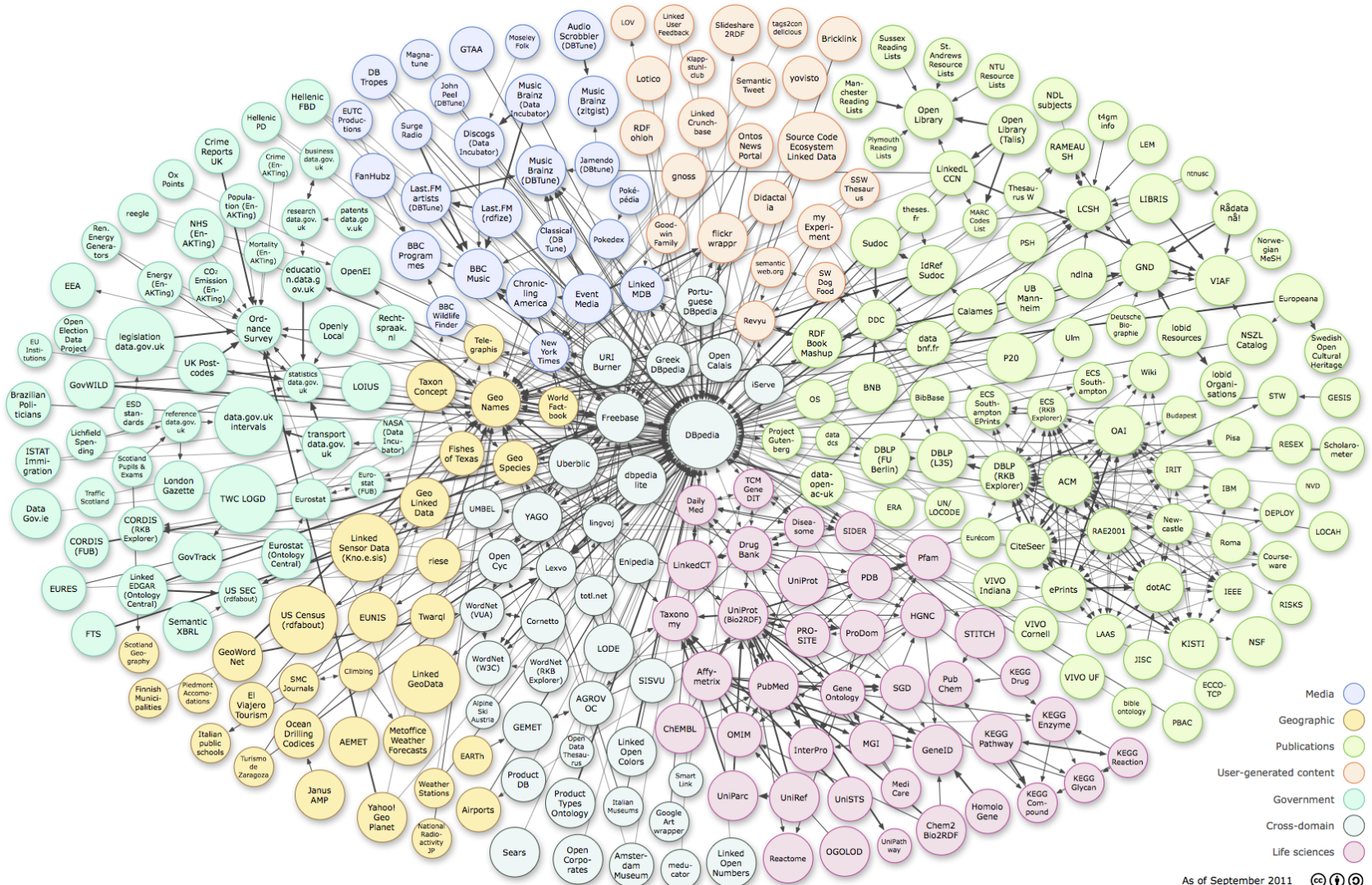


A little Web history

- Web 1.0 - The read-only web
- Web 2.0 - Interaction, collaboration
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- Web 3.0 - The semantic web
 - Unstructured web of documents...
 - ... becomes a structured web of data
 - Sir Tim Berners-Lee, W3C, Weaving the Web (1999)



The future of the web?



Online controlled vocabularies

- What are they?
 - A collection of concepts for populating a given metadata field



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Online controlled vocabularies

- What are they?
 - A collection of concepts for populating a given metadata field
 - Ensure consistent spellings & syntax



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Online controlled vocabularies

- What are they?
 - A collection of concepts for populating a given metadata field
 - Ensure consistent spellings & syntax
 - Prevent metadata misunderstandings



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Online controlled vocabularies

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 - A collection of concepts for populating a given metadata field
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 - Maintain a static relationship between metadata fields and the real world



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Online controlled vocabularies

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 - Concepts from different controlled vocabularies may be connected using simple mapping relationships



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Online controlled vocabularies

- What are they?
 - A collection of concepts for populating a given metadata field
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 - Maintain a static relationship between metadata fields and the real world
 - Concepts from different controlled vocabularies may be connected using simple mapping relationships
 - Web accessible - you can browse to them



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Online controlled vocabularies

- What are their uses?
 - SeaDataNet



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Tools ?



Enlarge

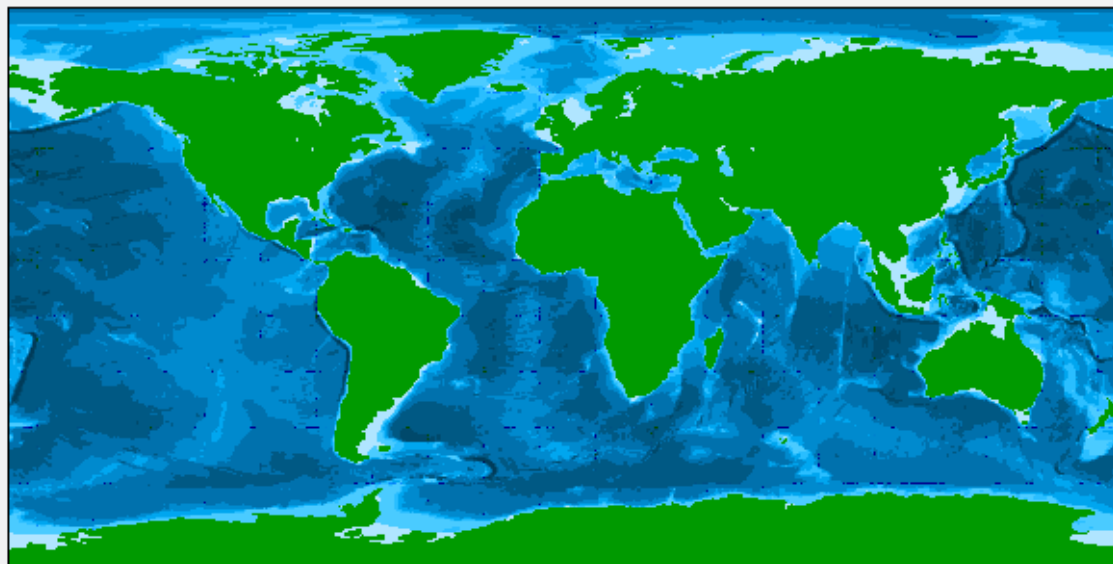
Help

Position

Index

Datasets 0

Basket Reset



Layer control ? Expand Add layer

- ☐ CDI entry Points ?
- ☐ CDI entry Tracks ?
- ☐ CDI entry Areas ?

- ☐ Grid Lines ?
- ☐ Regional sea ?
- ☐ Regional sea labels ?
- ☐ Main sea ?
- ☐ Main sea labels ?
- ☒ Bathymetry ?
- ☐ Blue Marble ?

Lat/long ?

Upper-left ?

Lower-right ?

Search

Search

Clear

?

Free search

Date (yyyymmdd) from

Variable groupings

All

Biological oceanography

> Bacteria and viruses

> Biota composition

Instrument type

All

>2000 Hz top-bandwidth single-channel seismic

>2000 Hz top-bandwidth sub-bottom penetrator

1000 Hz top-bandwidth multi-channel seismic

Sampling interval

All

Measuring area type

All

Cruise/Station name

Platform type

All

aeroplane

beach/intertidal zone structure

coastal structure

Projectname

Datasetname

Instrument depth (m) from

Waterdepth (m) from

Originator

All

Country

All

CDI partner

All

Access restriction

All

Online controlled vocabularies

- What are their uses?
 - SeaDataNet
 - BCO-DMO



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Search

Return to classic map

▼ Programs

Arctic Summer Cloud Ocean Study (2) ⓘ
 Census of Marine Life (449) ⓘ
 Comparative Analysis of Marine Ecosystem Organization (1) ⓘ
 Emerging Topics in Biogeochemical Cycles (11) ⓘ
 Gulf of Mexico - Deepwater Horizon Oil Spill (45) ⓘ
 Historical datasets (11) ⓘ
 Integrated Marine Biogeochemistry and

▼ Parameters

15N of Total Particulate Nitrogen (1) ⓘ
 APA_whole (3) ⓘ
 Ag110m_conc_dry (1) ⓘ
 C13 of Total Particulate Carbon (1) ⓘ
 CDOM (13) ⓘ
 CDOM_ppb (10) ⓘ
 CDOM_raw (8) ⓘ
 C_org (3) ⓘ
 C_to_N (16) ⓘ
 C13 of Total Particulate Carbon (1) ⓘ

▼ Projects

Algal Communities in Distress: Impacts and Consequences (3) ⓘ
 Amazon influence on the Atlantic: CarbOn export from Nitrogen fixation by Diatom Symbioses (9) ⓘ
 Anammox, denitrification and nitrogen fixation in the Black Sea (3) ⓘ
 Aplysina Red Band Syndrome: Investigating the etiology, pathogenesis, and ecology of

▼ People

Abbott, Mark (4) ⓘ
 Abraham, Edward (12) ⓘ
 Acevedo-Gutiérrez, Alejandro (1) ⓘ
 Ainlex, David (6) ⓘ

Results

Available datasets

Group by: deployment

Dataset	Deployment
---------	------------

Deployment: AA8704

EcoMon Plankton 100m^3	AA8704
EcoMon Plankton 10m^2	AA8704

Deployment: AB_63_1

iioe_chaetognaths	AB_63_1
iioe_copepods	AB_63_1
iioe_decapods	AB_63_1
iioe_ostracods	AB_63_1
iioe_pleuronects	AB_63_1
iioe_zoo	AB_63_1

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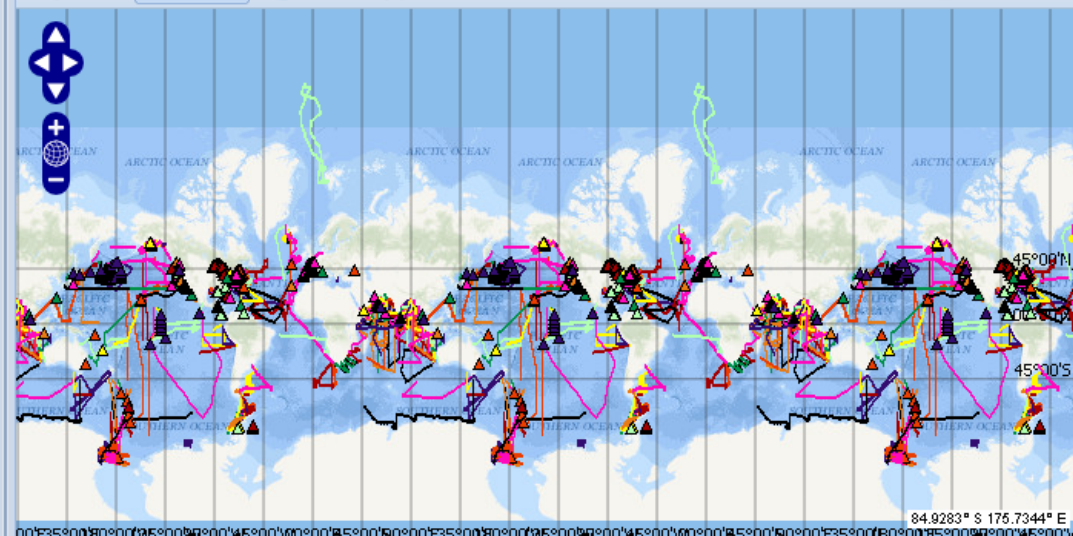
Visible deployments

Clear selections

- AB_63_1
- AB_63_2
- AB_63_3
- AB_63_4A
- AB_63_A
- AB_64_5
- AB_64_6
- AB_64_7
- AB_64_8
- ACIDIC-CMEN-GI...
- ACIDIC-FCKX-GI...
- ACIDIC-SHLX-GI...
- AE-X0908
- AE-X1103
- AE-X1211
- AESOPS_Array

Map

Zoom in
 Pan
 Query
 Clear query
 Clear highlights
 Map options



Online controlled vocabularies

- What are their uses?
 - SeaDataNet
 - BCO-DMO
 - Climate and Forecast



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Online controlled vocabularies

- What are their uses?
 - SeaDataNet
 - BCO-DMO
 - Climate and Forecast
 - Standard Name:
"surface_upward_mass_flux_of_carbon_dioxide_
expressed_as_carbon_due_to_emission_from_
crop_harvesting"
 - EEA pollutant: *"Carbon dioxide"*
 - GEMET source: *"harvest"*



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ICAN "Semantic" Use Case

"Coastline"

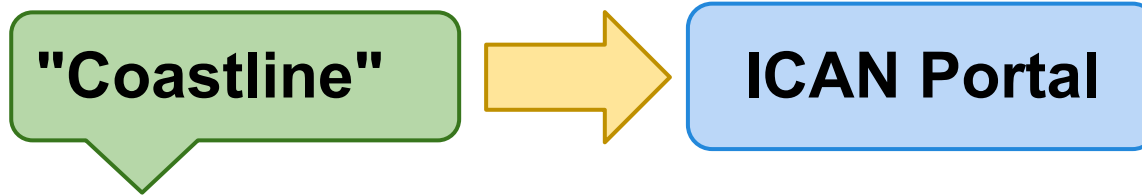


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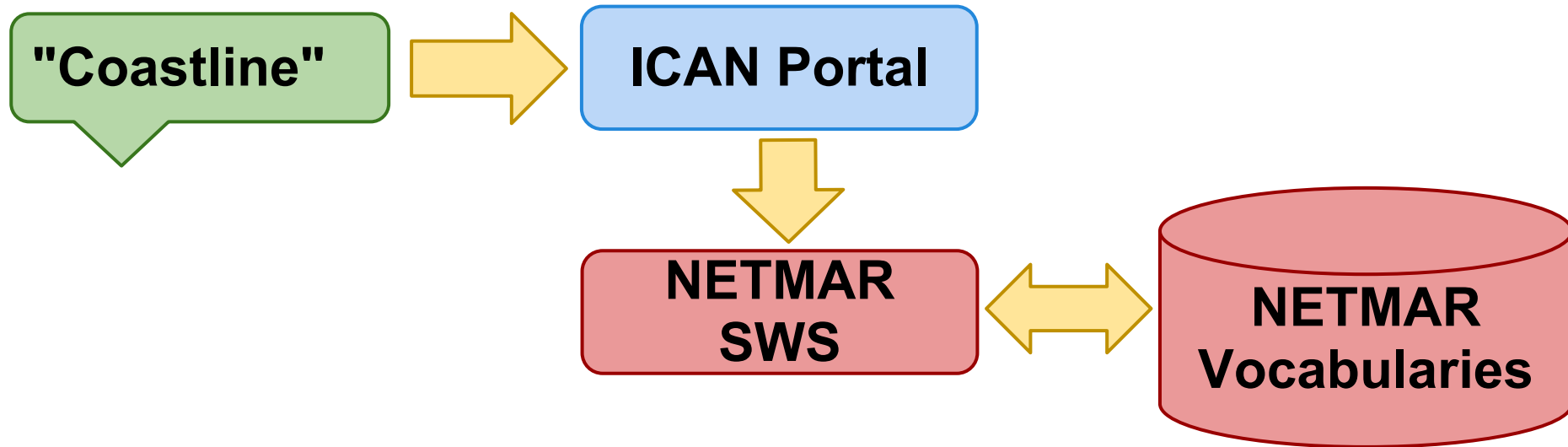
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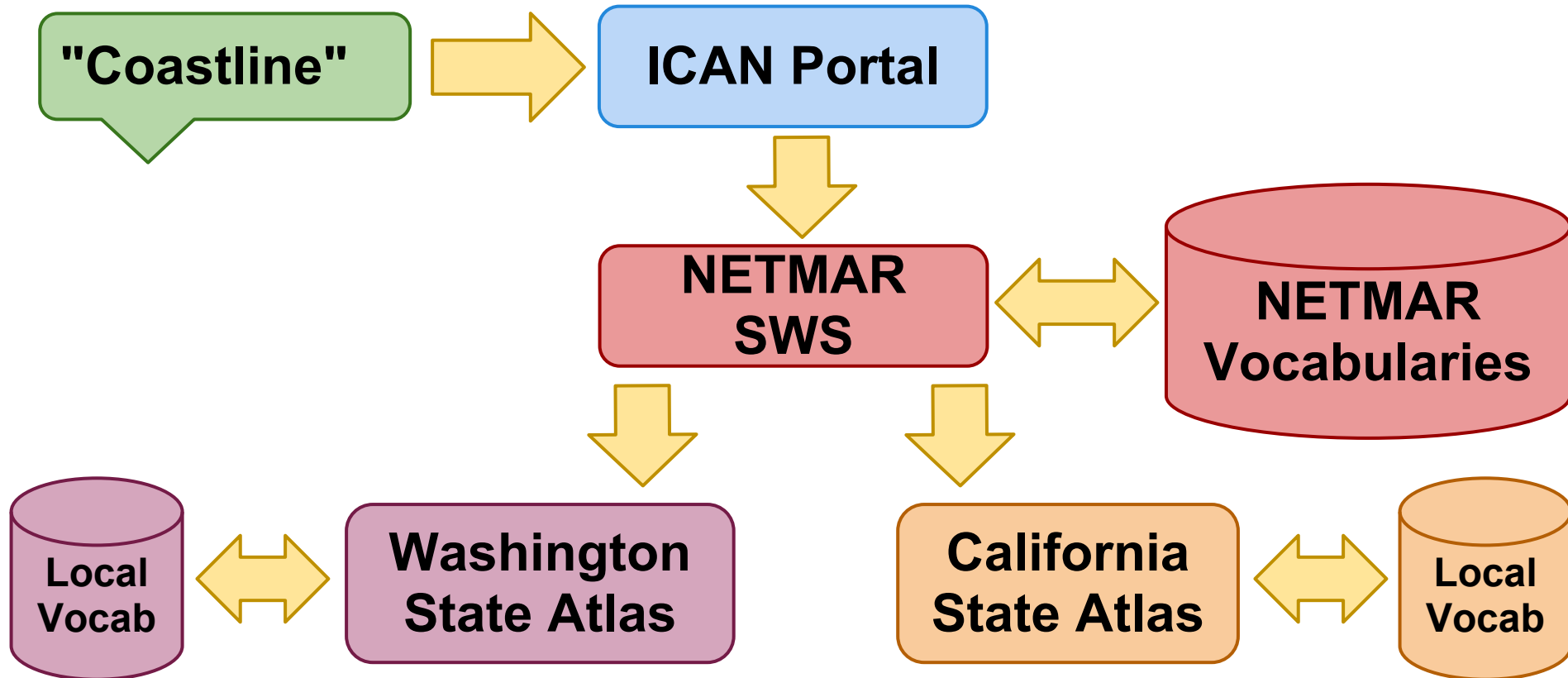
ICAN "Semantic" Use Case



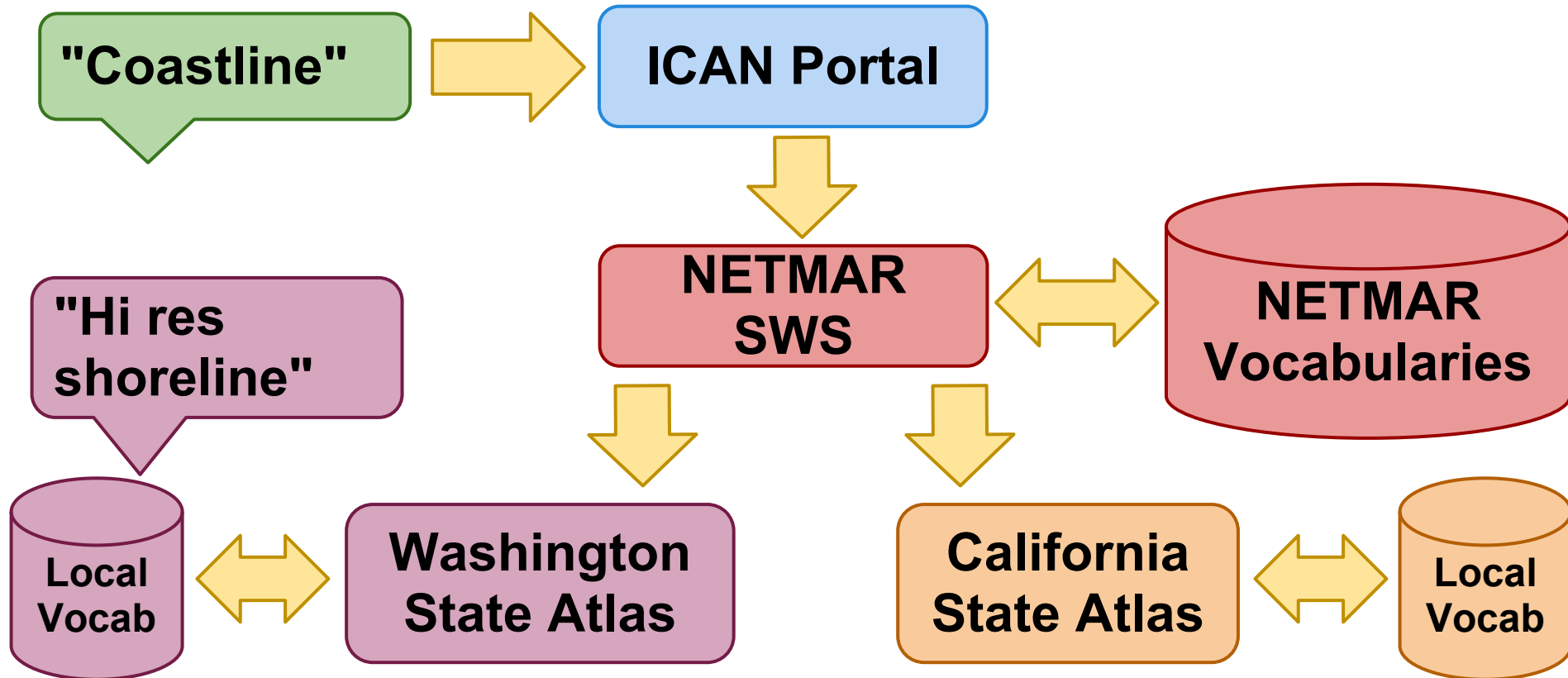
ICAN "Semantic" Use Case



ICAN "Semantic" Use Case



ICAN "Semantic" Use Case



Implementation

- Standards based approach
 - W3C & OGC
 - W3C for vocabulary standards
 - OGC for catalogue services



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Implementation

- Standards based approach
 - W3C & OGC
 - W3C for vocabulary standards
 - OGC for catalogue services
- Implemented on NETMAR technology
 - Semantic mediator
 - Links catalogue services...
 - ... with distributed definitions



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International Coastal Atlas Network Coastal Erosion Discovery Thesaurus

Thesaurus of discovery terms that may be mapped to terms used to mark up atlas component data or metadata.

Created by: International Coastal Atlas Network

Published by: Natural Environment Research Council

Agents of Coastal Change(+)

Definition: Actions and processes that change the nature or location of the boundary between land and sea.

Definition: Non disponible

Definition: Ikke tilgjengelig

Definition: não disponível

Definition: no disponible

Human Activity(+)

Natural Processes(+)

Sediment Budget(+)

Effects of Coastal Change(+)

Implementation

EUMIS Search

Ontology Discovery

Semantic Discovery Developed by CMRC



Thesaurus

Search D...

Metadata

Search Criteria Search Results

Search in English Options

Source	Resource
	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.



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Implementation

- Currently at demonstrator phase
 - Connected nodes are:
 - Oregon
 - MIDA (Ireland)



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Implementation

- Currently at demonstrator phase
 - Connected nodes are:
 - Oregon
 - MIDA (Ireland)
- How to join in?
 - Cookbooks published through the ICAN website



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