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Highlights

By Dr Haris KONTOES, NOA Research Director, Coordinator of BEYOND

Four main pillars underpin the exploitation of the skills owned by the BEYOND Center of Excellence, ensuring the future sustainability of its operations. These are: (i) the formal protection of the generated IP, (ii) the attraction of new funds in European competitive frameworks, (iii) the formal participation in large scientific and research infrastructure networks, and (iv) the development of a concrete exploitation plan to capitalise on the assets and research potential developed through capacity building. In this framework the BEYOND Center of Excellence addresses societal priorities in the domains of Disaster Risk Reduction, and Emergency Response as set out in the large scale initiatives and European programs such as the GEO, GEOSS, and the Copernicus EMS Risk & Recovery.

Especially in the framework of the Copernicus EMS Risk & Recovery, the group has been actively involved together with its partnering organisations (Geoapikonisis SA, Altamira SA, and CIMA Foundation) in the following activations which were launched, and timely and successfully delivered in the last six months:

EMSN018: Multiple natural hazard risk assessment - Planning and Recovery in the Azores Islands, Portugal

EMSN020: Multiple natural hazard risk assessment - Planning and Recovery in Madeira and Porto Santo islands, Portugal

EMSN021: Earthquake risk assessment – Planning and Recovery in Austria

EMSN022: Post-disaster analysis, damage assessment, recovery and rehabilitation planning and monitoring, flood risk assessment, disaster preparedness and response mechanisms in Bulgaria

Some thousands of risk & recovery products were produced for a range of hazards, such as earthquake occurrence, volcanic eruptions and lava flow, landslides, soil and coastal erosion, tsunamis caused by earthquakes, as well as flooding and flash flooding, and toxic gasses concentrations due to industrial accidents. Moreover, risk-specific mitigation measures were proposed for all the above cases of risks, and critical first response spatial analysis was carried out to support decision making concerning planning and recovery activities.

The group with its partners is now working on the following ongoing activations:

EMSN025: Forest fire damage assessment – Planning and Recovery in Greece;

EMSN026: Post-disaster assessment of toxic cloud dispersion after an industrial accident in Catalonia, Spain.

For more information please visit: <http://www.beyond-eocenter.eu/index.php/ems>

BEYOND Center of Excellence is hosted at the National Observatory of Athens (NOA) - Institute of Astronomy, Astrophysics, Space Applications and Remote Sensing (IAASARS). The operations of BEYOND officially started in June 2013, with a duration of three years. The approved EC budget contribution for BEYOND is 2.305.650 Euros.

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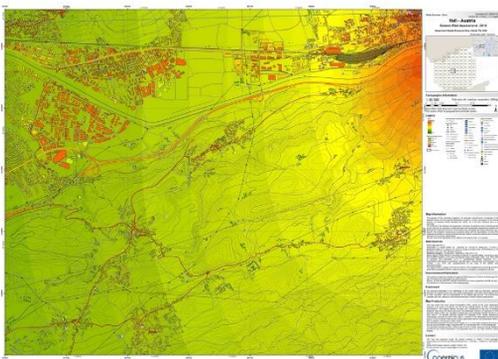
Activations EMS

Earthquake risk assessment Austria – Planning and Recovery

The scope of the service request EMSN-021 was the generation of seismic hazard, vulnerability and risk products as far as it concerns the population and assets at risk (infrastructures/environmental assets and transportation network), as well as the evaluation of the likelihood and extent of secondary risks triggered by earthquake (landslides and flood).

Risk-specific mitigation measures were proposed and critical first response spatial analysis was carried out to support decision making concerning planning and recovery activities of the involved stakeholders.

The key user of the map series is the Ministry of the Interior, Dep. II/13, Austria.



Seismic Risk Assessment-Hazard and Assets Exposure –Hall, Austria



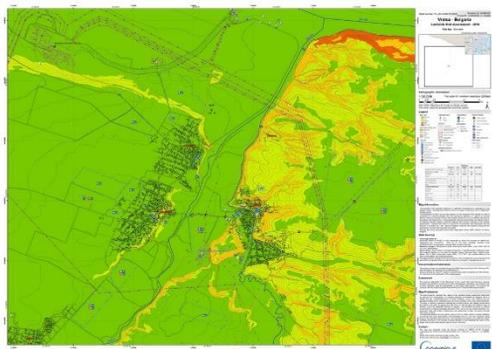
Seismic Risk Assessment-Buildings Damage Grade–Hall, Austria

Post-disaster analysis, damage assessment, recovery and rehabilitation planning and monitoring, flood risk assessment, disaster preparedness and response mechanisms in Bulgaria

The scope of the service request EMSN-022 was the generation of accurate research on the dynamics of the disaster in order to contribute to a learning process from the behaviors observed (i.e. failures or success stories). Moreover, through a Flood Risk analysis assets at risk are identified (focusing on population and infrastructure).

Towards adequate disaster preparedness and efficient support on decision making concerning planning and recovery activities of the involved stakeholders, potential and extent of occurrence of secondary risks (landslides and soil erosion) are also evaluated, as well as risk-specific mitigation measures were proposed and critical first response spatial analysis was carried out.

The key user of the map series is the Earth Observation Center (SMC), Ministry of Interior, Bulgaria.



Landslide Risk Assessment – Vratsa, Bulgaria

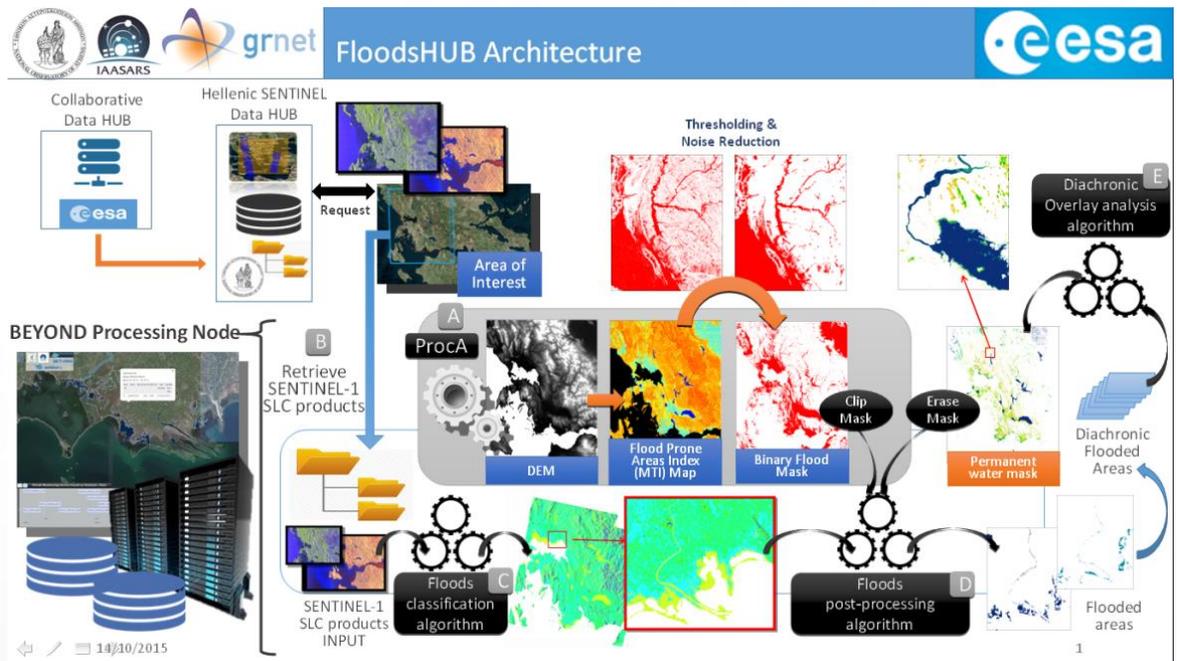


Key Dynamics: Water Persistence 01.08 to 04.08 – Vratsa, Bulgaria

FloodHub: Floods Monitoring Service

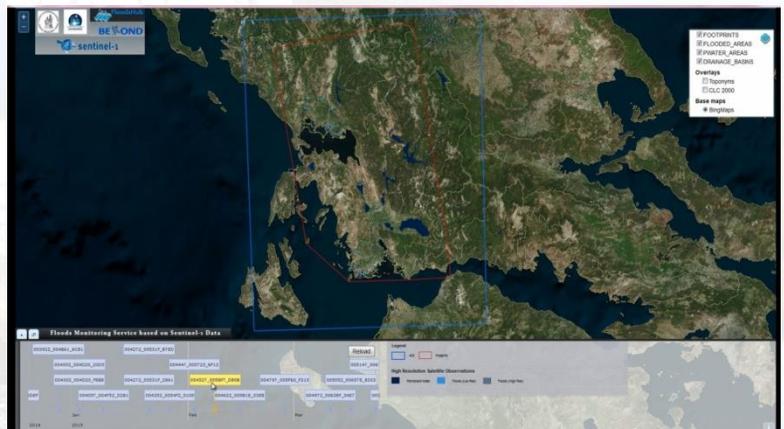
The FloodHUB is BEYOND's Floods Monitoring Service where all the flood events in selected river basins are monitored, and the flood mapping results are published on the online platform following the processing of Sentinel-1 images from the Hellenic National Sentinel Data Mirror Site (the first fully automated process).

The service provides floods mapping and floods extent measuring per flood event, as well as diachronic flood classification results. After the retrieval of Sentinel-1 products [B], the floods monitoring application also uses a number of other input data layers and applies the following processing modules: Binary Flood Mask extraction [A], Floods classification algorithm [C], Floods post-processing algorithm [D], Diachronic Overlay analysis algorithm [E].



The first pilot study, which is Arachthos & Acheloos river basins in west Greece, where the Public Power Corporation S.A. Hellas is operating major hydroelectric plants.

The processing and analysis for the first hydrological year with available Sentinel-1 images (2014-2015) is completed; and the second hydrological year (2015-2016) is now being processed.



Read more: <http://beyond-eocenter.eu/index.php/floods/floodhub>

BEYOND at the 10th GEO European Projects Workshop



BEYOND Project participated the 10th GEO European Projects Workshop 2016, which took place in Berlin from 31st May to 2nd June 2016.

A general overview of the project presented at the session entitled "Mitigating the effects Natural Hazards and strengthening Disaster Resilience" on Wednesday, 1st June 2016, 9:00-9:15. An abstract of this session can be found [here](#).

Read more on: <http://beyond-eocenter.eu/index.php/ann-blog/216-10th-gepw>



BEYOND Final Workshop



The BEYOND project for establishing a Centre of Excellence for Earth Observation based monitoring of Natural Disasters in south-eastern Europe (<http://beyond-eocenter.eu/>) has reached its end. A final workshop of the project took place on May 17th 2016, at Electra Palace, Athens.

The workshop referred to the project's achievements concerning the DRR services delivered in BEYOND, in support to EMS Copernicus, GEO, GEOSS, and UN-SPIDER. It provided concrete examples of recognized societal benefit applications and services, relating to risk modeling and disaster information products delivery, in a broad spectrum of natural and human induced disasters, namely the meteorological hazards (fires, floods, heatwaves), the geo-hazards (volcanoes, landslides, and earthquakes) and the atmospheric pollution and air quality hazards (smoke and toxic gasses dispersion). The workshop participants informed on the deployed space based and in-situ monitoring infrastructures to support the environmental observation, emergency response, and disaster risk reduction procedures. Finally, the future of the activities in the meta-BEYOND time as secured through the relevant on-going projects were presented. The workshop also offered the opportunity to the representatives of the key End Users, who are receiving the BEYOND services, to present their opinion and provide their views for further developments in the meta-BEYOND period.

IAASARS of NOA is Greece RSO in the UN-Spider Network



UNITED NATIONS
Office for Outer Space Affairs

UN-SPIDER

For more information visit:

<http://beyond-eocenter.eu/index.php/ann-blog/218-iaasars-rso>

The Institute for Astronomy, Astrophysics, Space Applications and Remote Sensing (IAASARS), one of the three institutes of the National Observatory of Athens (NOA), recently signed an agreement with the United Nations Office for Outer Space Affairs to become a Regional Support Office of the UN-SPIDER Programme. IAASARS conducts basic and applied research in a number of topics in astrophysics, from distant galaxies to the solar neighborhood, as well as ground based and space-borne remote sensing, earth observation and signal processing. The Institute is also committed to outreach and science dissemination for the general public and operates a very popular visitor center in Penteli.

Recently, the Institute established the Centre of Excellence for Earth Observation based monitoring of Natural Disasters (BEYOND), which situates IAASARS/NOA as a dynamic actor for regional and potentially European hazard management. Through this Centre of Excellence, IAASARS aims to enhance its capacities, drawing new creative perspectives in EO-based disaster management, rendering IAASARS/NOA into the leading south-eastern Europe/Balkan research centre of excellence, and allowing sustainable collaborative schemes to be formed.

The focus of the Centre of Excellence on the topic of natural disasters is the cornerstone of the recently signed agreement to establish IAASARS as a Regional Support Office for the UN-SPIDER programme.

ATLAS 8 octacopter VTOL and eBee UAVs delivered to NOA



ALTUS LSA successfully delivered the ATLAS 8 octacopter VTOL UAV and completed operator training for National Observatory Of Athens (N.O.A.). VTOL UAV was realized through KRIPIS – PROTEAS program and BEYOND Program is benefited by its operational activity. ATLAS 8 mini VTOL UAV is a compact UAS solution of high performance and quality.

The octacopter system is based on a user friendly approach and through the Autopilot System and the UAS navigation software, the platform can be completely autonomous while on air, following the pre-determined flight plan set by the operator prior to the flight.

The specific version of the UAV was especially configured to meet the N.O.A. operational and technical requirements, as a tailored turnkey solution. Four members of N.O.A. have been certified as ATLAS UAV operators after successfully completing the one-week theoretical and practical (hands-on) training program.

Moreover, SenseFLY successfully delivered the eBee Ready To fly kit with Pix4D mapper Pro software to NOA.

The eBee can cover up to 12 km² in a single automated flight, while flights over smaller areas, flown at lower altitudes, can acquire images with a ground sampling distance (GSD) of down to 1.5 cm per pixel. It also features a safety-conscious rear-facing propeller and senseFLY's cutting-edge autopilot, which manages a wide range of intelligent failsafe behaviours.



BEYOND Collaborative Ground Segment (GS) – Polar Satellite Missions – Satellite data sharing system

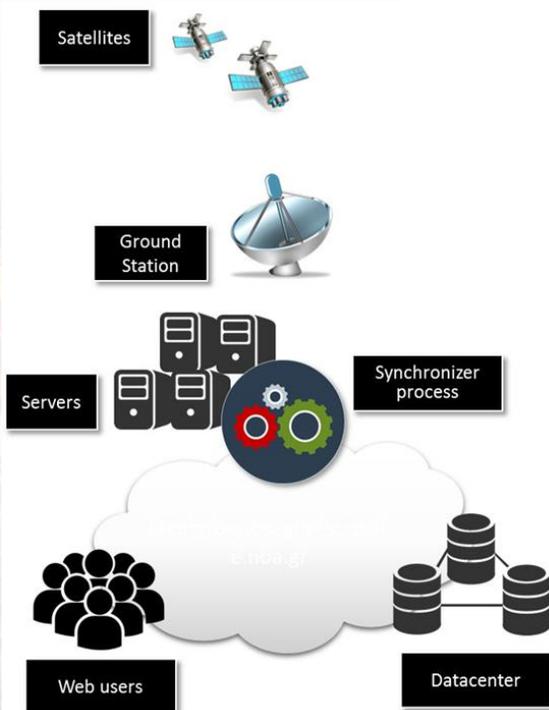


Within the BEYOND project, a first version of BEYOND Collaborative Ground Segment Data Site was released on January 2016 under the auspices of NOAA-IAASARS. It is available to public from the following URL: <http://groundsegment.space.noa.gr/>

Since April 2014, BEYOND has secured real time access to Sentinel-1, S-2, and future S-3, and S-5p data through the Collaborative Ground Segment hosted by NOAA. Moreover, BEYOND has gained real time access to EOS (Aqua&Terra), NPP, JPSS, NOAA, MetOP, and FY, through the deployment of a X-/ L-band antenna, allowing real time reception, processing and archiving of data over the Southeastern Europe and Balkan countries.

The BEYOND Collaborative Ground Segment Data Site is a web based system designed to provide EO data to users with Cataloguing, Searching, Viewing and Downloading capabilities from contemporary satellites. Its strengths are: (i) user friendly web-enabled graphical user interface (GUI) and (ii) clean separation with backend functionalities.

Searching procedure involves: (i) the selection of a satellite, (ii) the selection of an instrument, (iii) the selection of a product, and (iv) the selection of a date range to search for products that became available (i.e. ingested) during that range. The search function returns a list of the available products, alongside with useful info (metadata). It offers a Straight-forward download of the product. Some other features that will be available in the future are: (i) more filter options, (ii) customized sorting, and (iii) on the fly compress/download of multiple products.



The ground segment architecture is based on the N-tier paradigm.

- The 1st tier is comprised of the ground station and the servers used for acquisition and processing.
- The 2nd tier is comprised of the datacenter and the backend processes used to extract and store metadata in the catalogues (e.g. Synchronizer process).
- The 3rd tier constitutes the frontend that is used to allow the users to search, view and download products. Ground Segment on the cloud!

BEYOND Collaborative Ground Segment Data Site Architecture

Twinnings

1. Dr. Foteini Vervelidou (GFZ Potsdam) | Potsdam to Athens, 29/3 - 2/4/2016

Four day visit of Dr. Foteini Vervelidou (Earth's magnetic field section of GFZ Potsdam) at IAASARS/NOA including the following activities: Collaboration with the team of the Hellenic GeoMagnetic Array (ENIGMA) concerning the infrastructure of the Dionysos magnetic station; Collaboration with G. Balasis and N. Melis in the framework of the World Digital Magnetic Anomaly Map; Collaboration with G. Balasis and C. Papadimitriou concerning Earth's magnetic field modeling; Collaboration with O. Sykioti concerning the geological interpretation of magnetic field maps of Earth and Mars; Presentation about "Modelling the magnetic thickness and magnetization of Earth and Mars" at IAASARS/NOA seminars.

2. Alexia Tsouni | CIMA | Athens to Savona | 2nd Visit | 11-15/4/2016

Alexia Tsouni visited CIMA during the period 11-15/4/2016, where she worked with Dr. Simone Gabellani to set up the Continuum hydrological model for the first case study in Greece. The river basin of Arachthos was chosen (2.209 km²), a river with several flood events, just upstream of the city of Arta in west Greece, where the Public Power Corporation S.A. Hellas is operating two hydroelectric plants. This included: Preparation of the input static data; Adaptation of scripts and generation of the static data for the model; Preparation of a sample of meteorological timeseries for the model; Interpolation of the meteorological variables; Preparation of the configuration file and Calibration of the model.

3. Benjamin Bechtel (University of Hamburg) | Hamburg to Athens, 7-10/5/2016

Dr. Bechtel from the Center for Earth System Research and Sustainability of the University of Hamburg visited IAASARS/NOA on 7-10 May 2016. Dr. Keramitsoglou and Mr. Sismanidis presented to Dr. Bechtel their progress regarding the study of the urban thermal environment and heat waves and discussed how they utilized the technics developed by UHH for their work. Dr. Bechtel gave also a seminar in IAASARS/NOA (see photo).



4. Nikos Svigkas | INGV | Athens to Rome, 14-25/2/2016

The aims of the twinning between National Observatory of Athens (NOA) and Istituto Nazionale di Geofisica e Vulcanologia (INGV) in the framework of the BEYOND project were accomplished. In close collaboration with S. Atzori, N. Svigkas gained knowledge related with the modelling of the SAR results. Moreover fruitful discussions and interaction between the BEYOND team with the staff of the INGV lead to a better understanding of the seismotectonics of the Ionian sea. S. Atzori and N. Svigkas worked on two case studies: the 2015 Lefkada earthquake and the postseismic analysis of the Cephalonia earthquake were addressed. Further collaboration of the two institutes is a common will and in the upcoming plans in the short term is the publication of two scientific papers in peer-reviewed journals presenting the results of the two case studies addressed during this successful twinning.

5. Vassilis Amiridis | INOE | Athens to Bucharest, 8/11/2016

Dr. Amiridis presented the new lidar system of BEYOND to INOE. INOE hosts the lidar calibration center of the EARLINET network. All hardware issues related to the lidar operations are tested and resolved at INOE. Moreover, INOE organizes frequent seminars on lidar operation and data processing. New calibration methods are introduced and presented. Dr. Amiridis followed presentations related to lidar calibration issues.

New H2020 Projects



Reinforcing CAP

BEYOND-NOA participates in the kick-off meeting of a new H2020 project

PeRsonalised public sERVICES in support of the implementation of the CAP

Thessaloniki, May 2016. A consortium of 12 partners in six European countries has launched a project to develop a cloud-based Software as a Service (SaaS) platform for improving the efficiency and transparency of the compliance with the Common Agricultural Policy (CAP) monitoring procedure. The RECAP project is supported by the EU programme on “ICT- enabled open government” until October 2018.

Sustainable agriculture preserves habitats and natural resources and mitigates climate change. The EU policy tool for integrating environmental requirements into the CAP is the Cross Compliance Scheme. EU farmers shall respect cross-compliance rules, legislative standards and obligations, in order to receive payments, but more importantly cross-compliance enhances awareness among them and helps European farming to be more compatible with the expectations of society. Farmers’ non-compliance with standards may lead to reduction or, even, cancelation of their agricultural support and rural development payments.

However, the implementation of the cross-compliance consists of many burdens, either related to the public authorities, or to the farmers. On the one hand, the public administrative costs are extremely high due to the need of in-field visits. On the other hand, farmers face several difficulties in familiarizing with the applicable regulations and also dealing with the high administrative costs of the proper implementation of the cross-compliance.

The RECAP project aims to develop an improved remote monitoring of CAP obligations and to supplement the in-field inspections procedures eliminating several of the forementioned burdens. Furthermore, RECAP will offer farmers a tool supporting them to comply with regulations imposed by the CAP, providing personalised information for simplifying the interpretation of complex regulations, and early alerts on potential non-conformities. RECAP will allow agricultural consultants to access data available in the platform, subject to security and privacy policies, and to develop their own services within the platform using design tools, libraries and communication with the database under an open approach. The overall objective is to develop and pilot test a platform for the delivery of public services that will enable the improved implementation of the CAP, targeting public Paying Agencies, agricultural consultants and farmers.

RECAP will be a cloud-based Software as a Service (SaaS) platform which will:

- collect information from open satellite data,
- collect information through farmers’ mobile devices,
- collect information from commercial channels of satellite data providers.

The project consortium consists of Draxis Environmental S.A., Instituto Navarro de Tecnologias e Infraestructuras Agroalimentarias SA, Payment and Control Agency for Guidance and Guarantee Community Aid, National Paying Agency, Viesoji Istaiga Lietuvos Zemes Ukio Konsultavimo Tarnyba, Strutt & Parker LLP, Inosens Doo Novi Sad, University of Reading, National Observatory of Athens, Iniciativas Innovadoras Sal, ETAM S.A. and CREVIS SPRL.

New H2020 Projects



Marine-EO

Bridging Innovative Downstream Earth Observation and Copernicus enabled Services for Integrated maritime environment, surveillance and security

Marine – EO is a Pre-Commercial Procurement (PCP) action in the topic EO-2-2016 of the H2020-EO-2016 call with a duration of 45 months.

MARINE-EO teams up a group of 5 maritime authorities (the buyers' group) and a group of 4 prestigious scientific and technical organizations with significant experience in EO and maritime matters (the technical advisors) from Greece, Spain, Portugal and Norway to achieve the following objectives:

- Develop, test and validate two set of demand-driven EO-based services which cover Marine Monitoring and Security Copernicus thematic areas, adopted on open standards, bringing incremental or radical innovations in the field of maritime awareness and leveraging on the existing Copernicus Services and other products from the Copernicus portfolio;
- Propose a set of “support” / “envelop” services which will better integrate the above mentioned EO and Copernicus-enabled services to the operational logic and code of conduct. Such services shall also bring “closer” the demand side (Public Authorities - PAs) with the EO data providers (Copernicus - contributing missions) and EO data experts and analysts (Service providers/ industry and SMEs) creating a dynamic environment for a single digital market to grow;
- Strengthen transnational collaboration in maritime awareness sector by facilitating knowledge transfer and optimization of resources for the public authorities which, participate in the buyers group. PCP is a powerful tool to tackle these three points under one single joint initiative, and this is why MARINE-EO is in an excellent position to reinforce future capabilities.

NextGEOSS project is supported by the EU programme on “Next Generation GEOSS for Business & Innovation” from January 2017 until June 2020.

The NextGEOSS project proposes to develop a centralised hub for Earth Observation data, where the users can connect to access data and deploy EO-based applications. The concept revolves around providing the data and resources to the users communities, together with Cloud resources, seamlessly connected to provide an integrated ecosystem for supporting applications. A central component of NextGEOSS is the strong emphasis put on engaging the communities of providers and users, and bridging the space in between.

The Project has three General Objectives:

- Deliver the next generation data hub and Earth Observation exploitation for innovation and business;
- Engage communities, promoting innovative GEOSS powered applications from Europe;
- Advocate GEOSS as a sustainable European approach for Earth Observation data distribution and exploitation.

The NextGEOSS consortium is composed of 27 institutions in total, including leading European companies and institutions, active in many GEO-related activities and many other European, ESA and international projects. The consortium covers 13 European countries: Belgium, Czech Republic, France, Germany, Greece, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Switzerland and the United Kingdom. The Project Coordinator is DEIMOS Engenharia S.A.

NOA as the leader of Task 3.1 Sentinel Collaborative Ground Segment, will contribute to the access to the Sentinel Collaborative Ground Segment (implemented by DLR and NOA) opening the door to Sentinel-1, Sentinel-2 and Sentinel-3 data as well as for the future atmospheric and climate missions Sentinel-4/-5/-5p. As the leader of T6.6 Disaster Risk Reduction NOA will suggest a Multi-hazard Enhanced Risk Assessment Pilot based on the statistical analysis of long time series of data accessible through the NextGEOSS Data Hub. NOA will also contribute to the Engagement with Data Providers and GEO Flagships, Initiatives & Community Activities.

BEYOND Public Outreach



Journals

- Keramitsoglou, I.; Kiranoudis, C.; Sismanidis, P.; Zakšek, K., An Online System for Nowcasting Satellite Derived Temperatures for Urban Areas. *Remote Sens.* 2016, 8 (4), 306.
- Baars, H., Kanitz, T., Engelmann, R., Althausen, D., Heese, B., Komppula, M., Preißler, J., Tesche, M., Ansmann, A., Wandinger, U., Lim, J.-H., Ahn, J. Y., Stachlewska, I. S., Amiridis, V., Marinou, E., Seifert, P., Hofer, J., Skupin, A., Schneider, F., Bohlmann, S., Foth, A., Bley, S., Pfüller, A., Giannakaki, E., Lihavainen, H., Viisanen, Y., Hooda, R. K., Pereira, S. N., Bortoli, D., Wagner, F., Mattis, I., Janicka, L., Markowicz, K. M., Achtert, P., Artaxo, P., Pauliquevis, T., Souza, R. A. F., Sharma, V. P., van Zyl, P. G., Beukes, J. P., Sun, J., Rohwer, E. G., Deng, R., Mamouri, R.-E., and Zamorano, F., An overview of the first decade of PollyNET: an emerging network of automated Raman-polarization lidars for continuous aerosol profiling, *Atmos. Chem. Phys.*, 16, 5111-5137, doi:10.5194/acp-16-5111-2016, 2016.
- Sismanidis, P.; Keramitsoglou, I.; Kiranoudis, C. T.; Bechtel, B., Assessing the Capability of a Downscaled Urban Land Surface Temperature Time Series to Reproduce the Spatiotemporal Features of the Original Data. *Remote Sens.* 2016, 8 (4), 274.
- Engelmann, R., Kanitz, T., Baars, H., Heese, B., Althausen, D., Skupin, A., Wandinger, U., Komppula, M., Stachlewska, I. S., Amiridis, V., Marinou, E., Mattis, I., Linné, H., and Ansmann, A., The automated multiwavelength Raman polarization and water-vapor lidar PollyXT: the next generation, *Atmos. Meas. Tech.*, 9, 1767-1784, doi:10.5194/amt-9-1767-2016, 2016.
- Mamouri, R.-E., Nisantzi, A., Ansmann, A., and Hadjimitsis, D. G.: Extreme dust storm over the eastern Mediterranean in September 2015: Lidar vertical profiling of desert dust at Limassol, Cyprus, *Atmos. Chem. Phys. Discuss.*, doi:10.5194/acp-2016-354, in review, 2016., [Link](#)
- Mamouri, R.-E. and Ansmann, A.: Potential of polarization lidar to provide profiles of CCN- and INP-relevant aerosol parameters. *Atmos. Chem. Phys.*, 16, 5905-5931, doi:10.5194/acp-16-5905-2016, 2016., [Paper](#), [Link](#)
- Balasis, G., Potirakis, S. M., and Manda, M., Investigating dynamical complexity of geomagnetic jerks using various entropy measures, under review, *Frontiers in Earth Science*.
- Banks, R., Jordi Tiana-Alsina, José María Baldasano, c, Francesc Rocadenbosch, Alexandros Papayannis, Stavros Solomos, Chris G. Tzanis, Sensitivity of boundary-layer variables to PBL schemes in the WRF model based on surface meteorological observations, lidar, and radiosondes during the HygrA-CD campaign, *Atmospheric Research*, Volumes 176–177, Pages 185–201, doi:10.1016/j.atmosres.2016.02.024, 2016.

BEYOND Public Outreach



Conference Proceedings - Posters - Oral Presentations - Workshops:

- Haris Kontoes, **The Centre of Excellence for EO-based monitoring of Natural Disasters: "BEYOND"**, Conference entitled "Space 2016 - Challenges and Perspectives", Athens, **27th January 2016**, Armed Forces Communications and Electronic Association (AFCEA), LAED, [[Space 2016 - Challenges and Perspectives Agenda](#)]
- **International Conference on Remote Sensing and Geoinformation of Environment, Pafos, Cyprus, April, 2016:**
 - Keramitsoglou I., Kiranoudis C.T, Sismanidis P. 2016., **Real-time Appraisal of the Spatially Distributed Heat Related Health Risk and Energy Demand of Cities**. In the proceedings of the Fourth International Conference on Remote Sensing and Geoinformation of Environment (RSCy2016), Pafos, Cyprus, **April 4-8, 2016**
 - Rodanthi-Elisavet Mamouri, Argyro Nisantzi, Albert Ansmann, Stavros Solomos, George Kallos Vassilis Amiridis and Diofantos Gl. Hadjimitsis, 2016 **"Record dust outbreak towards Cyprus in September 2015: Lidar vertical profiling of dust mass concentration at Limassol"**, Forth International Conference on Remote Sensing and Geoinformation of Environment' , (RSCy2016), **4-8 April, 2016**, Pafos, Cyprus., [[Paper](#)], [[Presentation](#)]
- **European Geosciences Union General Assembly, Vienna, Austria, April 2016:**
 - Mamouri R-E., Ansmann A., Bühl J., Engelmann R., Baars H, Nisantzi A., Hadjimitsis D., Atkinson J., Kanji Z., Vrekoussis M., Sciare J., Mihapouloulos N., 2016, **"Closure between ice-nucleating particle and ice crystal number concentration in ice clouds embedded in Saharan dust: Lidar observation during the BACCHUS Cyprus 2015 campaign"**, EGU 2016, **17-22 April 2016**, Vienna, Austria., [[Abstract](#)], [[Poster](#)]
 - Vassilis Tsironis, **DisasterHub: A mobile application for enabling crowd generated data fusion in Earth Observation disaster management**, European Geosciences Union General Assembly, Vienna, Austria, **22 April 2016**, [[DisasterHub Presentation](#)]
 - Balasis, G., I. A. Daglis, C. Papadimitriou, N. Melis, O. Giannakis, and C. Kontoes, **The upgraded ENIGMA magnetometer array**, European Geosciences Union General Assembly 2016, Vienna, Austria, 17-22 April 2016.
- **BEYOND Final Workshop, Athens, Greece, May 2016:**
 - Dr. Haris Kontoes, The European Centre of Excellence BEYOND for Earth Observation based monitoring of Natural Disasters in South-Eastern Europe, [[Presentation](#)]
 - Dr. Haris Kontoes, BEYOND Products and Services. The awarded FIREHUB Service, [[Presentation](#)], [[The FIREHUB Service - Video Presentation](#)], [[Fire Smoke Dispersion Service - Video Presentation](#)]
 - Zisoula Ntasiou, Fire Service Headquarters, UCOC/HFC, Fire Monitoring Service based on MSG SEVIRI in U.C.O.C. of H.F.C., [[Presentation](#)]
 - Mr. Vassilis Tsironis, DisasterHUB - Natural disasters monitoring through mobile devices, [[Presentation](#)]
 - Vassilis Amiridis, BEYOND Atmospheric Services, [[Presentation](#)]
 - Evangelos Gerasopoulos, Assessing air pollution caused by fire at the recycling plant facilities in Aspropyrgos, [[Presentation](#)]
 - Ms. Argyro Paraskeuopoulou, Attica Prefecture: Assessing air pollution caused by fire at the recycling plant facilities in Aspropyrgos, [[Presentation](#)]
 - Ioannis Papoutsis, Spaceborne and airborne geohazard monitoring - BEYOND GeoHUB, [[Presentation](#)]
 - Ms. Eleftheria Poyiadji, Memorandum between NOA BEYOND and IGME, Landslides monitoring at national scale, [[Presentation](#)]
 - Iphigenia Keramitsoglou, Monitoring the urban thermal environment, [[Presentation](#)]
 - Ms. Eleni Myrivili, Reduction of temperatures in the region of Athens, [[Presentation](#)]
 - Alexia Tsouni, Floods monitoring at national scale - FloodHUB service, [[Presentation](#)], [[The FloodsHub Service - Video Presentation](#)]
 - Athanasia Pardali, Space applications in the service of compliance with the European Floods Directive, [[Presentation](#)]

BEYOND Public Outreach



Conference Proceedings - Posters - Oral Presentations - Workshops:

- Georgios Balasis, Monitoring electromagnetic signals related to earthquakes with satellites and ground-based magnetometer arrays, [[Presentation](#)]
- Dr. Harris Kontoes, ESA Mirror Site of Collaborative Ground Segment at NOA, [[Presentation](#)]
- Ioannis Papoutsis, Copernicus EMS - Multihazard Risk & Recovery, [[Presentation](#)]
- Evangelos Gerasopoulos, GEO-CRADLE - Integrating North African, Middle East and Balkan Earth Observation capacities in GEOSS, [[Presentation](#)]
- **Living Planet Symposium, Prague, Czech Republic, May 2016:**
 - Vassilis Tsironis, **DisasterHub: A mobile app enabling crowd generated data fusion in Earth Observation disaster management**, Living Planet Symposium 2016, Congress Centre, Prague, Czech Republic, **9-13 May 2016**, [[DisasterHub Presentation](#)]
 - Kaskara, Maria; Atzori, Simone; Papoutsis, Ioannis; Kontoes, Charalampos; Salvi, Stefano; Ganas, Athanassios, **Geodetic analysis and modeling of the Santorini volcano, Greece, for the period 2012-2015**, Living Planet Symposium 2016, Congress Centre, Prague, Czech Republic, **9-13 May 2016**, [[Presentation](#)], [[Paper](#)]
- **GEO European Projects Workshop, Berlin, Germany, June 2016:**
 - Vassilis Tsironis, **DisasterHub: A mobile app Enabling crowd-generated data fusion in Earth Observation disaster management**, 10th GEO European Projects Workshop, **1 June 2016**, Ministry of Transport and Digital Infrastructure of Germany (BMVI), Berlin, [[DisasterHub Presentation](#)]
 - Dr. Haris Kontoes, **The European Centre of Excellence BEYOND for Earth Observation based monitoring of Natural Disasters in South-Eastern Europe**, 10th GEO European Projects Workshop, Session: Mitigating the effects Natural Hazards and strengthening Disaster Resilience, **1 June 2016**, Ministry of Transport and Digital Infrastructure of Germany (BMVI), Berlin, [[Session Programme](#)]
- **International Conference on Meteorology, Climatology and Atmospheric Physics, Thessaloniki, Greece, September 2016 (TO BE PRESENTED):**
 - Tsekeri A., Amiridis V., Lopatin A., Marinou E., Pikridas M., Sciare J., Gerasopoulos E., Liakakou E., Baars H., Kottas M., Kokkalis P., Raptis I.P., Solomos S., Biniotoglou I., Mihalopoulos N., Engelmann R., Wandinger U., Ansmann A., Dubovik O. and Nenes A.: **Aerosol vertical profiling utilizing the synergy of lidar, sunphotometry and in-situ measurements in the framework of the ACTRIS-2 campaign in Athens**, COMECAP 2016.
 - Solomos S., Nickovic S., Amiridis V., Pejanovic G., Pradhan Y., Marengo F., Petkovic S., Marinou E., Cvetkovic B., Kontoes C.: **Development of a dust assimilation system for NMM-DREAM model based on MSG-SEVIRI satellite observations**, COMECAP 2016.
 - Papayannis A., Argyrouli A., Bougiatioti A., Nenes A., Vande Hey J., M. Komppula, Kokkalis P., *S. Solomos*, R. Banks, L. Labzovskii, I. Kalogiros, E. Giannakaki: **From hygroscopic aerosols to cloud droplets: the Hygra-CD Campaign in the Athens basin – An overview**. COMECAP 2016.
 - Kontoes C., Solomos S., Amiridis V., Herekakis T.: **Synergistic satellite & modeling methods for the description of biomass smoke dispersion over complex terrain. The FireHub platform**. COMECAP 2016.



Press - Interviews - Other:

- **The Final BEYOND Workshop**, Press Release, The BEYOND Center of Excellence as a national infrastructure for the management of natural disasters using satellite remote sensing, May 2016, [[Press Release GR](#)]



National Observatory of Athens



Institute for Astronomy, Astrophysics,
Space Applications & Remote Sensing



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BEYOND

Building a Centre of Excellence
for EO-based monitoring of Natural Disasters

Newsletter

BE OND e-Newsletter

BEYOND aims to maintain and expand the existing state-of-the-art interdisciplinary research potential, by Building a Centre of Excellence for Earth Observation based monitoring of Natural Disasters in south-eastern Europe, with a prospect to increase its access range to the wider Mediterranean region through the integrated cooperation with twinning organizations .



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ACTIVITY: 4.1

Unlocking and developing the research potential of research entities established in the EU's Convergence regions and Outermost regions.

CALL IDENTIFIER:

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