



envision

environmental services infrastructure with ontologies

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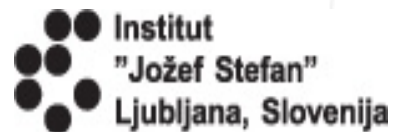
■ Research Labs

- Spatio-Temporal Modeling Lab (STML, Edzer Pebesma)
- Spatial Intelligence Lab (SIL, Angela Schwering)
- Situated Computing (SitCom, Christian Kray)
- Sensor Web, Web-based Geoprocessing & Simulation Lab (SWSL, Theodor Förster)
- **Muenster Semantic Interoperability Lab** (Musil, Werner Kuhn)

■ MUSIL in ENVISION

- Technical Coordination
- Contributing to tasks on Semantic Annotations / Stream Mining and Reasoning
- Leading tasks on Dissemination / Open Source / Community Management

- Until Dec 2012
- <http://www.envision-project.eu>



- Provide an ENVironmental Services Infrastructure with ONtologies for semantically enhanced multilingual discovery and adaptive composition of environmental models as services for non ICT-skilled users.

- Can we migrate desktop-based environmental models as services into the Web?
- Can we facilitate the separation of data sources from algorithms?
- Can we support the creation of new models by coupling existing re-usable modeling components (data sources, instructions, visualization)?

- Introduction into Scenarios, Environmental Models in ENVISION
 - Predicting effects of oil spills on cod population
 - River Monitoring to assess flood hazards
 - Landslide Risk maps
- Survey about Environmental Models
- Introduction into ENVISION platform
 - Brief overview
 - Videos presenting certain features
- Survey about ENVISION platform

Scenario: Danube Flood Monitoring

DFO Event # 2006-063 - Romania and Bulgaria - Lower Danube River - Rapid Response Inundation Map 1

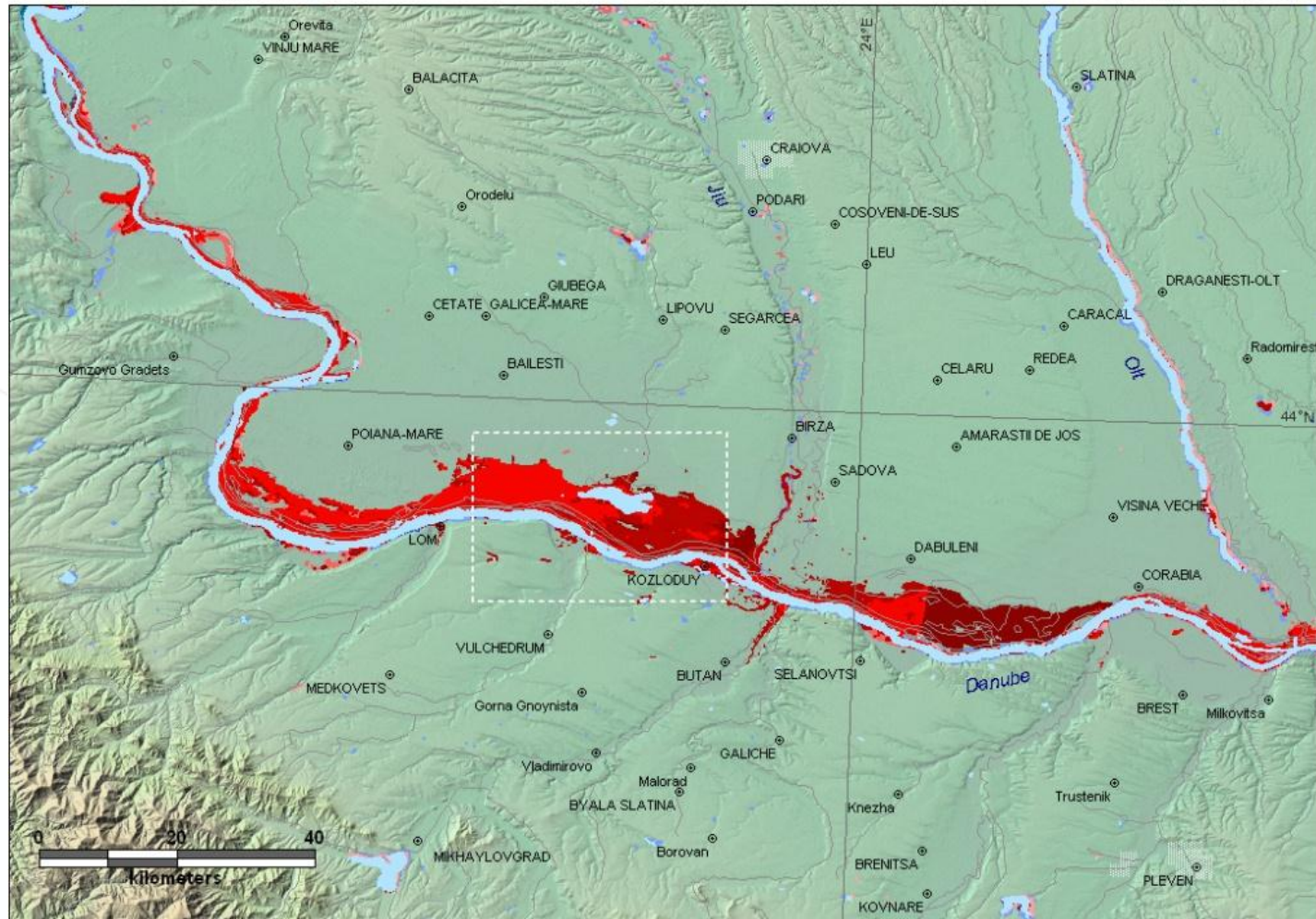
MODIS flood inundation limit
 May 1, 2006: ■
 April 26, 2006: ■

April 24, 2006: ■
 April 17, 2006: ■
 April 15, 2006: ■

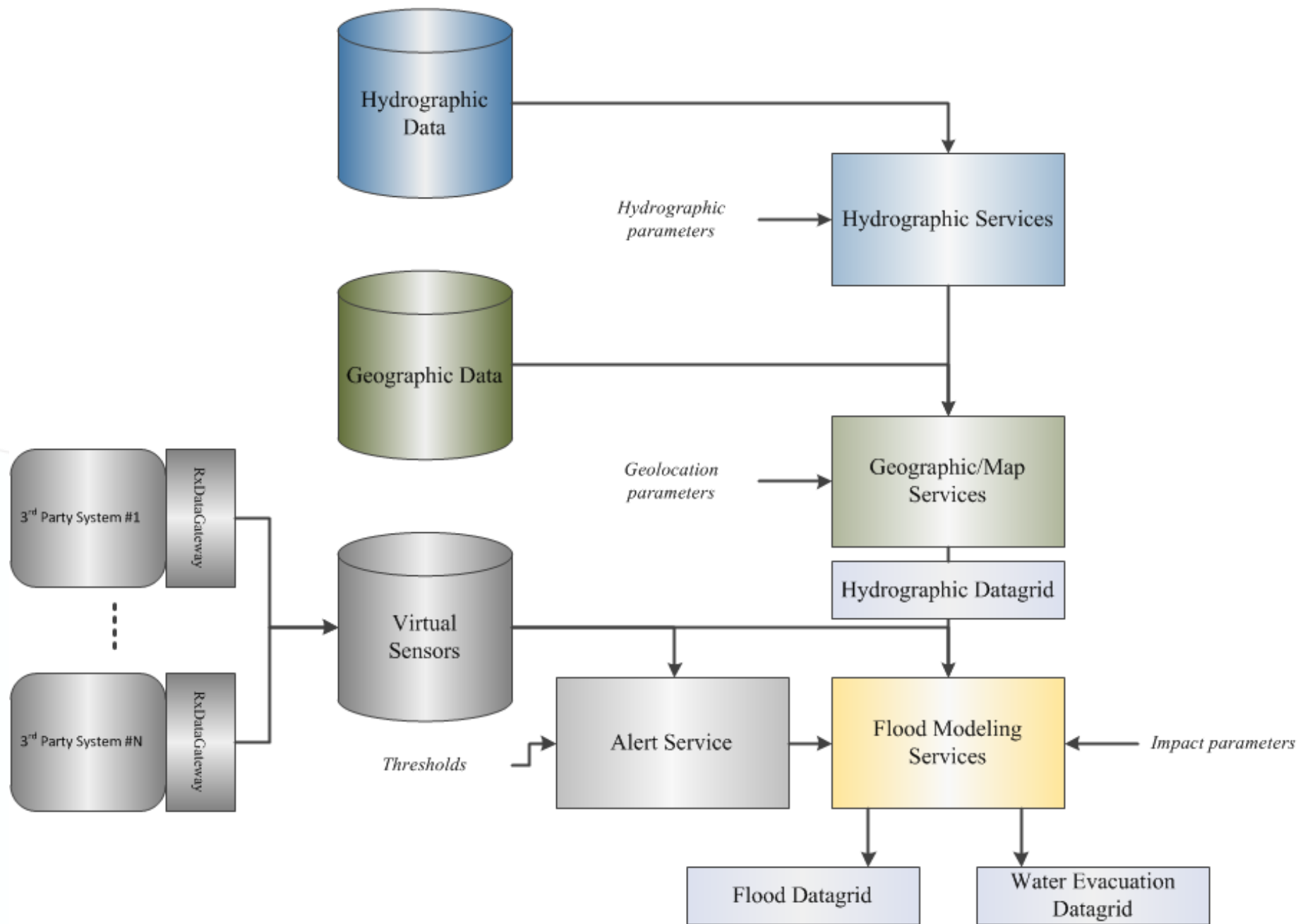
MODIS reference water: ■
 DCWV Rivers: — Urban Areas:
 Maximum Observed Inundation Limit 2000 - 2006: ■

Universal Transverse Mercator
 UTM Zone 35 North - WGS 84 - Graticule: 2 degrees
 Shaded relief from SRTM data

Copyright 2006
 Dartmouth Flood Observatory
 Dartmouth College - Hanover NH, 03755 USA
 Elaine K Anderson - G. R. Brakenridge

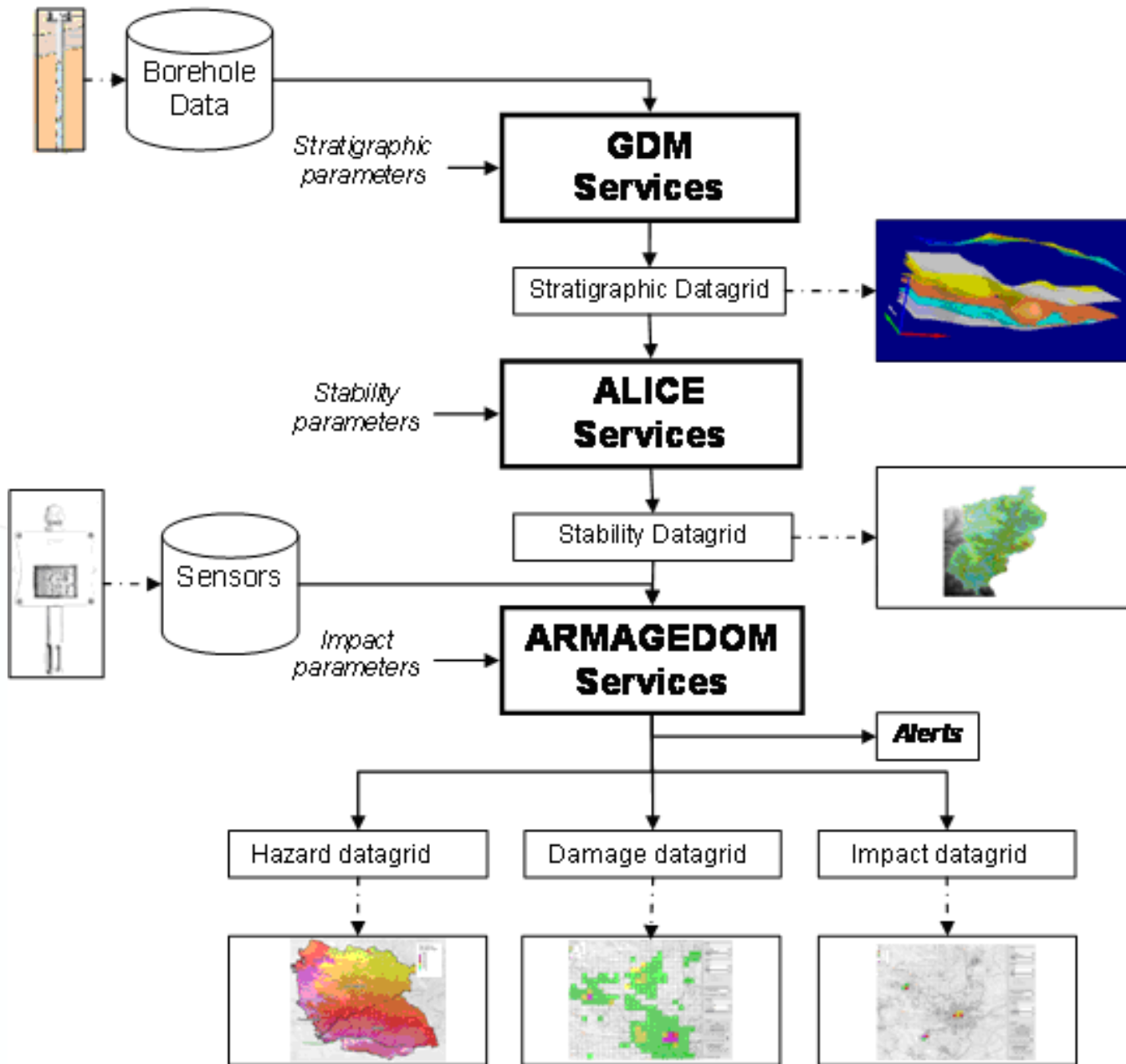


- Purpose: Predict (spring) flood waves to discharge dams on time
- Target Audience: Energy Providers in Serbia/Romania
- Issues:
 - Integration of real-time sensor data (exposing SCADA sensor data through OGC SWE services), instead of offline calculations (present situation)
 - Trans-boundary context (Serbia and Romania)



Landslides in Guadeloupe





- Acronym: ALICE
- Purpose: Compute instability potential of zones
- Target audience: Decision makers in Local Government
- Implemented: VB/.Net
- Current Access: Desktop-based
- Issues:
 - Deployment of sensors on site
 - Migration of models into WPS services

Scenario: Oil Spills in the Norwegian Sea



Chronicle / Kurt Rogers

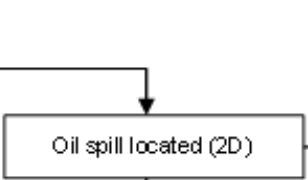


<satellite owner;
sensor network
owner>

Remote
In-situ



Oil spill detection

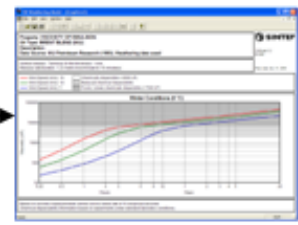


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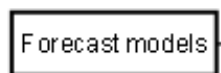
Remote
In-situ



Prevailing env conditions

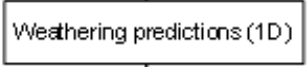


met.no



Weather, sea forecasts

Oil type



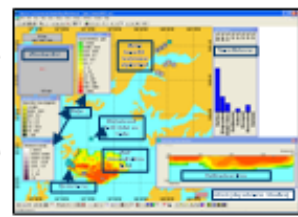
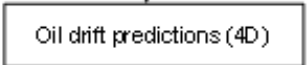
NMA



Maps



Spilled amount



IMR

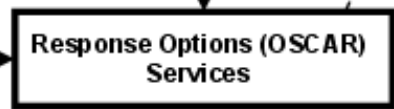
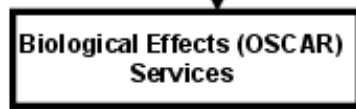


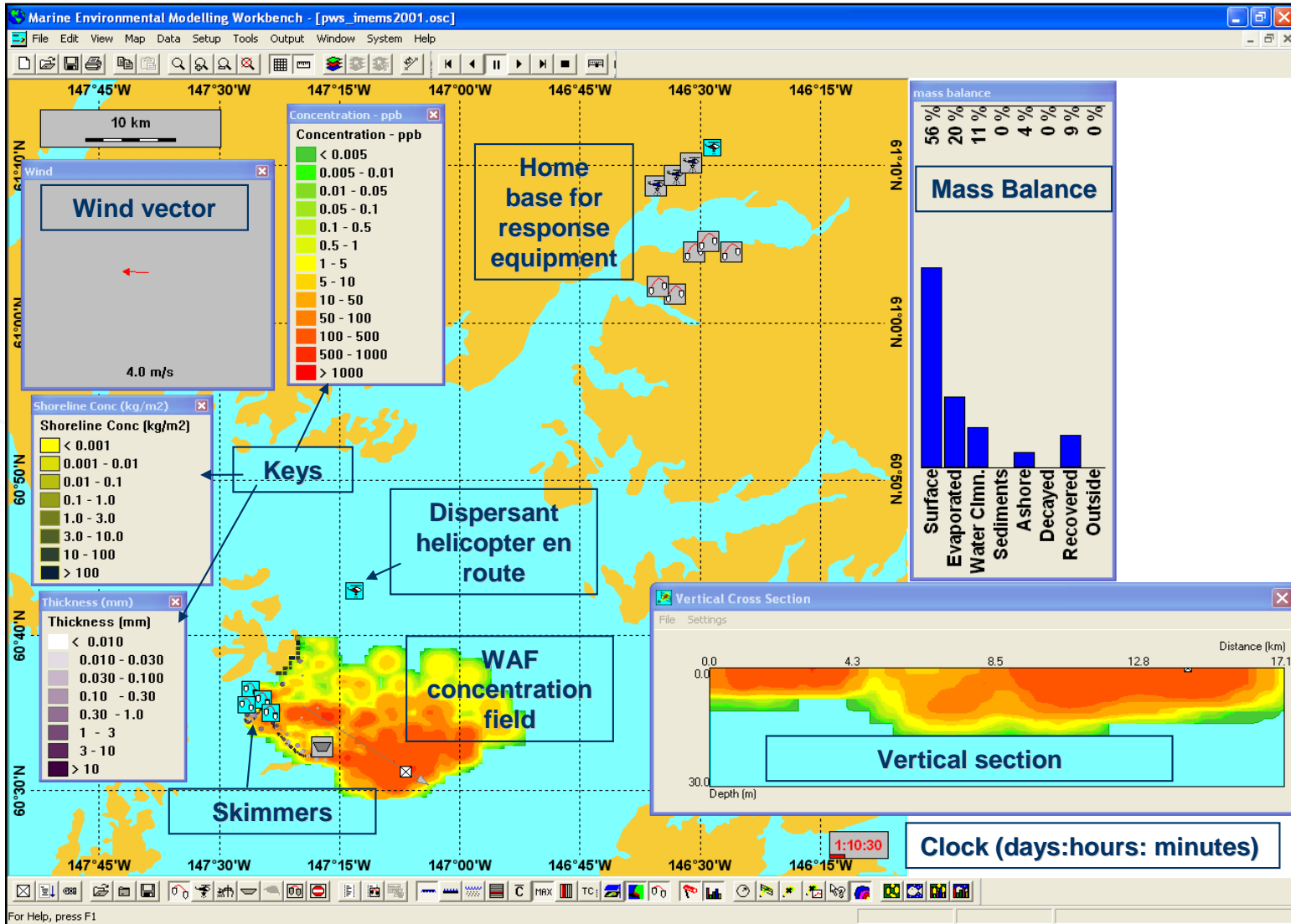
Biological resources

NOFO, NCA



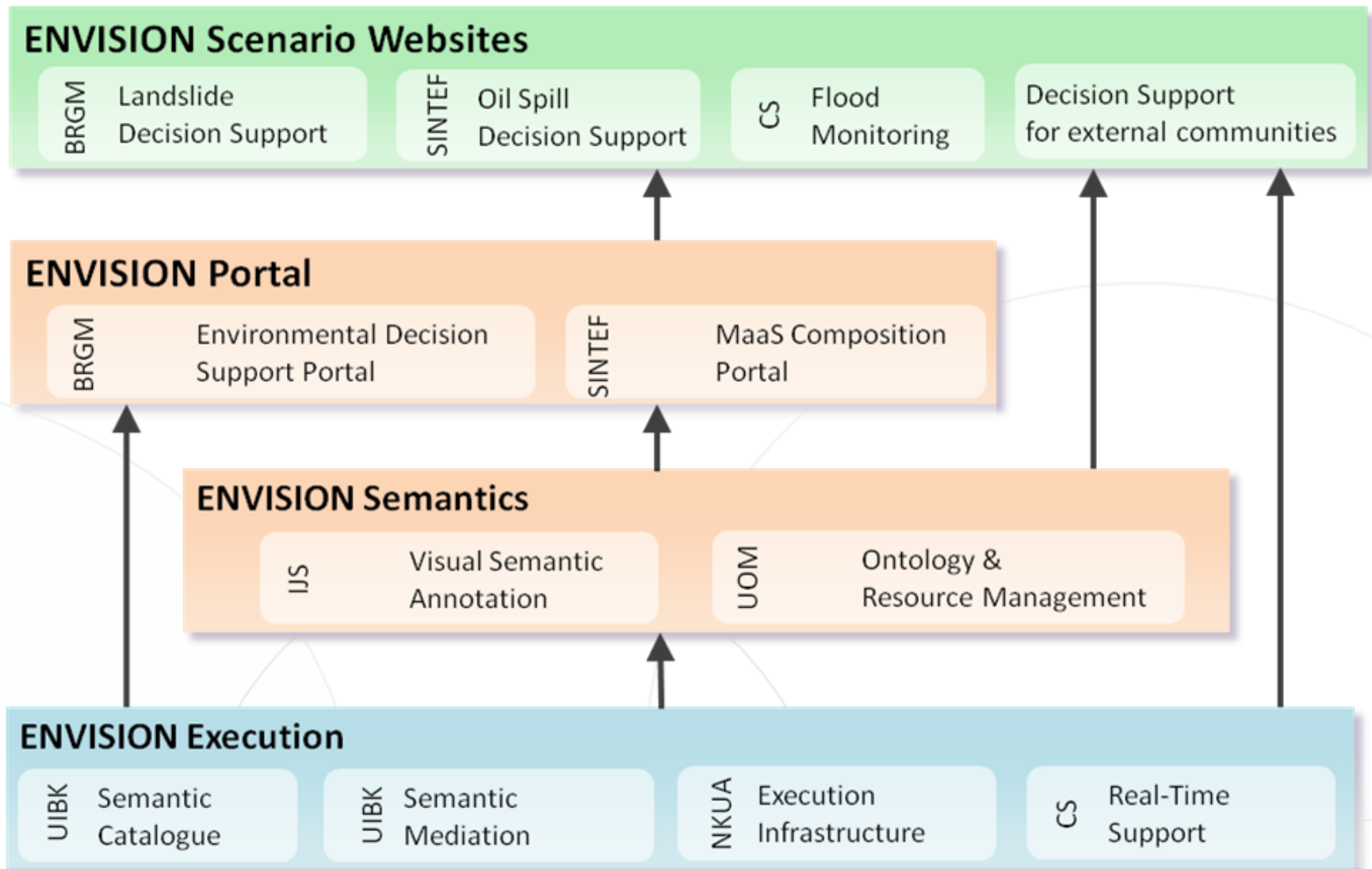
Response resources



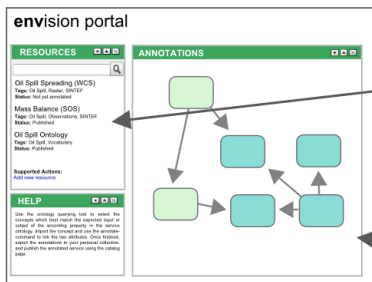


<http://goo.gl/Em4ag>

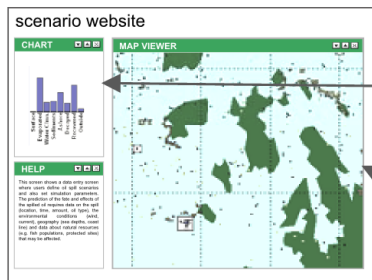
FILLING OUT THE SURVEY, PART I



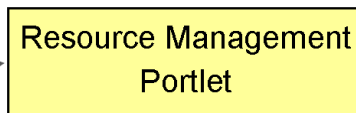
Frontend Portals



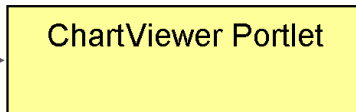
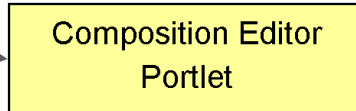
Portal is composed of Portlets



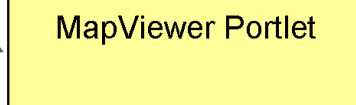
Portal Container



Inter-Portlet
Communication

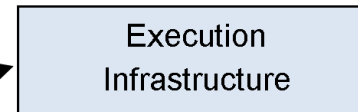
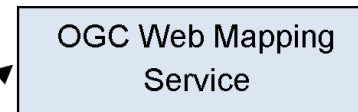
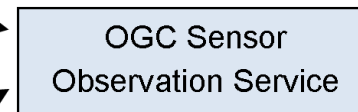
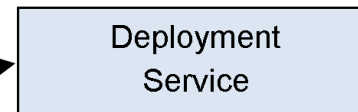
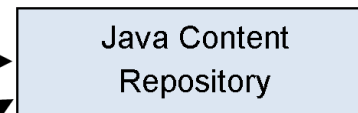


Inter-Portlet
Communication



Portlet communicates with Web services

Backend Web Services



- http://videlectures.net/envision_creating_sws/

- http://videlectures.net/envision_interacting_swssuc/

- http://videlectures.net/envision_composition_portlet/

<http://goo.gl/5LcPk>

FILLING OUT THE SURVEY, PART II