19 July 2007: Technical Discussion Notes

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Need to build a ***superatlas***. The web interface will include:

- List of themes;
- Links to get the map (getMap) and metadata from the appropriate atlas;
- Mapserver image as a result of WMS requests.

The design should be kept simple – focus on developing a working prototype rather than visual display.

CMRC will be responsible for building and hosting the superatlas.

Catalog Services for the Web (CSW) protocol will be used (probably using GeoNetwork environment). CSW is currently being used in the CMRC/Marine Institute BIDI Project.

Ex: *[note: each record is a layer.]*

get records ← *pulls list of metadata records encoded in ISO 19139 format.*

<record1> ← *metadata info will be embedded.*

<theme> ← *Relates to the ontology that is developed.*

<layer>

….

URI points to each WMS.

Yassine will develop schema.

Metadata will use ISO profile or Dublin Core.
CSW will map back to the full metadata (ISO or FGDC).

- Can use Dublin Core in GeoNetwork
- Just need to check that GeoNetwork stores metadata in XML (Declan to look into)

XML tags:

- MIDA needs to confirm the XML tags match ISO 19139 XML tags (existing tags are from draft ISO standards)

An Interrisk partner is creating an ISO 19139 profile that we may be able to use.

Controlled Vocabulary:

For MIDA and OCA, each need to have a controlled vocabulary. Each atlas needs to develop this based on our existing content and known future needs/work, as well as ensure it is clean and consistent (topics, key words).

- These CVs do not need to match an existing CV, they just need to be clean and consistent.
- Just need a list of layers and themes (in a hierarchy structure is beneficial).
- Think about the use cases while developing – How can planners benefit from this?
- Once we have these lists, we can convert it to an ontology (e.g. using VOC2OWL).

With ***WMS*** implementation, issues of what data can and can't be shared from each atlas will need to be addressed.

Ontology:

The MIDA and OCA each need to develop a local ontology based on the respective controlled vocabulary. We will develop an ontology for a single use case (e.g., coastal hazards or coastal recreation) or a broader selection of use cases (e.g., multiple topics), depending on priorities. [*Note:* It was decided by the funding group that the focus will be on **coastal erosion**.]

These local atlas ontologies will map to the superatlas ontology when that is created. The first conference call about ontologies will be **September 12**.

Web Interface:

Luis has an interface already built that we could use for the super atlas.

Teleconference Calls:

It's estimated that we will need 2 2-hour conference calls among the technology group to discuss the development of the global ontology and mapping.

- Probably use WebX, which is free teleconferencing software. MMI/Luis will run the application and we will call in. CMRC will need to call the MMI teleconference phone number to access.
- Skype may be an alternative, but it won't allow viewing of programs running on other computers.

Communication:

Dawn will set up tech group listserv. Need to send her a list of members, and email full list to see if anyone else wants to join. At the meeting were:

- Liz O'Dea
- Luis Bermudez
- Stephanie Watson
- Kuuipo Walsh
- Tanya Haddad
- Ned Dwyer
- Declan Dunne
- Yassine Lassoued
- Eoin Ó Grady
- Dru Clark
- Iban Ameztoy
- Michelle Kinzel
- Greg Benoit

Once the list is created, we need to compile a list of Skype profiles.

It was suggested that email communication between individuals be CC'd to the technical group listserv so that people keep informed and can learn about the development.

Task Calendar:

**Note:* This calendar is based on end of December for the finished prototype.

Number	Task	Deadline	Estimated Time		
			MIDA	OCA	MMI
T1	Set up Technical Group listserv	Early August	Liz (Aug)	Dawn	
T2	Complete list of themes (topics) and controlled vocabulary from MIDA and OCA.	End of August	3 days (IA/LOD/YL)	3 days (TH)	.5 day (LB)
T3	Use Case topic/layer list of layers which can be shared via WMS (which MIDA and OCA can use to find a common subset of layers for comparison)	End of August	.5 day (IA/LOD)	.5 day (TH)	.5 day (LB)
T4	Review existing Coastal Hazards Ontologies	End of August	2 days (YL)	1 day (TH)	
T5	Develop local ontologies for use cases	September 12	3 days (YL)	3 days (TH)	
T6	Make layers available via WMS (5-10 or more)	End of September	1 week (LOD/DD)	1 week (TH)	
T7	Teleconferences to create a global topics ontology and mapping (2 2-hour calls)	**1st:** Wed 12 Sep. from 4-6pm GMT/ 8-10am PST **2nd:** TBD	1 week (All)	1 week (TH)	1 day? (LB)
T8	Create ISO core schema	Mid September	.5 day (YL)		
T9	Implement ISO core schema into CSW	End of October	1 week (DD/YL)	2 weeks (TH)	
T10	Build web interface of prototype	15th January	4 weeks (DD/YL)		1 week (LB)
T11	Prototype Evaluation and Improvements	Early February	1 week (LOD/DD)	1 week (TH)	1 week

** Monthly conference calls will be organised for the funding group – the technical group will need to participate to give updates. **Mark the dates** listed in the ICAN Timeline at http://workshop1.science.oregonstate.edu/ican.

Slides for Technical Overview for ICAN, given at CZ '07

Driving Factors for Coastal Web Atlases and their Interoperability

- Better planning to cater for increased **population pressures** in the coastal zone (e.g. the UN estimate that by 2020 75% of the world's population will be living within 60 m of the coastal zone [UN 1992; Shi and Singh, 2003]).
- Decision support systems in relation to **climate change** scenarios in vulnerable coastal regions.
- Information to facilitate assessments of **risk to natural hazards** (including erosion, tsunamis and floods).
- Access to data and maps to support **Marine Spatial Planning** (MSP) / **Ocean Zoning** as a tool for better coastal and marine area management.
- Maps of jurisdictional boundaries for maritime territories in support of claims related to the **United Nations Convention on the Law of the Sea** (UNCLOS), which has a deadline for submissions of 2013.
- More efficient and effective coastal and marine area **governance, i**ncluding access to relevant data and information.
- Information on **resource availability and exploitation** including habitat and species information, as well as ecological and community resilience.

Vision: Create a Coastal SuperAtlas Structure

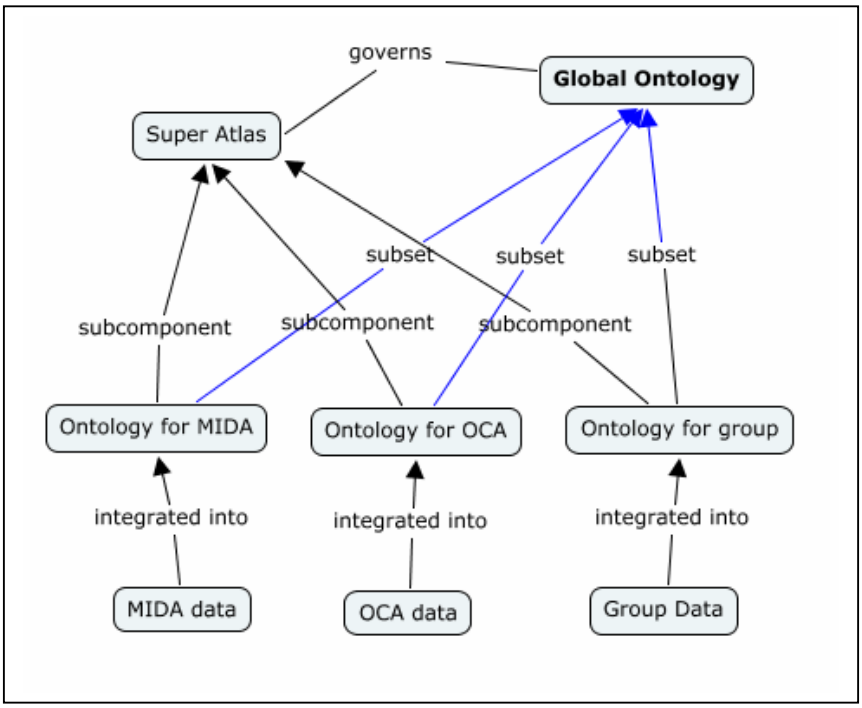
- This SuperAtlas Structure will:
  - Connect multiple coastal web atlases via a **distributed network**.
  - Be based on **community-held constraints** on mapping and presentation conventions, developed to maximize the comparability and reliability of information about our coasts.
  - Allow **integrated searching** for data in multiple atlases.
  - Return data displayed in an **integrated web map**.
  - Provide a **framework** for atlas development initiatives.
  - **Facilitate** cross-jurisdictional collaboration, planning and management.
  - Encourage **harmonisation** among the global atlas community.
- This SuperAtlas structure will *not*:
  - Be a global coastal atlas; instead, it will provide a recommended framework for building regional coastal atlas communities.

Pilot Study: Developing a Coastal Ontology

- What is an ontology?
  - A data model structure which defines topics within a discipline (e.g., ICZM) and the relationships between those topics.

- Why is it important for a SuperAtlas?
  - Provides a common structure to facilitate interoperability (e.g., sharing data) between atlases.

Global Ontology Fundamental to SuperAtlas Structure



Use Case: Coastal Hazards

- 2007-08 pilot study: Focus on Coastal Hazards (e.g., coastal erosion)
  - Fundamental concern in US and Europe
- Tasks:
  - MIDA and OCA to develop local controlled vocabularies and ontologies.
  - Create a global ontology based on local ontologies.
  - Develop prototype web interface to facilitate distributed querying and visualisation of data from both atlases.
  - Implement Open Geospatial Consortium services (CSW and WMS).
  - Prototype Evaluation and Improvements.
  - Review ways forward for 3rd workshop in July 2008.