



# Newsletter V.2

## May 2014

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### Editorial by the Project Coordinator **Dr Haris KONTOES**, Remote Sensing PhD, Research Director of NOA

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#### What is BEYOND?

Established in the framework of the FP7-REGPOT-2012-2013-1 Coordination and Support Actions - Theme Area "4.1 Unlocking and developing the research potential of research entities established in the EU's Convergence regions and Outermost regions", the **BEYOND** project (EC GA No 316210) aims at maintaining and expanding 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.

BEYOND foresees to increase its access range to the wider Mediterranean region through the integrated cooperation with twinning organizations in Europe and USA. **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, and will last for the next three years. The approved EC budget contribution for BEYOND is 2.305.650 Euros.

#### BEYOND Center aspires to:

- Incorporate multidisciplinary excellence from diverse sciences, such as Remote Sensing, Meteorology, Atmospheric Physics, Hazard Modelling, Geology, Geophysics, Seismology, Volcanology, and Hydrology.
- Exchange know-how with more than 20 International Organisations (e.g. GEO, EC DGs, UNISDR), Universities in Europe and USA, and cooperate with Space Agencies such as ESA, NASA, and DLR.
- Set up innovative integrated observational solutions of the Earth, allowing a multitude of monitoring networks (space borne and in-situ), owned by NOA and the collaborative Institutions and Space Agencies, to operate in a complementary, unified and coordinated manner.
- Transform the observations to added value products ready for down-streaming to specific societal needs for disaster management.
- Deliver online observations and higher level products to the stakeholders, scientists and institutional users.

#### BEYOND Research Portfolio:

The BEYOND Center research/product portfolio covers a broad spectrum of natural disaster phenomena such as earthquakes, volcanoes, extreme weather events, floods, fires, fire smoke and toxic gasses dispersion, emission concentrations, dust storms, air quality aspects and their impacts to human health.



# BEYOND

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



## Post-Earthquake Damage Assessment Campaign UAV-based



The Greek island of Kefalonia was hit by two strong earthquakes in a week, the first on 26/01 and the second on 03/02. Roads, homes and shops were damaged in quake with preliminary magnitude between 5.7 and 6.1.

BEYOND researchers deployed UAVs at areas around Lixouri. The goal was to assess the Modified Mercalli Intensity Scale of the earthquake based on the damages. Via simple photo-interpretation on the ortho-image a point GIS was built that captured damages on ground level, roof-tops and walls. The intensity of the earthquake is correlated to the density of points captured.

[Read More](#)

## BEYOND secures real time access to Sentinel-1a, and EOS, NPP, JPSS, NOAA, Met Op, FY data

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 NOA. 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.

## Space Agencies grant BEYOND access to diverse SAR data to monitor geophysical activity

Following the submission of a series of proposals, BEYOND has gained access to SAR data with different spectral, spatial and temporal resolutions. Specifically, the German Aerospace Agency (DLR) granted NOA access to TerraSAR-X SAR data, the Italian Space Agency (ASI) will provide COSMO-SkyMed data and the Canadian Space Agency (CSA) offers Radarsat-2 imagery.

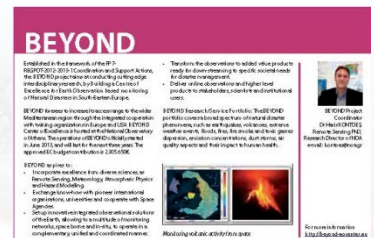
## BEYOND Participated in EGU 2014



BEYOND participated in the [EGU General Assembly 2014](#) with an oral presentation entitled: **The BEYOND center of excellence for the effective exploitation of satellite time series towards natural disasters monitoring and assessment.**

## BEYOND in Parliament Magazine

BEYOND was featured at the Parliament Magazine (issue 381) on 16 December 2013 which was dedicated to the Greek Presidency. [Link](#)



## Incorporation of BEYOND activities in the GEO workplan/Disaster Task

The priority as stated in the GEO Workplan is «To make information related to environmental risk and vulnerability easily accessible to a wide range of decision-makers through a virtual platform. The platform is built upon the South African Atlas (based on a spatial database system and a repository of global-change related information), the Chinese disaster assessment system (based on Geographic Information Systems), and the European Centre of Excellence for Earth-observation based monitoring of natural disasters BEYOND (based on databases of observations and higher-level products)». [Read More](#)

## Urban Monitoring from Space Workshop (31 March-1 April 2014)

BEYOND successfully organized the “Global Urban Observation and Monitoring from Space” Workshop, a two-day workshop that took place in Athens, Greece, on 31st March and April 1st 2014. The purpose of this workshop was to bring together remote sensing scientists and to provide a multidisciplinary floor where synergies would be established through discussion and brainstorming.

All speakers were of international standing and addressed a range of issues concerning the urban environment from different points of view. [Workshop Agenda](#), [Highlights video](#)

Following the recent contribution of NOA to the activities of the GEO SB-04 Global Urban Observation and Information Task as well as the very successful organization of the "Global Urban Observation and Monitoring from Space" Workshop in Athens (31/3-1/4/2014), the role of Dr. Iphigenia Keramitsoglou has been upgraded to Task Leader. [Read More](#)



Group photo outside the historic Sina Building of the National Observatory of Athens in Thisseio and opposite the Acropolis

## Participation of BEYOND in the EU Presidency events



### Conference "Countdown to HORIZON 2020 Space Tour in Athens"

BEYOND participated the conference “[Countdown to HORIZON 2020 Space Tour in Athens](#)”. NOA’s presentation focused on BEYOND project and specifically on the project’s infrastructure that is currently being developed. Reference was made on support activities in the surveillance and monitoring of the environment and safety on South-eastern Europe.

The event took place at Divani Palace Acropolis Hotel, on 23 January 2014.

### Conference: Sentinels Serving Society and the Environment

BEYOND participated in the conference “[Sentinels Serving Society and the Environments](#)” which was held in EVGENIDIS Foundation, Athens on 12-13 May 2014. Dr. Haris Kontoes gave an oral presentation about the BEYOND project in the session “Support to public service and businesses”. In this conference NOA signed the Greek ESA Copernicus collaborative agreement.





## BEYOND participated in the GEO X Plenary

Dr. Haris Kontoes, the Project Coordinator, presented the BEYOND objectives in the Workshop on "[Disasters Risk Reduction and Earth observations: a GEO perspective](#)" at the GEO-X Plenary which was organised by the Secure World Foundation and the GEO Secretariat. The main objective of the Workshop was to bring together researchers and practitioners from Universities, UN Agencies, industry and the private sector working in all aspects of the use of Earth observation for Disaster Risk Reduction and Management (DRRM). This event was a venue for presenting recent advancements in the establishment of an operational GEOSS for the benefit of DRRM.

[Workshop Agenda and Related Presentations](#)

During the Side events short talks were given on the 14th, 15th and 16th January presented by several projects, organisations and Countries. They were organised in 11 short sessions, most of them thematically oriented, covering issues such as:

- Implementation of the GEOSS in the different SBAs through EU funded projects and other initiatives

- GEOSS and Copernicus
- Open Access to GEOSS Data and Information
- Big GEO Global Initiatives (Supersites, Global Land Cover, GMOS, etc.)
- Earth Observation Capacity Building in developing countries
- The role of citizens in the GEOSS and in monitoring the environment



Dr. Iphigenia Keramitsoglou, Work Package Leader of the BEYOND project participated the EC Side events and represented the Greek GEO Office and the BEYOND project. She gave an oral presentation at Session X and presented the role of the Greek Geo office and the role of the National Observatory of Athens in monitoring natural disasters. More information in the following link: [EU Speakers' Corner Talks](#).

[Read More](#)

## Haris Kontoes at the French Institute

Dr Haris Kontoes presented the Earth Observation capabilities for Forest Fires Monitoring, and the support of the Natural Disaster Response phase through BEYOND, to Fire Brigade, Civil Protection, and Ministries representatives, and the Public) on 31 March 2014 at the French Institute of Athens.

**ΓεωΣυναντήσεις**  
les Rencontres de la Terre  
Εξ αποστάσεως ανίχνευση ηφαιστειακών εκρήξεων και πυρκαγιών  
Détecter à distance les éruptions volcaniques et les incendies  
31.03.2014, 19:30  
Steve Tait, Observatoire National d'Athènes  
Haris Kontoes, Observatoire National d'Athènes



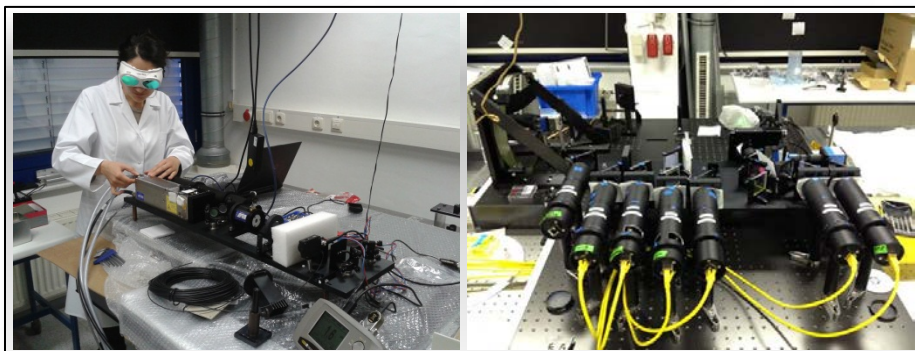
## Joint EARLINET GA / ACTRIS meeting in Limassol

Cyprus, 25-29 November 2013

Three BEYOND researchers (Vassilis Amiridis, Alexandra Tsekeri, Eleni Marinou) followed the EARLINET General Assembly and the FP7-ACTRIS workshop that was held in Limassol, Cyprus between 25 and 29 of November 2013. The researchers presented the BEYOND objectives and the related atmospheric activities within the project. Focus was given in **LIVAS** service that has been recently made public through the BEYOND website. [Read More](#)



## BEYOND Twining Activities



In the frame of BEYOND's twining activities, NOA's researcher Eleni Marinou is visiting TROPOS to collaborate on the development of an advanced ground-based lidar for aerosol remote sensing. The system is a state-of-the-art lidar system, the so-called PollyXT, employing 3 backscatter/2 Raman and 2 depolarization channels. The system will be installed in Crete and is envisaged to be integrated in the EARLINET European lidar network.

## Upcoming Events

### Participation of BEYOND in the EU Presidency: Future Participation

BEYOND will participate in the [8th GEO European Project Workshop](#), 12&13 June 2014, and the [SPACE & SECURITY CONFERENCE](#) at 19&20 June 2014. The Space and Security Conference is co-organised by the General Secretariat for Research and Technology, the National Observatory, the University of Athens, the Greek Ministry of Defence and the European Commission under the auspices of the Hellenic Presidency of the EU.

### 2nd South- Eastern Europe GEO Workshop, 2-3 October 2014, Athens

BEYOND has the honor to announce the organization of the second South- Eastern Europe GEO Workshop on "Integrating Earth Observation Data and Services for monitoring the Environment and protecting the citizens" focused on North Africa, Middle East and Balkan Regions.

The aims of the Symposium include the presentation of BEYOND as well as related GEO-GEOSS activities. Representatives from the North Africa, Middle East and Balkan Peninsula Countries will present the current status of Earth Observation-based services for natural disasters in their countries as well as the human potential, infrastructures and institutions capacities. A Round table Discussion will be held as to evaluate the needs, the gaps and the capabilities on Monitoring the Environment and Protecting the Citizens. This workshop is expected to enhance the collaboration among the SE European countries in Earth Observations and natural disasters and create a network of scientists.

The vision for this Workshop was born by the clear need for a regional centre for disaster monitoring using remote sensing means, which will be based on initiatives such as BEYOND, providing products and services mainly for south-eastern Europe, including the Balkan countries.

## NOA/BEYOND Cooperations



### NOA/BEYOND & Center for Security Studies Cooperation

NOA and the Center for Security Studies of Greece have signed a cooperation agreement in the context of BEYOND. Both sides agreed that there is an emerging need for integrating the technical expertise and relevant research advancements in the operational use of remote sensing services for the safety of the European citizens.



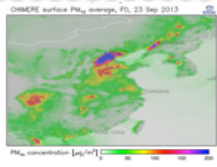
### NOA/BEYOND & Interbalkan Environment Center Cooperation



The cooperation agreement which has been signed between the **Interbalkan Environment Center** and the NOA/BEYOND Center of Excellence, aims to meet the requirements for dynamic observation of the environment through the complementary use of terrestrial and space based sensor networks, and also integrate these observations into simulation models for assessing the critical environmental parameters relating to land, atmosphere, and water resources at national and inter-Balkan level.

## MARCOPOLO - Monitoring and Assessment of Regional air quality in China using space Observations

IAASARS/NOA contributes to MarcoPolo with know-how gained, and infrastructures obtained, through the BEYOND, utilizing the Ground Segment for satellite data acquisition and the related expertise on active-remote sensing techniques from space and ground. [Read More](#)



## Services offered by the BEYOND Center Updated BEYOND site

NOA/BEYOND Site Administration is pleased to announce the release of our new website, designed with a fresh new look and user-friendly navigation, updated with the latest information about our R&D achievements and services. You can navigate through the Natural Disaster Services Menu, where all the latest applications are thematically categorized. Updates have also been made to Special Menus that provide Announcements, Videos, Meetings Material, and section for sharing data. Feel free to navigate through this latest release. Any comments or feedback would be appreciated.

Site Portal: <http://ocean.space.noa.gr/BEYONDsite/>, <http://beyond-eocenter.eu/>

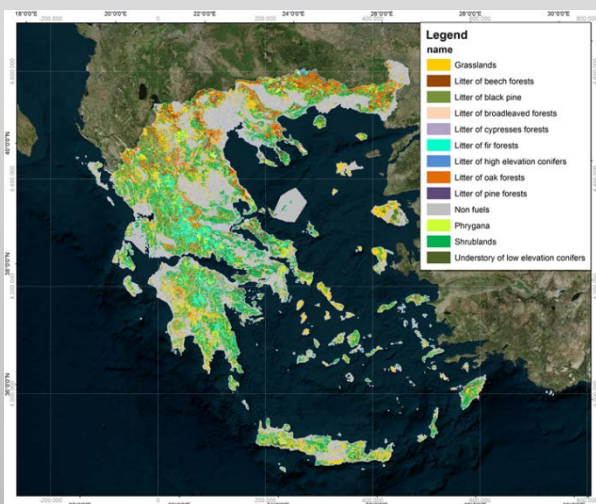


## Most Recent Cutting-Edge Services Offered by the BEYOND Center

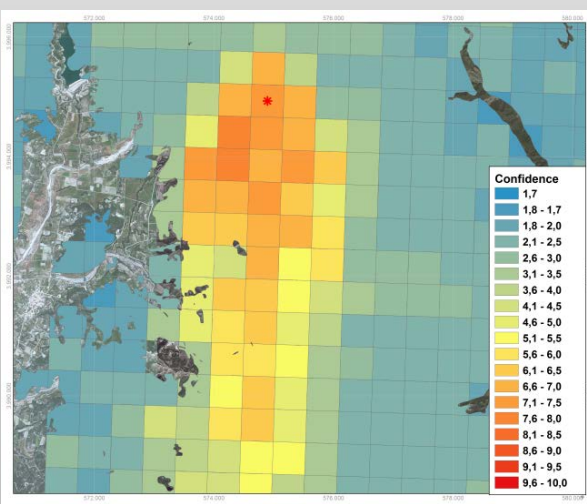
### Real-time Fire Monitoring Application – ([http://ocean.space.noa.gr/seviri/fend\\_new/index.php](http://ocean.space.noa.gr/seviri/fend_new/index.php))

Contact Persons: [Themistocles Herekakis therekak@noa.gr](mailto:therekak@noa.gr), [Haris Kontoes kontoes@noa.gr](mailto:kontoes@noa.gr)

Early this summer, 2 new services (Real-Time Fire Monitoring and Diachronic Burnt Scar Mapping), sponsored by the BEYOND Center of Excellence, will be delivered to the National Fire Brigades, Civil Protection, and the Directorate General for National Vegetation and Forest Protection of the Ministry of Environment. The Real-Time Fire Monitoring service has been developed with the most recent cutting-edge technology and delivers high quality products. It accounts for the wind direction, the ground morphology characteristics, the elevation zones, as well as the fuel characteristics of the affected areas, to downscale the initial observation of MSG SEVIRI sensor, from the 3.5km spatial resolution to 500 meter resolution. Eventually, the continuous monitoring returns enough evidence for a comprehensive observation, entailing to a successful confrontation of the fire-development. [Read More](#)



Fuel Type Map of Greece, 2013

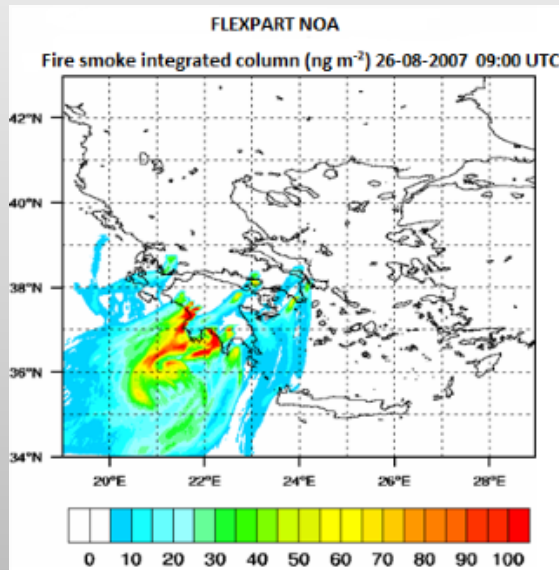
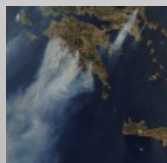


Fire Monitoring Service Perspective

### Fire Smoke Dispersion

Contact Persons: [Vassilis Amiridis - vamoir@noa.gr](mailto:vamoir@noa.gr), [Stavros Solomos - ssolomos@noa.gr](mailto:ssolomos@noa.gr)

An exceptional tool on forecasting fire smoke dispersion has been developed in the BEYOND Center is based on a synergistic remote sensing and modeling technique. Detailed ignition, duration and locations of the fire spots are obtained online from the Real-Time Fire Monitoring Service. This information is provided every five (5) minutes from the MSG SEVIRI instrument and is used as a triggering input to the smoke modeling application. Smoke dispersion is computed with the Lagrangian dispersion model FLEXPART driven by WRF-ARW meteorological output at a resolution of 4x4 km over Greece. [Read More](#)



## Updated EO Services available within the BEYOND Center

### O<sub>3</sub> & NO<sub>2</sub> Satellite Observations

Contact Person: [Stylios Kazadzis - kazadzis@noa.gr](mailto:kazadzis@noa.gr)

From now on, O<sub>3</sub> & NO<sub>2</sub> Satellite Observations services are now available through the BEYOND Center, and can be found under the menu "ATMOSPHERIC" of the BEYOND site. It provides a set of six daily updated and past satellite data figures of:

- (a) NO<sub>2</sub> total column and tropospheric vertical column time series provided by GOME2 satellite instrument for the cities of Athens and Thessaloniki, Greece, and (b) Total column ozone time series provided by the OMI satellite instrument also for the cities of Athens and Thessaloniki, Greece.

### UV effects on human health

Another useful service is the UV effects on human health. It is also available through the BEYOND Center, and is found under the menu "ATMOSPHERIC" of the BEYOND site. Based on the use of GOME-2 and OMI satellite observations, it provides figures that represent daily updates of the:

- Solar Ultraviolet Index (UVI) for local noon, over Athens and Thessaloniki.
- DNA damage dose induced by solar UV radiation (in W/m<sup>2</sup>), also over Athens and Thessaloniki, Greece.
- Vitamin D dose (VID) induced by solar UV irradiance for the cities of Athens and Thessaloniki, Greece.

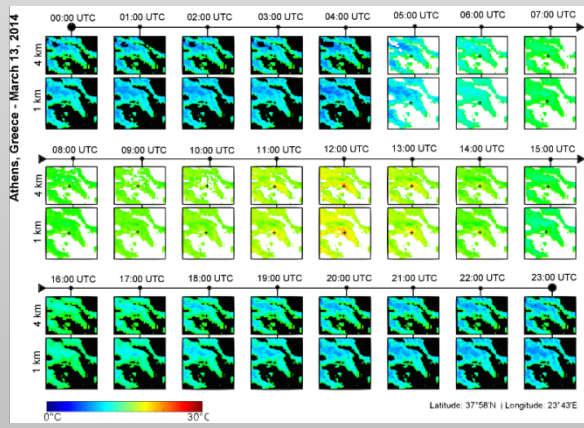
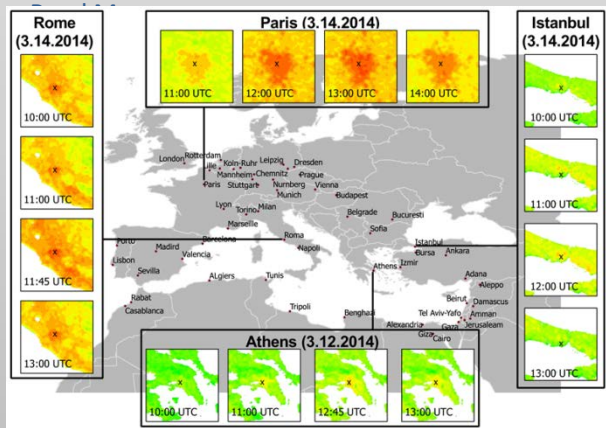
### Urban Thermal Environment

Contact Person: [Iphigenia Keramitsoglou - ik@noa.gr](mailto:ik@noa.gr)

In BEYOND, NOA is advancing its ground level and software infrastructures with the real time acquisition and high level post-processing of land surface temperature (LST) measurements to build and populate a relevant UHI patterns database that will improve the insight into possible trends and comparison between cities.

A system for real time and online monitoring of the thermal urban environment using geostationary satellite images is being developed at the IAASARS/NOA. This activity is developed towards attaining the objective to derive urban biophysical parameters for characterizing urban land surface-atmosphere.

Specifically, the system comprises of separate modules including satellite image acquisition from MSG-SEVIRI EUMETCast station, installed at and operated by IAASARS/NOA, cloud screening, derivation of LST from clear sky thermal infrared radiances, and downscaling of LST imagery down to 1 km spatial resolution using Support Vector Regression Machines and iterative gradient boosting.



Example of current and potential cities to be included in the system

Example of hourly Land Surface Temperature distribution in original (~4km) and enhanced (1km) spatial resolution. Image Aggregation of 13/03/2014



## Updated EO Services available within the BEYOND Center

Contact Persons: [Ioannis Papoutsis - ipapoutsis@noa.gr](mailto:ioannis.Papoutsis@noa.gr), [Haris Kontoes - kontoes@noa.gr](mailto:Haris.Kontoes@noa.gr)

### UAV based Rapid Assessment of Earthquake Damages at very large scale

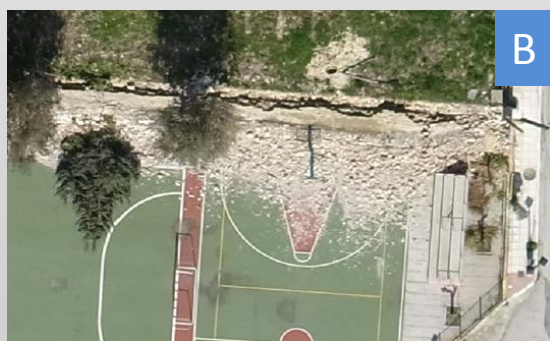
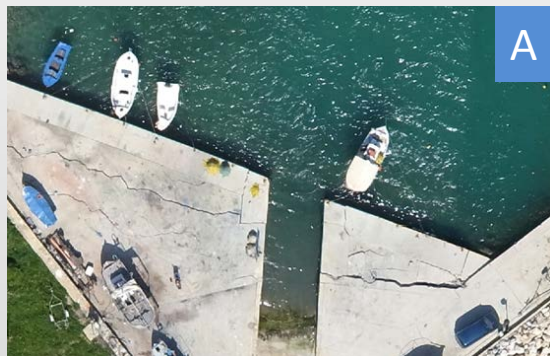
From the recent earthquakes on the Greek island of Kefalonia, it became apparent that UAV technology can assist in mapping damages following a catastrophic event and assessing the Mercalli Intensity of the earthquake.

BEYOND Center, in collaboration with Geotech LTD (dealer of the Gatewing UAV in Greece) flew a mission over the urban area of Lixouri, five semi-urban areas (Vouni, Mantzavinata, Soullari, Agios Dimitrios and Livadi) and two rural areas (close to the road connecting Lixouri and Argostoli). Geotech LTD provided orthorectified images for each region. BEYOND team imported the images to a GIS and a point database was built in an attempt to detect and classify earthquake related damages. Three types of damages were monitored: damages a) on ground level such as damages on roads, harbor infrastructure, cemeteries etc. and also landslides, b) on walls, and c) on roof-tops. This process was done via rapid photo-interpretation.

At a next level BEYOND team assesses the Intensity of the earthquake in the Mercalli scale, based on the density of the damages, thus making the final intensity value more robust.

The service is currently being enhanced by developing in-house software for automatically generating ortho-images from raw UAV images as to be able to quickly assess the location of damages of future earthquakes. Upon consolidation, this feature will be added to the services available by the BEYOND Center.

[Read More](#)



### Floods Observatory

Contact Persons: [Alexia Tsouni - alexiatsouni@noa.gr](mailto:Alexia.Tsouni@noa.gr), [Haris Kontoes - kontoes@noa.gr](mailto:Haris.Kontoes@noa.gr)

The ultimate goal of the Flood Hazard activities in BEYOND is to reduce and manage the risks that floods pose to human health, the environment, cultural heritage and economic activity. In this direction, we select river basins at high risk of flooding, we study the hydraulic behaviour of the river, and proceed to the flood modelling validation and enhancement with the integration of satellite optical and radar data.

In the context of the implementation of the Flood services of BEYOND, it has been also established the FLOODS OBSERVATORY, where all the flood events that have occurred in Greece are reported and several of them are depicted through the processing of satellite optical and radar images. [Read More](#)



Result of LANDSAT-5 images processing showing river extent on 10/10/2003 (area of 117,277 ha in light blue colour) over the river extent on 26/10/2003 (area of 231,932 ha in blue colour)

## List of EO based Services available within the BEYOND Center

Service	End Users	Geographical Coverage/Scale
EMERGENCY RESPONSE / EMERGENCY SUPPORT-METEO RELATED HAZARDS		
<u><a href="#">Real Time Fire Monitoring</a></u> ( <a href="http://ocean.space.noa.gr/seviri/fend_new/index.php">http://ocean.space.noa.gr/seviri/fend_new/index.php</a> )	Fire Brigades, Civil Protection, Public, Private Sector	Unlimited/ Medium scale
<u><a href="#">Rapid Fire Monitoring</a></u>	Fire Brigades, Civil Protection, Forestry Services, Min of Env	Unlimited/ All scales
<u><a href="#">Disaster Event Mapping &amp; Damage Assessment</a></u>	Fire Brigades, Civil Protection, Forestry Services, Min of Env	Unlimited/ All scales
<u><a href="#">Seasonal/ Diachronic Fire Mapping &amp; Damage Assessment</a></u> ( <a href="http://ocean.space.noa.gr/diachronic_bsm/index.php">http://ocean.space.noa.gr/diachronic_bsm/index.php</a> )	Fire Brigades, Civil Protection, Forestry Services, Min of Env, Cadastral Org	Unlimited/ All scales
<u><a href="#">Wild Fire Smoke Dispersion</a></u> ( <a href="http://ocean.space.noa.gr/BEYONDsite/index.php/atmospheric/fire-smoke-dispersion">http://ocean.space.noa.gr/BEYONDsite/index.php/atmospheric/fire-smoke-dispersion</a> )	Fire Brigades, Civil Protection, Min of Env	Unlimited/ Medium scale
Saharian Dust Episodes	Civil Protection, Min of Env, Public	Unlimited/ Medium scale
<u><a href="#">Flood Risk</a></u> ( <a href="http://ocean.space.noa.gr/BEYONDsite/index.php/floods/overview">http://ocean.space.noa.gr/BEYONDsite/index.php/floods/overview</a> )	National Electric Power Org, Min of Development, Local Authorities, Civil Protection	Unlimited/ All scales
<u><a href="#">Heat Waves Risk</a></u>	Min of Public Health, Local Authorities, Medical Science	Cities/Medium scale

## List of EO based Services available within the BEYOND Center

Service	End Users	Geographical Coverage/Scale
<b>EMERGENCY RESPONSE / EMERGENCY SUPPORT – GEO-HAZARDS</b>		
<a href="#">Earthquake related crustal deformation field</a>	Anti-Seismic Planning & Protection Org, EQ Scientists	Local/ Large-Medium scales
<a href="#">Volcano related surface velocity field</a>	Anti-seismic Planning & Protection Org, Local Authorities, EQ Scientists	Local/ Large-Medium scales
<a href="#">UAV-based Damage Recording</a> <small>(<a href="http://ocean.space.noa.gr/BEYONDsite/index.php/geophysical/uav-based-loss-recording">http://ocean.space.noa.gr/BEYONDsite/index.php/geophysical/uav-based-loss-recording</a>)</small>	Civil Protection, Earthquake Planning and Protection Organization, Municipality Authorities, Earthquake Rehabilitation Service, Min of Public Order and Civil Protection, Min of Env	Local/ Large scale
<b>ATMOSPHERIC DISTURBANCES – CLIMATOLOGY</b>		
<a href="#">3D-Climatology</a>	Cal/Val Industry, Global Atmospheric Monitoring Networks	Global/Small scale
<a href="#">Atmospheric Episodes (O3 &amp; NO2 sat obs) (UV &amp; Health)</a>	Cal/Val Industry, Global Atmospheric Monitoring Networks, Medical Science	Cities/Medium scale
<b>ECOSYSTEM MONITORING – LULC MAPPING</b>		
Urban Mapping	World Bank, EIB, Min of Env, Cadastral Org	Cities/Large scale
Ecosystem Monitoring and Mapping (Forests/Wetlands)	Min of Env, Hellenic Biotope & Wetlands Center, Cadastral Org	Unlimited/ All scales

Operational	Pre-Operational
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## BEYOND Public Outreach



### Public Media Articles

- Livas brings aerosols and clouds under one roof, ESA, **17 April 2014** ([Article](#))



### Presentations

- Presentation to the Workshop on Tectonic Geodesy, held in Athens on **14th of May 2014**
- Participation of BEYOND at the EGU General Assembly 2014, Vienna, Austria, **27 April – 02 May 2014**
- Urban Monitoring from Space Workshop, Athens, **31 March -1 April 2014**
- Présentation Intitulée: "Détecer à distance les éruptions volcaniques et les incendies" à la Conférence: "Les Rencontres de la Terre", Charalabos (Haris) Kontoes, **31 March 2014**, Institut français de Grèce
- Participation of BEYOND at the GEO X Plenary, the GEO Ministerial Summit and the parallel EC Side Events, Geneva Switzerland, **13-17 January 2014**.
- BEYOND contribution to the GEO 2005-2012 Work Plan Task D1-01-C1 entitled "Disaster Management Systems" in the specific component Task DI-01: Informing Risk Management and Disaster Reduction, GEO Ministerial and Plenary Week, **12-17 January 2014**
- Presentation of the BEYOND project at the Parliament Magazine, issue 381, **16 December 2013**
- Dr Iphigenia Keramitsoglou talk at NASA, NASA/UAH (University of Alabama in Huntsville) Weekly Seminars series on **30 November 2013**, on "Observations of the urban thermal environment from Space: science, synergies and capacity building"
- Presentations from Joint EARLINET GA / ACTRIS meeting in Limassol, Cyprus, **25-29 November 2013**
  - V. Amiridis , BEYOND objectives and related atmospheric activities
  - A. Tsekeri, Towards LIRIC and GARRLiC evaluation using in-situ airborne measurements
  - A. Tsekeri, Lidar and Sunphotometry synergy to define an aerosol model for space applications
  - E. Marinou, LIVAS global aerosol climatology and future improvements utilizing EARLINET
- Participation of BEYOND at the Researchers Night 2013 Mega Event, **27 September 2013**, Democritos NCSR, Athens, Greece
- Participation of BEYOND at the 78th Thessaloniki International Fair, **6-15 September 2013**, HELEXPO, Thessaloniki
- Ioannis Papoutsis, Xanthos Papanikolaou, Mike Floyd, Kang Hyeun Ji, Charalampos Kontoes, Demetris Paradissis, Demetris Anastasiou, and Athanasios Ganas, (2013), The Santorini inflation episode: from start to finish, ESA Living Planet Symposium, Edinburgh (Scotland), 9 – 13 September 2013, SP-722 CD proceedings.
- George P. Petropoulos, and Charalambos Kontoes, (2013), An exploration of CHRIS PROBA hyperspectral imagery for obtaining burnt area cartography from a uni-temporal perspective, ESA Living Planet Symposium, Edinburgh (Scotland), 9 – 13 September 2013, SP-722 CD proceedings.
- Charalabos Kontoes, Ioannis Papoutsis, Themistoklis Herekakis, Dimitrios Michail, and Emmanuela Ieronymidi (2013), National Burn Scar Mapping in Greece, 9th EARSeL Forest Fire Special Interest Group Workshop, 15–17 October 2013, University of Leicester, UK, in proceedings.

## BEYOND Public Outreach



### Presentations

- ❑ C. Kontoes, I. Papoutsis, Th. Herekakis, D. Michail, E. Ieronymidi, (2013), A fully automatic processing chain to produce Burn Scar Mapping products, based on the Landsat archive, EGU General Assembly 2013, Vienna | Austria | 07 – 12 April 2013.
- ❑ I. Papoutsis, X. Papanikolaou, M. Floyd, K.H. Ji, C. Kontoes, D. Paradissis, and D. Anastasiou, (2013), The Santorini inflation episode: from start to finish, EGU General Assembly 2013, Vienna | Austria | 07 – 12 April 2013.
- ❑ Manolis Koubarakis, Stefan Manegold, Charalambos Kontoes (2013), Building Earth Observatories using Scientific Database and Semantic Web Technologies, EDBT/ICDT 2013 Joint Conference, March 18-22, 2013 - Genoa, Italy.
- ❑ Iphigenia Keramitsoglou, Dimitris Stratoulis, Eleni Fitoka, Charalabos Kontoes, Nicolas Sifakis (2013), Wetland habitat mapping by applying advanced classification to very high spatial resolution satellite images, Changing European Landscapes, Landscape ecology, local to global, IALE 2013 European Congress, Manchester 9-12 September 2013.



### Papers

- ❑ Keramitsoglou I., C.T. Kiranoudis, and P. Sismanidis. "Real Time Quarter-Hour Monitoring of Urban Heat Islands". To appear in the Proceedings of the Third International Conference on Countermeasures to Urban Heat Island, at Venice, Italy, on **October 13-15, 2013**
- ❑ Keramitsoglou I., C.T. Kiranoudis, and P. Sismanidis. "Towards Real Time Quarter-Hour Monitoring of the Urban Thermal Environment at Sharpened Spatial Resolution". To appear in the Proceedings of the Third International Workshop on Earth Observation and Remote Sensing Applications Workshop, at Changsha, China on **June 11-14, 2013**
- ❑ I. Papoutsis, X. Papanikolaou, M. Floyd, K.H. Ji, D. Paradissis, V. Zacharis (2013), Deformation field at Santorini Volcano, Geophysical Research Letters, 2013, 40(2), pp. 267-272, doi:10.1029/2012GL054137
- ❑ I. Papoutsis, C. Kontoes, D. Paradissis (2013), ERS – ENVISAT cross-interferometry in the Athens metropolitan area, ESA Fringe Workshop, Frascati, Italy
- ❑ Charalampos Kontoes, Iphigenia Keramitsoglou, Ioannis Papoutsis, Nicolas I. Sifakis and Panteleimon Xofis 2 (2013), National Scale Operational Mapping of Burnt Areas as a Tool for the Better Understanding of Contemporary Wildfire Patterns and Regimes, Sensors 2013, 13, 11146-11166; doi:10.3390/s130811146.
- ❑ C. Kontoes, I. Papoutsis, T. Herekakis, N. Sifakis, (2013), Wildfire Rapid Detection and Mapping and Post-fire Damage Assessment in Greece, Earthzine, Fostering Earth Observation & Global Awareness, In Earthzine magazine, posted online 14 September 2013.
- ❑ Nicolaos I Sifakis, C. Iossifidis, C. Kontoes (2013), CHRISTINE Code for High Resolution Satellite Mapping of Optical Thickness and Angstrom Exponent. PART II: First application to the urban area of Athens-Greece and comparison to results from previous contrast-reduction codes, Computers & Geosciences, <http://dx.doi.org/10.1016/j.cageo.2013.05.011>.
- ❑ Evangelos Mitsakis, Iraklis Stamos, Anestis Papanikolaou, Georgia Aifadopoulou, Haris Kontoes (2013), Assessment of climate change impacts and extreme weather events on transport networks: Case study of the 2007 wildfires in Peloponnesus, Natural Hazards, DOI 10.1007/s11069-013-0896-3.



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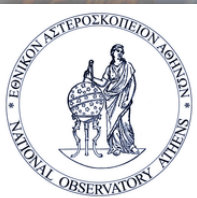
**BEYOND**

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 twining 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:

Integration of research entities from the EU's Convergence and Outermost regions in the ERA and enhancement of their innovation potential.

**Project GA number: 316210**  
**Total Budget: 2305650 €**  
**Duration: 3 years (2013-2016)**  
**EU Project Officer: Ms Ralitsa Atanasova**  
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