

next Earth Observation calls

EO-1-2015: Bringing EO applications to the market

Specific challenge To bring EO apps to the market according to users' demands, to be validated and proven, in an environment integrated.

Scope To realize a commercial service platform, sustained by a production process capable to deliver to the user a product validated and accepted as a marketable product.

Expected impact To establish sustainable supply chains for innovative EO applications with demonstrated commercial value with targeted client communities.

Type of action Innovation actions.

EO-2-2015: Stimulating wider research use of Copernicus Sentinel Data

Specific Challenge To stimulate the scientific re-use and use of satellite data from Sentinel 1, 2 and 3 for scientific R&D.

Scope To fully benefit from the high scientific, operational and commercial potential of the Sentinel data, development tools, as well as stable and predictable access methods need to be developed.

Expected impact To extend the use of Copernicus Sentinel data in Europe as well as internationally.

Type of action Research and innovation actions.



Space for innovation.

We observe, detect and forecast the world change, offering innovative services, able to meet every need of the market and to be applicable to further sectors.

[we observe]

We work by using methods and technologies, designing customized solutions and cultivating the right skills. Professionalism, creativity and timeliness are our keywords.

We work day by day to develop new tools for the detection and investigation of new techniques in the fields of Earth Observation and Environmental Monitoring.

That's why the innovation is the space that we explore first.



We have been providing for 15 years territorial monitoring services, using satellite Earth Observation data, radar and optical, offering different products such as deformation maps, land/cover use maps, biotopes maps.

[we design]

These services are the result of a continuous research of innovative image processing techniques.

In regard to radar data, in 2005, Geocart developed an own software called "SLIDE" - acronym of SAR Land Interferometry Data Exploitation - to generate displacement maps of the territory by using the PSInSAR technique. SLIDE was then validated in several case studies carried out in Rome, Maratea and other sites in Basilicata Region. Actually, SLIDE is able to use COSMOSkyMed data. Geocart has got expertise in the design of artificial passive Corner Reflectors to be used as reference measuring points, identifying the best solution in terms of feasibility and cost efficiency, easiness of transport, installation and un-installation.

The development of a change detection technique to identify heavy lorries on pipelines (e.g. excavator) is a specific objective of a on-going project. Presently, we are interested to enhance our know-how about the surface deformation and the change detection techniques by means of radar data.

About the satellite optic data, since 2001, Geocart began to deeply study the classification techniques for multispectral images. Now, the research aims to develop methods and image processing techniques suitable to the use of hyperspectral VNIR-SWIR satellite data available in the near future such as PRISMA, EnMAP, HYPXIM missions.

Moreover, we use Earth Observation data acquired by our own airborne multisensor platform, called MAPPING, for calibration and validation activities of research projects. MAPPING consists of an IMU-Inertial Measurement Unit (IMU -2d), a thermal camera, a high resolution digital camera, a system of VNIR -SWIR hyperspectral sensors, a high resolution laser scanner, able to produce ortophotos, hyperspectral images, thermal images and orographic maps (DSM, DTM).

We submitted a proposal under the first call Space, Horizon 2020, "EO-1-2014-New ideas for Earth-relevant space applications", participating in an international consortium as a SME.

[we watch]

Horizon 2020 - Leadership in enabling and industrial technologies – Space

Call H2020-EO-2014

Topic EO-1-2014 - New ideas for Earth-relevant space applications

Type of action Research and Innovation Action

Participant Organisation Name	Country
Centro Di Geomorfologia Integrata per l'Area del Mediterraneo (CGIAM)	Italy
National Observatory of Athens (NOA)	Greece
University of Hull (UHULL)	UK
Istituto Nazionale di Geofisica e Vulcanologia (INGV)	Italy
CIMA FOundation	Albania
Geocart S.p.A.	Italy

Our proposal

EOS4COASTS - Earth Observation integrated System for COASTal Surveillance

Abstract EOS4COASTS aims to exploit Earth Observation data of the Copernicus System, such as Sentinel-1, Sentinel 2, and future hyperspectral satellite missions (e.g. PRISMA, EnMAP, HYPXIM) in order to develop and implement innovative techniques, useful to generate relevant information for coastal environment monitoring, surveillance and management.

The project objective will be achieved through:

- the development of a new "multi-band" methodology for Land-Sea use Change map using SAR data products and optical data for identifying specific coastal issues and for providing open data to the End Users;
- the implementation of a single transnational competitive (in terms of costs and time) monitoring system, based on the use of space data for monitoring coastal environment.

The relevance of the EOS4COASTS proposal to the work programme is underpinned by:

- the exploitation of collected space data related to Earth-related topics in order to meet the EU environmental policy and societal needs;
- the implementation of a system based on the use of Copernicus Sentinel Data and future hyperspectral satellite missions.

MAIN PROJECTS

- DESIGN AND DEVELOPMENT OF METHODS IN ORDER TO MONITOR EARTH DEFORMATIONS BY USING INTERFEROMETRIC TECHNIQUES FROM SAR DATA (ERS1, ERS2, ENVISAT).
GEOCART RESEARCH AND INNOVATION PROJECT FOR DEVELOPING THE SOFTWARE SLIDE | PERIOD: 2001-2005
- COSMO-SKYMED FOR THE MONITORING OF COAST EVOLUTION: MULTI-TEMPORAL ANALYSIS OF COASTS OF BASILICATA AND CALABRIA
CLIENT: ITALIAN SPACE AGENCY - ROME | PERIOD: 2001-2002
- MONITORING THE DISPLACEMENTS OF ARTISTIC WORKS AND BUILDINGS IN THE OLD TOWN CENTRE OF ROME
CLIENT: CENTRE OF INTEGRATED GEOMORPHOLOGY FOR THE MEDITERRANEAN AREA (CGIAM) - POTENZA | PERIOD: 2006-2008
- A SOFTWARE TOOL IN ORDER TO PROCESS SAR STRIPMAP DATA AND CALCULATE THE DEFORMATION MAP WITH SUBCENTIMETER PRECISION
CLIENT: ITALIAN SPACE AGENCY - ROME | PERIOD: 2010-2012
- "SIMO" - INTEGRATED MONITORING SYSTEM APPLICATION TO THE GAS PIPELINE
CLIENT: ITALIAN SPACE AGENCY - ROME | PERIOD: 2012- ON-GOING

