



Introduction to Prod-Trees

Bernard Valentin



Outline

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- Background
- Prod-Trees Project
- RARE Project and Platform
- Status
- Future

Background (ESA)

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- Situation
 - ▣ The demand for EO products increases
 - ▣ Bigger variety and quality of data, higher accuracy
 - ▣ Open dataset repositories accessible to end-users

- Identified problem
 - ▣ Application Experts not familiar with EO concepts still experience problems in discovering and obtaining EO data




- Possible causes
 - ▣ Terminology barrier: Discovery metadata terminology mismatch
 - ▣ Technology barrier: Proprietary implementation of services and products

Prod-Trees Project Overview

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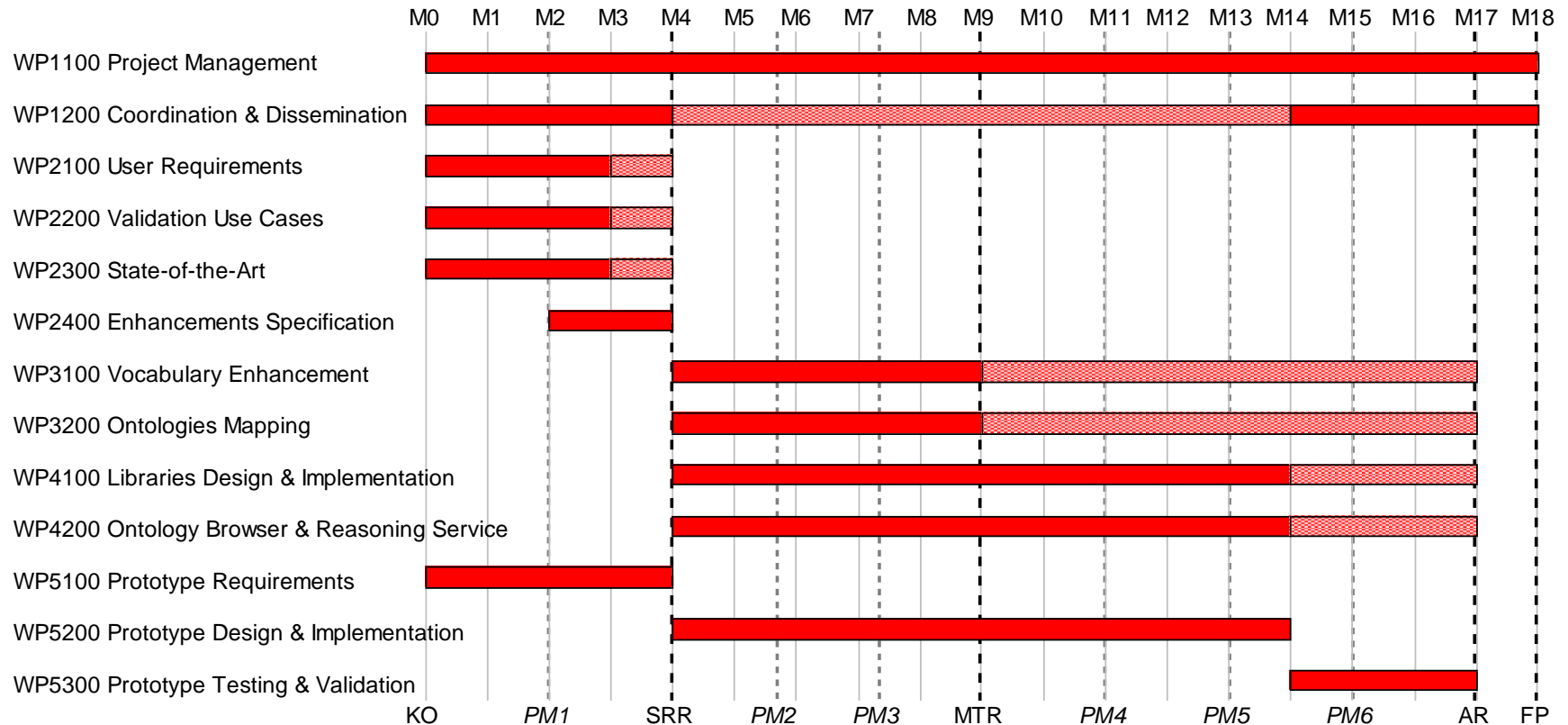
Enriching EO Ontology Services Using Product Trees (Prod-Trees)

<http://wiki.services.eoportal.org/tiki-index.php?page=PRODTREES>

- On-going ESA project with   National and Kapodistrian University of Athens 
- Main Objectives
 - ▣ Specify an EO convention for the netCDF standard: "EO-netCDF"
 - ▣ Demonstrate in a semantically-enabled EO products search platform
- Implementation
 - ▣ Initial EO-netCDF convention specified by CNR
 - ▣ Demonstrator based on the RARE system
 - ▣ Cross-Ontology Browser: GSCDA, GEOSS, GEMET, GCMD
 - ▣ Rules for mapping Application Terms to EO-netCDF search criteria
 - ▣ Dynamic Multi-Criteria Search Page for Experts

Prod-Trees Planning

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Project start / end date: December 2012 / June 2014 (18 months)

Prod-Trees Validation Group

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- User Requirements and candidate Validation Use Cases collected from the start of the project
- Validation Group initially constituted with the respondents to the user specifications questionnaire
- The Validation Group may be extended with new interested members
- EO-netCDF Convention v1.1 will be published on Prod-Trees' ESA Wiki:
<http://wiki.services.eoportal.org/tiki-index.php?page=PRODTREES>
- The Validation Group will be contacted through a mailing list at the end of the project to evaluate the results

RARE Project Overview

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Rapid Response Support Server (RARE)

<http://wiki.services.eoportal.org/tiki-index.php?page=RARE+Project>

- ESA project (2011) with  
- Objectives
 - ▣ develop an ontology-based resolving service for heterogeneous EO resources,
 - ▣ which integrates with existing EO facilities via standardized protocols and
 - ▣ provides users with a web interface for textual search.
- Challenges
 - ▣ Must be usable by users with no specific EO knowledge
 - ▣ Search for different types of resources in a seamless manner

The RARE System

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The RARE system ...

- has a Web-based User Interface
- is distributed (REST/SOAP Services)
- supports a single ontology (GSCDA)
- supports OGC CSW/ebRIM catalogs (W*S, EOP, CIM records)
- supports OGC CSW/ISO catalogs (Data and Service metadata)

RARE to Prod-Trees Evolution

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- Add support for multiple ontologies and their mapping
- Add support for OGC CSW/OpenSearch catalogs
- Add support for EO-netCDF products metadata
- Allow users to specify EO-netCDF search criteria in their queries
- Encode sample EO products into EO-netCDF for testing

Prod-Trees Status

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- EO-netCDF Convention v1.1 (CNR)
 - EOP Core + Thematic Modules (OPT, SAR, etc.) + Sentinel-1 Module
- Cross-Ontology Semantic Discovery (CNR)
 - GI-sem Semantic Broker
- Cross-Ontology Browser (UoA)
 - Ontologies: GSCDA, GEOSS, GEMET, GCMD
 - Cross-Ontology Ontology Mapping
 - Ontologies and Mapping data stored in a Strabon RDF triplestore
- EO-netCDF Reasoning Rules (UoA)
 - Application Terms → EO-netCDF search criteria
- OpenSearch catalog serving EO-netCDF products metadata (CNR)
 - GI-cat Catalogue Broker (same technology adopted in GEOSS for the GEO DAB)
 - Sentinel-1 sample data and Envisat public data converted as EO-netCDF products

Future

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- Write the structured version of the EO-netCDF convention
- Finalize the software components and the prototype demonstrator
- Proceed with the evaluation with the Validation Group
- Demonstrate the outcome to ESA mission managers
- Close the project with ESA
- CNR will pursue the work on the EO-netCDF convention through standardization groups such as the OGC CF-netCDF SWG

Thank you