Using SOA Patterns to promote understanding across disciplines

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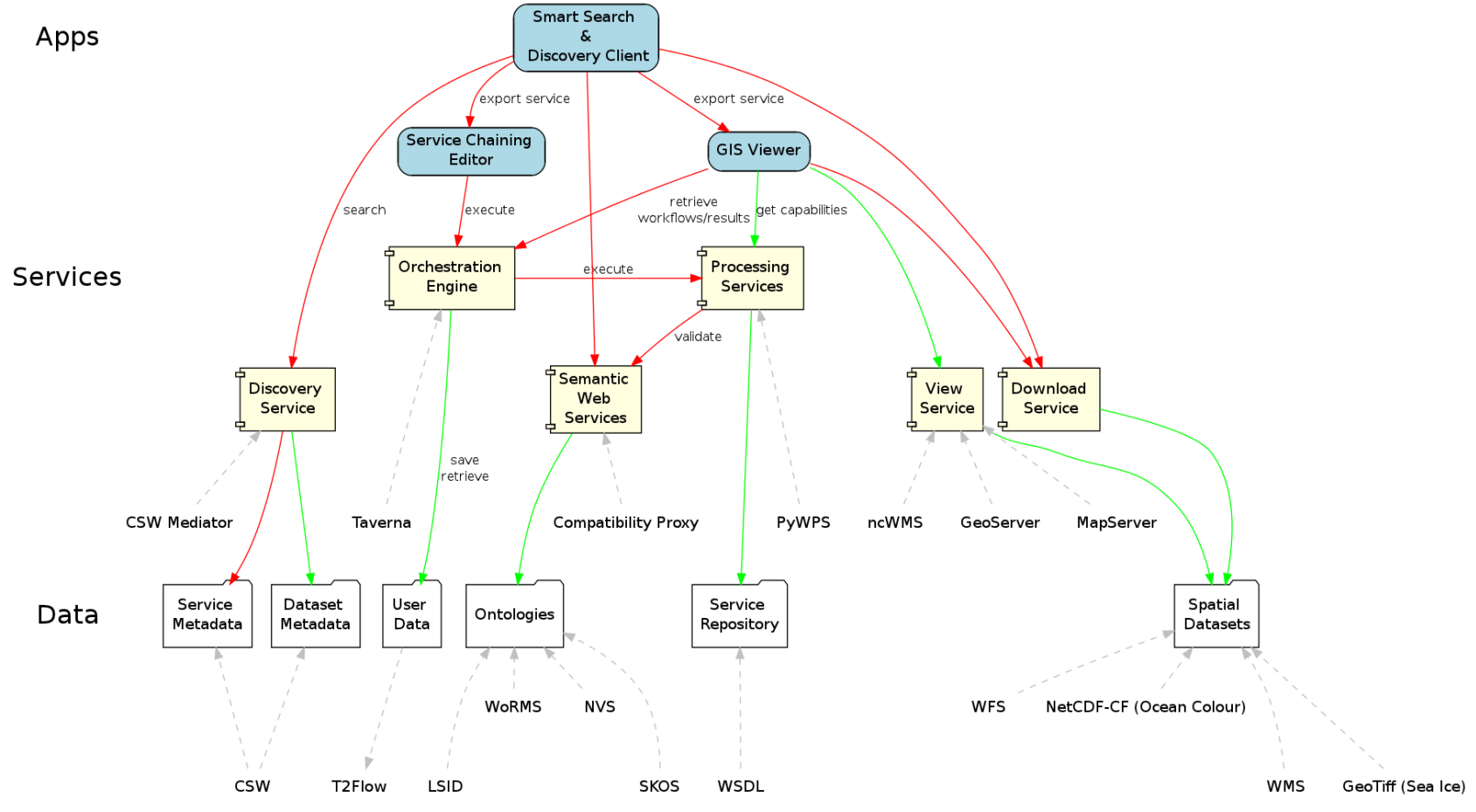
NETMAR


Apps
Services
Data
Smart Search & Discovery Client
export service
export service
Service Chaining Editor
GIS Viewer
search
execute
retrieve workflows/results
get capabilities
Orchestration Engine
execute
Processing Services
validate
Discovery Service
Semantic Web Services
View Service
Download Service
save retrieve
CSW Mediator
Taverna
Compatibility Proxy
PyWPS
ncWMS
GeoServer
MapServer
Service Metadata
Dataset Metadata
User Data
Ontologies
Service Repository
Spatial Datasets
WoRMS
NVS
WFS
NetCDF-CF (Ocean Colour)
CSW
T2Flow
LSID
SKOS
WSDL
WMS
GeoTiff (Sea Ice)

Definitions

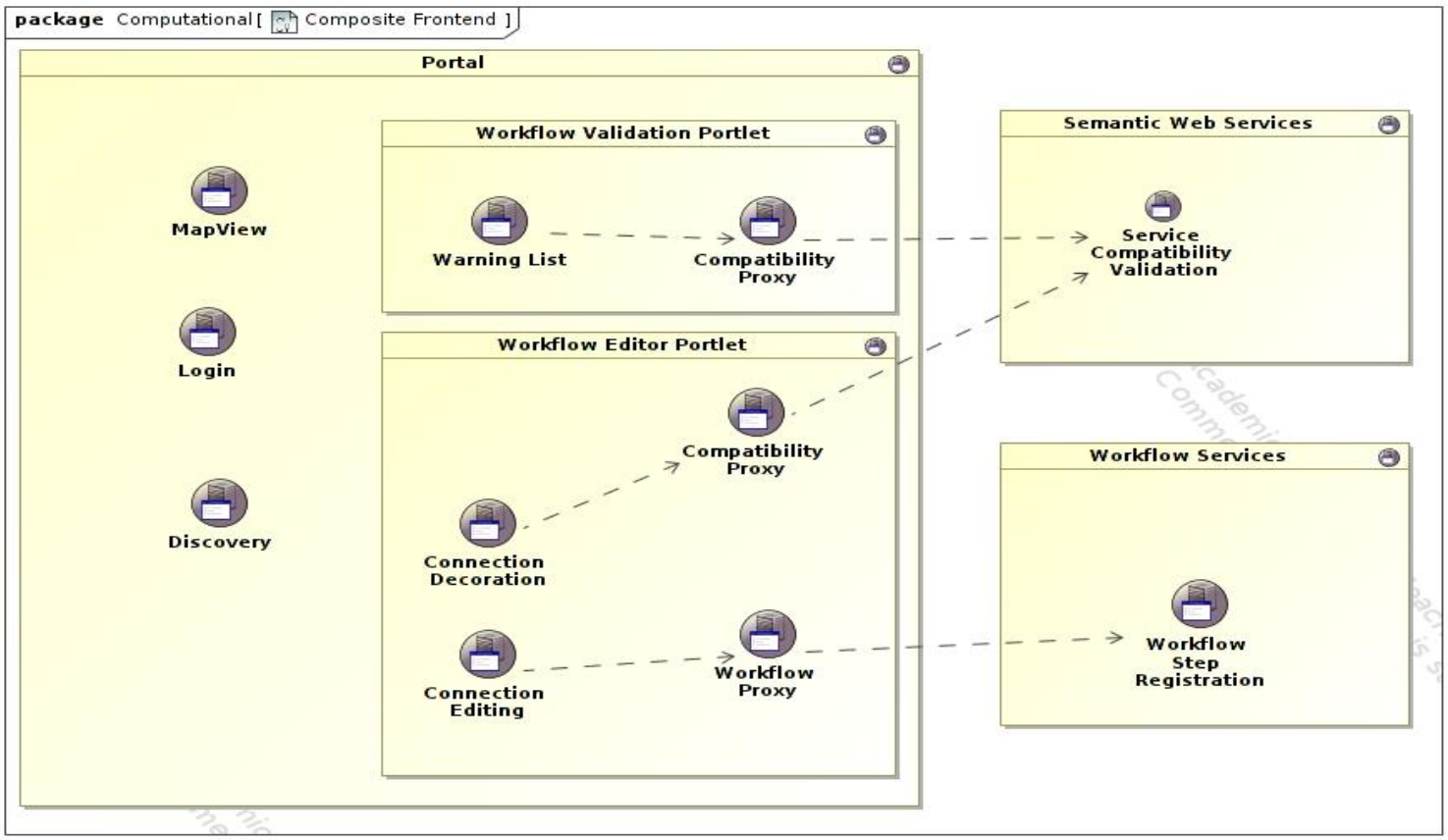
- Architecture
  - Fundamental decisions
  - Meet quality attributes
- Patterns
  - Solution + context
- Service Oriented Architecture
  - Set of patterns
  - Business logic (getting stuff done)

OO v SOA

- NERC Vocabulary Server
- OO View
  - REST calls, returning XML representing terms
- Service View
  - Governance
  - Authoritativeness
  - Provenance
  - Mapping

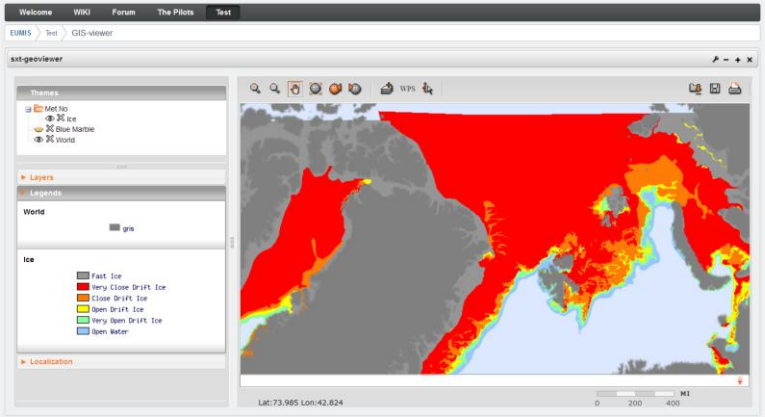
Composite Front End (Portal)

How do you we interact with multiple services, get an integrated, cohesive user interface and still preserve SOA principles and modularity benefits? *Rotem-Gal-Oz - SOA Patterns*

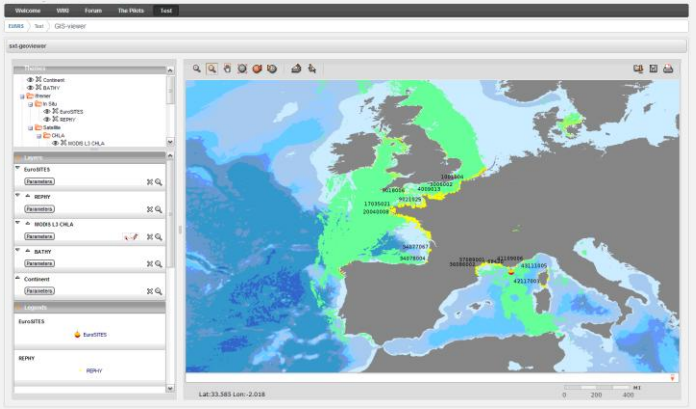


Multiple User Domains

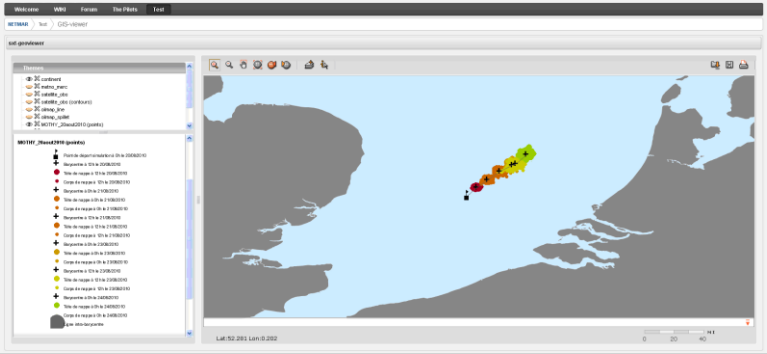
Ice pilots



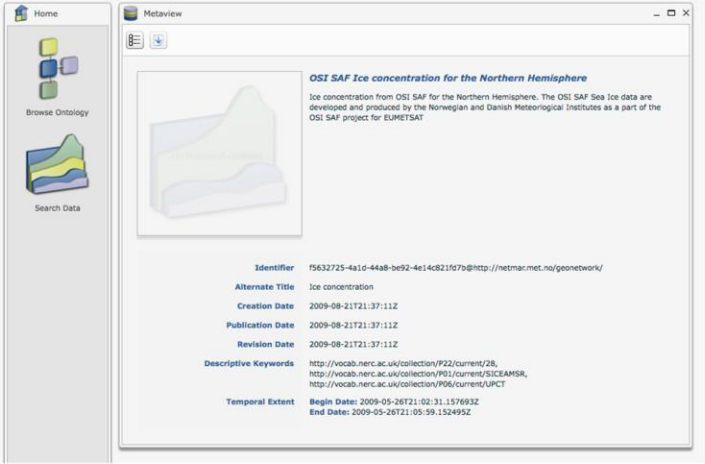
Oil slick monitoring



Oceanography

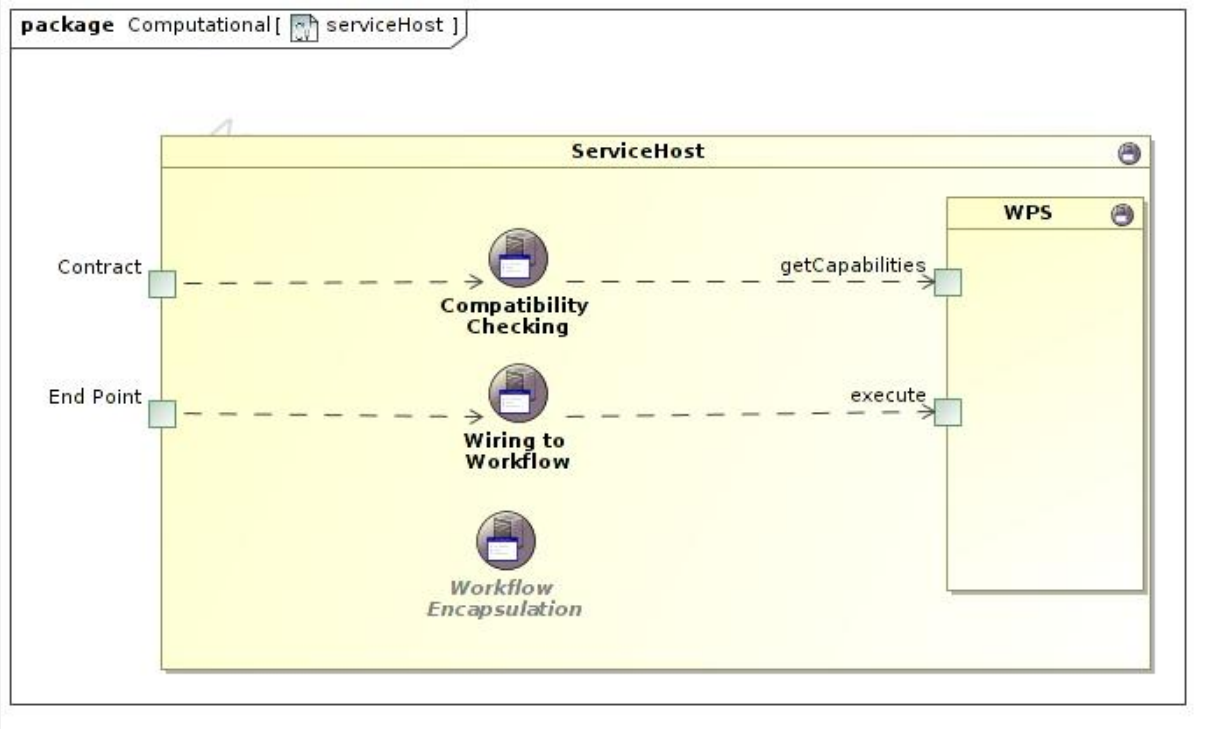


Coastal Atlas



Service Host

There needs to be a way to easily configure services, and avoid duplicating the effort of mundane tasks such as setting listeners, and wiring components, for each service.



Multiple Disciplines

- Geographical / Earth Sciences
  - WPS, Grass GIS modules
- Biological
  - Taverna, MyExperiment

PBAR

- Patterns Based Architecture Reviews
  - Harrison, Avgeriou, *IEEE Software*
- Focused stakeholder conversation
- Agile approach to architecture
- Checklist based on ATAM General Scenarios
  - Software Engineering Institute

Conclusion

- Architecture guides conversation
- Emphasise added value over interfaces
- Concrete guidance
- Agile architecture
- Bridge between IT and domain experts

Thank you, any questions?

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