BIO_SOS Biodiversity Multisource Monitoring System From Space to Species

Contract No: FP7-SPA-2010-1-263435
Istrument : Collaborative Project
Thematic Priority : FP7-SPACE-2010-1
Start of project: 1 December 2010
Duration : 36 months

BIO_SOS´ EODHaM System towards an operational Habitat Monitoring Service

SCOPE

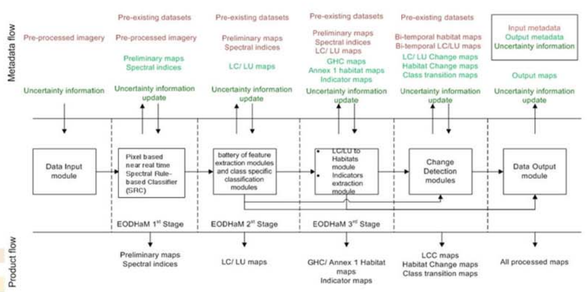
Main objectives of the EODHAM system are:

- Semi-automatic system
- Site customization
- Open to new algorithms for other products
- Independent from the operator
- Distributed architecture

MAIN CHALLENGES

- Operative with medium and high scales
- High level of automations
- High level of affidability
- High level of computational efficiency
- Reduction of timeliness between data acquisition and products delivery
- Reduction of costs for the final users

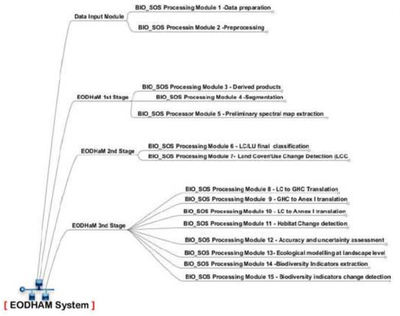
EODHAM System – overall workflow



The EODHaM system offers the right mix of site specific configurability and pre-engineered processing modules and workflows, that allows to offer a Habitat Monitoring Service, particularly suited to support the multi-annual monitoring of NATURA 2000 sites. The service provisioning foresees for each site an inception phase, during which the service provider collaborates with domain experts from the site in question in order to setup together the optimal service chain and processing configuration, customizing the workflow steps from the range of pre-built, configurable processing modules.

EODHAM System Modules

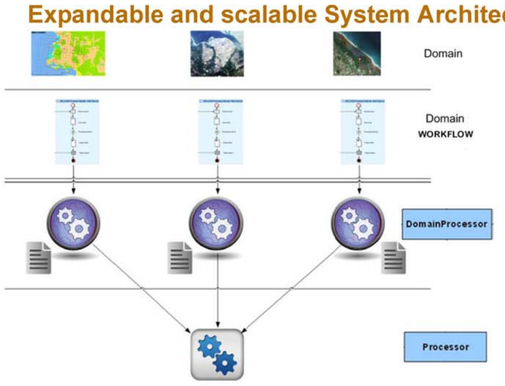
The FP7 project BIO_SOS elaborates the EODHaM (EO Data for Habitat Monitoring) System, which combines several stages of elaboration into a single workflow. The EODHaM system is an operational prototype of an ecological modeling system for effectively and multi-annual monitoring of NATURA 2000 sites (and other ecologically sensitive sites) and their surrounding areas.



Due to several national and regional differences in policies/ funding and the lack of a centralized management of biodiversity data, even at the same regional-local level, a noticeable effort is required in order for a continuous, operational and quasi real-time monitoring of ecologically sensitive areas to be initiated. In search of such a monitoring system, the starting point should be to know the main 'actors' requirements and expectations.

The EODHaM system is defined as a complete automatic system of work-flow administration. The system will serve in efficiency the aim of the project for a multi-annual monitoring of NATURA 2000 site and their surrounding areas, as other ecologically sensitive sites. The EODHaM system will use different technologies, all well structured between them, with final aim the processing, production, cataloguing, and distribution of the BIO_SOS product.

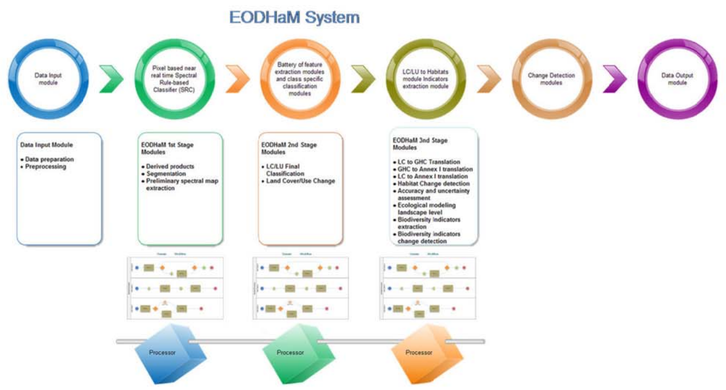
Expandable and scalable System Architecture



During the elaboration of the system architecture, and due to the varying typology of the Nature 2000 sites the system shall be able to work on, a high need for site ("domain") specific customizations both of single processing steps and of entire workflow chains emerged. The use case analysis hence started from a system-external one: The definition of a new, domain specific chain.

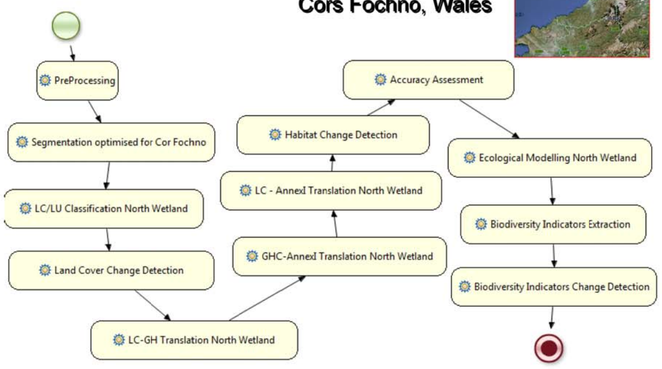
In terms of service definition, this adds an "Inception phase" to the service offer, during which the service provider offers to the customer a customization of the workflow for the specific site, defining a set of parameters, choosing ancillary data and configuring the processing modules with domain specific configurations. The complexity of this "Inception phase" depends on the product's complexity itself (different BIO_SOS products have different levels of elaboration) and the given,. site-specific constraints. This "Inception phase" needs collaboration and input from the domain experts (mostly scientists) that created the theoretical basis for the involved processing modules.

EODHaM System



Use case of Nordic Wetland Workflow

Cors Fochno, Wales



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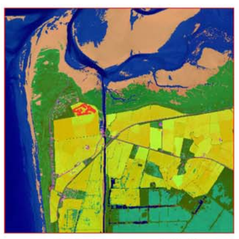
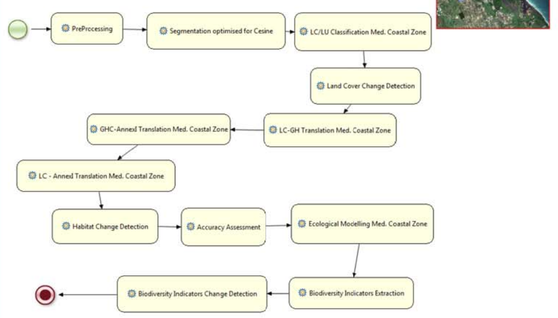
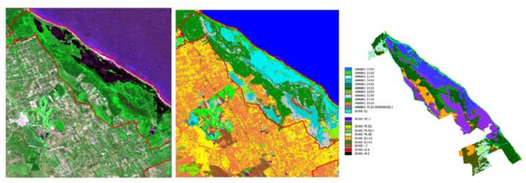


LCCS level 1-3

Use case of Mediterranean Wetland Workflow

Le Cesine, Italy





Quickbird June 2009- 2.4 m In red: "Le Cesine"

Landuse map

Habitat map: ANNEX 1 ed Eunis habitas

FURTHER INFORMATION

Project Home
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