



EO_Regions_Science! BAasic Research In Support to EO_Regions

Programme
STEREO III

Contract
SR/00/309

Start - End
1 June 2016 - 31 August 2018

Project type
Shared cost

https://eo.belspo.be/EO_Regions!



Context and objectives

EO_Regions_Science is a shared-cost project to perform a consistent and coordinated set of basic research activities in support to the EO_Regions! Project coordinated by SPACEBEL.

EO_Regions! aims to develop innovating Earth observing downstream services and to develop a functional, portable methodology performing for commercial applications of satellite imagery. It requires the development of new methodologies for dynamical monitoring of territories, a refined semantic layer for a clear understanding of user needs and a good prediction of service accuracy, to being accessible to users non-expert in remote sensing and to insure a correct use of information. The services are based on an integrated big data infrastructure providing an easy and quick access and allowing the combination of new EO data with already existing local data.

EO_Regions_Science aims to consolidate the scientific basis on which the services proposed by EO_Regions! are built and to facilitate their operationalization.

In the context of current project, the services will first be developed at a regional scale, in Wallonia, with the intention to export the developed system as a tool-box to other European regions and emergent countries. Especially, Poland and Senegal have been identified as end-users. The application fields of EO_Regions_Science are Wallonia and Senegal.

The thematics are

- land use management,
- natural hazards: old mineshaft monitoring, ground movements follow-up, subsidence monitoring, flood and water hazards...
- agriculture: crop survey, crop growth monitoring..

Project outcome

Scientific results

- Corner Reflector specifications and design for ground displacement measurements by DInSAR based on Sentinel-1 imaging;
- Ontologies allowing to ensure a coherence between users request and performed treatments, providing the most valuable service to the user, even if he doesn't have any knowledge in the remote sensing domain and its specific vocabulary;
- Change analysis & detection toolbox;
- Improved methodology for crop modelling and yield forecasting at parcel level in Senegal.

(Potential) Services and Users

Potential users are people or institutions implicated in:

- management/valorization of the natural resources;
- land use management, taking account of environmental trade-offs;
- agriculture, forestry, crop yield monitoring;
- teaching and geomarketing.

The defined EO_Regions end-users in Wallonia are

- administrations : Ville de Liège, Province de Liège (office of calamities), Services Publics de Wallonie (SPW);
- the Bemelmans consultancy, operating in forestry management as well in Belgium as in France and Luxemburg;
- scientific teams: Institut Scientifique de Service Public (ISSeP) and Unité de Géomatique (UGEOM) of the Geographic Department of the University of Liège ...

Regarding European regions and emergent countries, Poland and Senegal have been identified as end-users of the EO_Regions platform.



Project leader(s)

ORBAN Anne | CSL - Centre Spatial de Liège
aorban@ulg.ac.be

Belgian partner(s)

STEPHENNE Nathalie | SPW - Département de la Géomatique
nathalie.stephenne@spw.wallonie.be

TYCHON Bernard | ULg - Département des Sciences et Gestion de l'Environnement
Bernard.Tychon@ulg.ac.be

NEYT Xavier | ERM - KMS - RMA - Signal and Image Centre
Xavier.Neyt@elec.rma.ac.be

BILLEN Roland | ULg - Département des Sciences géographiques
rbillen@ulg.ac.be

Location

Hainaut, the basin of Liège-Charleroi, the city of Liège, Walloon Natura 2000 sites (Belgium) and Senegal

Website

https://www.eed.uliege.be/cms/c_5037041/fr/eo-regions-science-project



Belgian Science Policy Office (BELSPO)

WTC III - Boulevard Simon Bolivar 30 b. 7 Simon Bolivarlaan • B-1000 Brussels
Tel. +32 (0)2 238 34 11 • www.eo.belspo.be • Email: stereo@belspo.be