



Newsletter No.IV May 2015

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The Hellenic National Sentinel Data Hub. Official opening of the Greek CollGS (Mirror Site) in Space Expo (Athens, April 1, 2015)

On May 12, 2014, the National Observatory of Athens (NOA) represented by the President of NOA, Prof. Kanaris Tsiganos, and the European Space Agency (ESA) represented by the Director of EO-ESA, Prof. Volker Liebig, signed an agreement for the development of a CollaborativeGS activity in Greece, the so-called Hellenic National Sentinel Data Hub, or Greek Mirror Site. Its development has relied on human and infrastructure resources of the Center of Excellence BEYOND and cloud computing capacities provided by the partner GRNET SA. The official opening of the Greek Mirror Site operations was announced on April 1, 2015, during the works of the European Space Expo which took place in Athens. The private ceremony was opened by the President of NOA, Prof. Kanaris Tsiganos, and the President of GRNET SA, Prof. Panagiotis Tsanakas. A detailed presentation on the Hellenic Sentinel Data Hub, was given by the Scientific Coordinator of the Greek Mirror Site and Coordinator of the project BEYOND, Dr. Haris Kontoes, together with the WebMaster Leading person of the Greek Mirror Site Mr. Themistocles Herekakis. More Details can be found on section of «[Latest BEYOND EO Services](#)» below.

Photos from the European Space Expo in Athens 2015

Hellenic National Sentinel Data Mirror Site Openings Ceremony



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.

Contact Details: [Haris Kontoes - kontoes@noa.gr](mailto:kontoes@noa.gr)
[Eleni Christia - christia@noa.gr](mailto:christia@noa.gr)

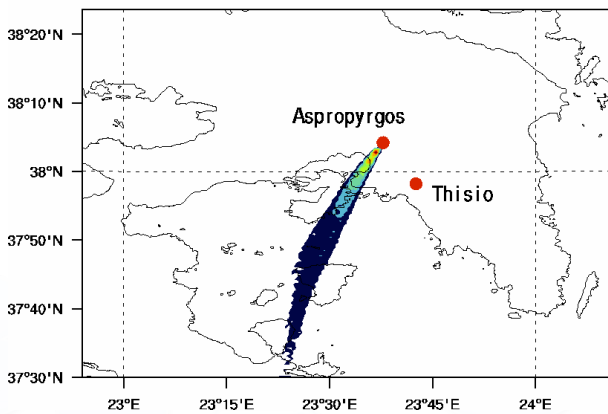
A societal service of BEYOND in a recent emergency response activation over Athens

Contact Person: [Haris Kontoes - kontoes@noa.gr](mailto:kontoes@noa.gr)

The smoke dispersion service of BEYOND was activated immediately after the large fire that broke out at the premises of the private recycling factory “GENIKI ANAKIKLOSEOS – KTIMATI KI XENODOXI AKI SA”, at Aspropyrgos area. The fire started on June 6, 2015 and lasted for 5 days. The fire brigades tried for several days to put out the blaze however new blazes were continuously breaking out. To be able to respond to concerns of the authorities about the possible dangers to the public's health from the fumes and the toxic gasses, the direction of the wind and the dispersion of the smoke and toxic gasses over the city of Athens on an hourly basis was assessed during the 5 days of the event informing the civil protection authorities of the Prefecture of Attica. The smoke dispersion service provided by BEYOND can be found [here](#).

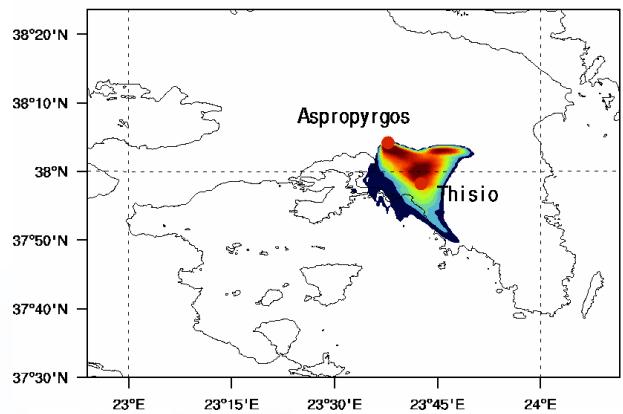
BEYOND / NOA FLEXPART
Smoke Integrated Column

valid:07-06-2015 0800 UTC
(Arbitrary Values)



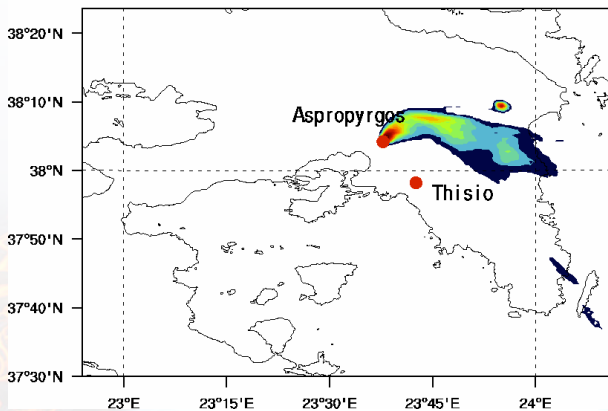
BEYOND / NOA FLEXPART
Smoke Integrated Column

valid:09-06-2015 0300 UTC
(Arbitrary Values)



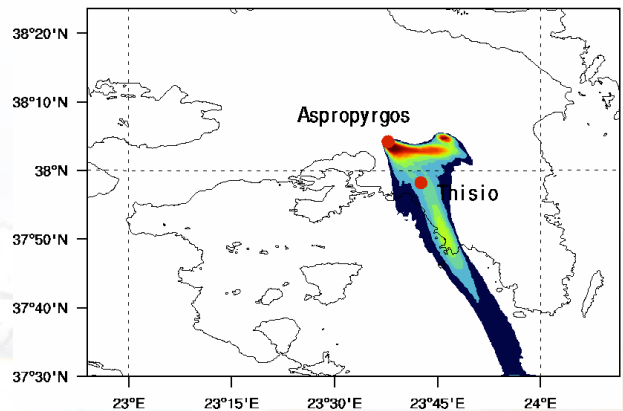
BEYOND / NOA FLEXPART
Smoke Integrated Column

valid:10-06-2015 1600 UTC
(Arbitrary Values)



BEYOND / NOA FLEXPART
Smoke Integrated Column

valid:11-06-2015 2200 UTC
(Arbitrary Values)



Snapshots of the simulated smoke dispersion from 4 different timestamps: upper left on 07/06/2015 08:00 UTC, upper right on 09/06/2015 03:00 UTC, lower left on 10/06/2015 16:00 UTC, and lower right on 11/06/2015 22:00 UTC

Press - Interviews

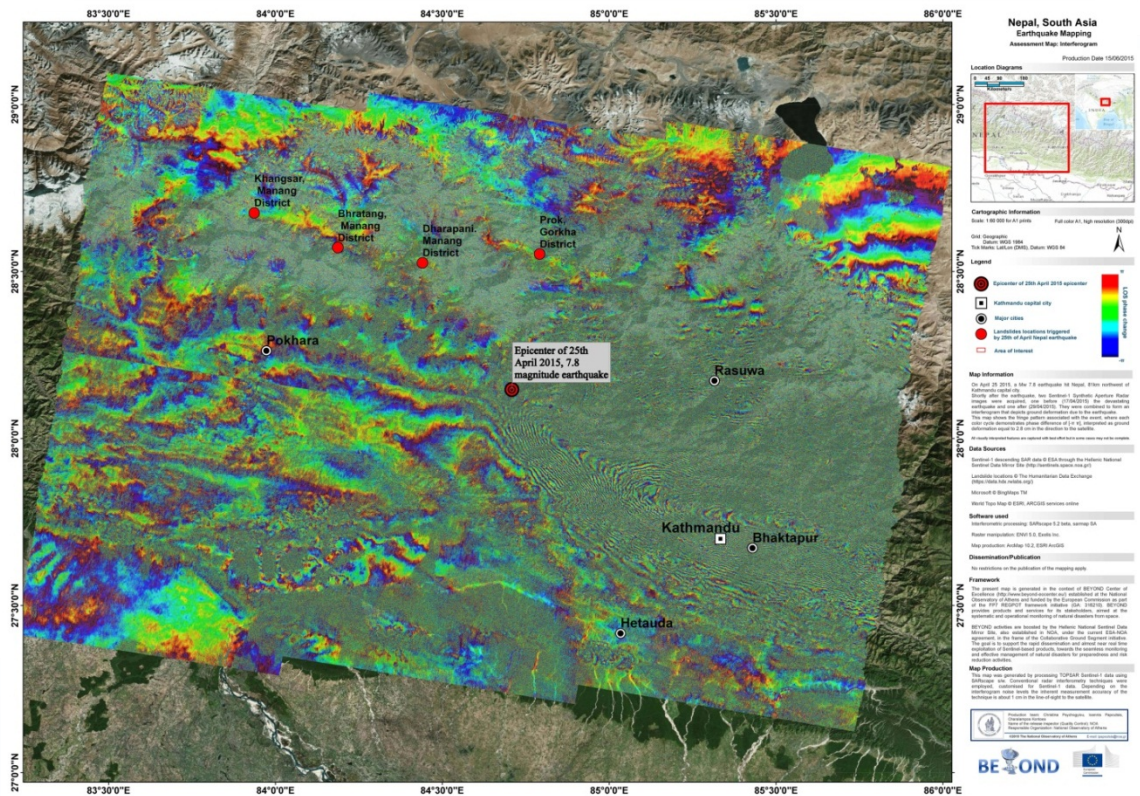


[Interview on SKAI TV](#)
(11/06/2015)
[Dr. Evangelos Gerasopoulos](#)

Nepal Earthquake seen from Sentinel-1 Satellite

Contact Person: [Dr. Ioannis Papoutsis - ipapoutsis@noa.gr](mailto:ipapoutsis@noa.gr)

Site Link: <http://ocean.space.noa.gr/BEYONDsite/index.php/geophysical/earthquakes/nepal-earthquake>



Sentinel-1 Interferogram of the Nepal Earthquake on 25/04/2015

On April 25 2015, a Mw 7.8 earthquake hit Nepal. The epicenter was east of the district of Lamjung and the hypocenter was at a depth of approximately 15 km. The event killed more than 8,800 people and injured more than 23,000. Kathmandu, Nepal's capital city was heavily inflicted suffering massive losses in human lives, damages in critical infrastructures and cultural heritage assets and thereby inducing major economic losses at a national scale.

NOA operates ESA's Sentinel Collaborative Ground Segment and maintains the BEYOND Center of Excellence for monitoring natural disasters from space. Shortly after the earthquake two Sentinel-1 Synthetic Aperture Radar images were acquired, one before the devastating earthquake and one after. They were combined to form an interferogram that depicts ground deformation due to the earthquake. The map reveals the overall impact of the earthquake. A large amount of fringes is evident, each one corresponding to 2.8 cm of ground displacement in the direction of the satellite. More than one meter of total deformation is observed. As a secondary phenomenon, the earthquake triggered several landslides north-northwest of the epicenter, which are also shown in the map.

This work highlights the operational capabilities of BEYOND, upscaled and triggered by the exploitation of the Sentinel Collaborative Ground Segment, for rapidly providing stakeholders with valuable information concerning ground displacement magnitude, pattern and extent following major earthquake events. At a subsequent phase, the interferometric information can be used by scientists to estimate key fault parameters and interpret the underlying geophysical processes towards estimating the seismic potential of the area.

Direct access to Sentinel data coupled with the advanced processing capacities, allows BEYOND to rapidly respond to future catastrophic events by timely providing a set of products to support disaster management and risk assessment. Such capacity is exercised within the CEOS Seismic Platform initiative, GEO's Disaster Task, and the Copernicus EMS programme.



ESA-NOA Collaborative Ground Segment Initiative in BEYOND

The Hellenic National Sentinel Data Hub - <http://sentinels.space.noa.gr/>

Contact Person: [Haris Kontoes](mailto:kontoes@noa.gr) - kontoes@noa.gr

In the context of the CollGS agreement signed between the National Observatory of Athens (NOA) and the European Space Agency (ESA), the first collaborative Sentinel Data Hub was designed, developed and implemented in the framework of the BEYOND Center of Excellence. The collaborative Sentinel Data Hub, the so-called Hellenic National Sentinel Data Hub, or the Greek Mirror Site, disseminates S-1, S-2, S3, and S-5p data to the whole area of South-Eastern Europe (i.e. the Balkans peninsula, alongside with Italy, France and the Iberian peninsula), as well as the Middle East and the North Africa. This on-line platform provides querying, cataloguing, previewing and data transferring capabilities for the Sentinel family of satellites. Via this infrastructure, NOA is upgraded to a data providing node of the Sentinels data in the wider SE European region and several of the countries located around the Mediterranean basin and beyond. BEYOND has invested significant resources in designing the Mirror Site architecture and developing its functional layers as the GUI Web interface for opening it to the public and users, the DB layer, the Physical Data Storage layer, and the Order handler and execution layer. In addition with the support of available structural funds, NOA has proceeded with the purchase and installation of high performant servers and a data storage center that are linked to ESA's Core Ground Segment facilities via the high speed GRNET SA (GEANT) network. After two months of operations the Greek Mirror Site has been accessed by 150 registered users from different countries, European and non-European ones, and has been used for downloading S-1 data for a variety of applications sectors including Land, Disaster Risk & Reduction, Marine and Border Control. Detailed information on the Hellenic National Sentinel Data Hub usage can be found in the [User Manual](#). The Hellenic National Sentinel Data Hub was presented in the ESA's Sentinel Collaborative Ground Segment Technical Workshop, hosted by the Italian Space Agency (Matera (Italy), 28 May 2015). The full presentation is found [here](#). Exploiting fully the Hellenic National Sentinel Data Hub facility, BEYOND initiated two nation-wide CollGS services that are, a) the systematic interferometric processing, assessment and monitoring of crustal deformation fields due to tectonic, seismogenic, and volcanic activity, and b) the continuous S1 data processing for flood detection, flood mapping and flood monitoring over the entire Greece.

SEARCH

Qlook	Platform	Level	Instrument	Prod.Type	Mode	Swath	Direction	Polarization	Start Date	Stop Date	Preview	Order
	SENTINEL-1	SAR Slice L0 product	SAR	RAW	IW		ASCENDING	VV	2015-01-27 17:22:33.294807	2015-01-27 17:23:05.694694		
	SENTINEL-1	SAR Slice L0 product	SAR	RAW	IW		ASCENDING	VV	2015-01-28 18:23:31.923506	16:24:03.4235		
	SENTINEL-1	SAR Slice L0 product	SAR	RAW	IW		ASCENDING	VV	2015-01-27 17:20:53.293342	2015-01-27 17:21:25.693336		

Qlook	Platform	Level	Instrument	Prod.Type	Mode	Swath	Direction	Polarization	Start Date	Stop Date	Preview	Order
	SENTINEL-1	SAR Standard L1 Product	SAR	GRS	IW		ASCENDING	VH	2015-01-28 16:45:43.810257	2015-01-28 16:41:55.830273		
	SENTINEL-1	SAR Standard L1 Product	SAR	BLC	IW	WIS	DESCENDING	VH	2015-01-28 08:30:05.467559	08:30:12.816458		
	SENTINEL-1	SAR Standard L1 Product	SAR	BLC	IW	WIS	DESCENDING	VH	2015-01-28 08:59:02.820174	2015-01-28 08:59:01.140259		

A Service Patent in BEYOND

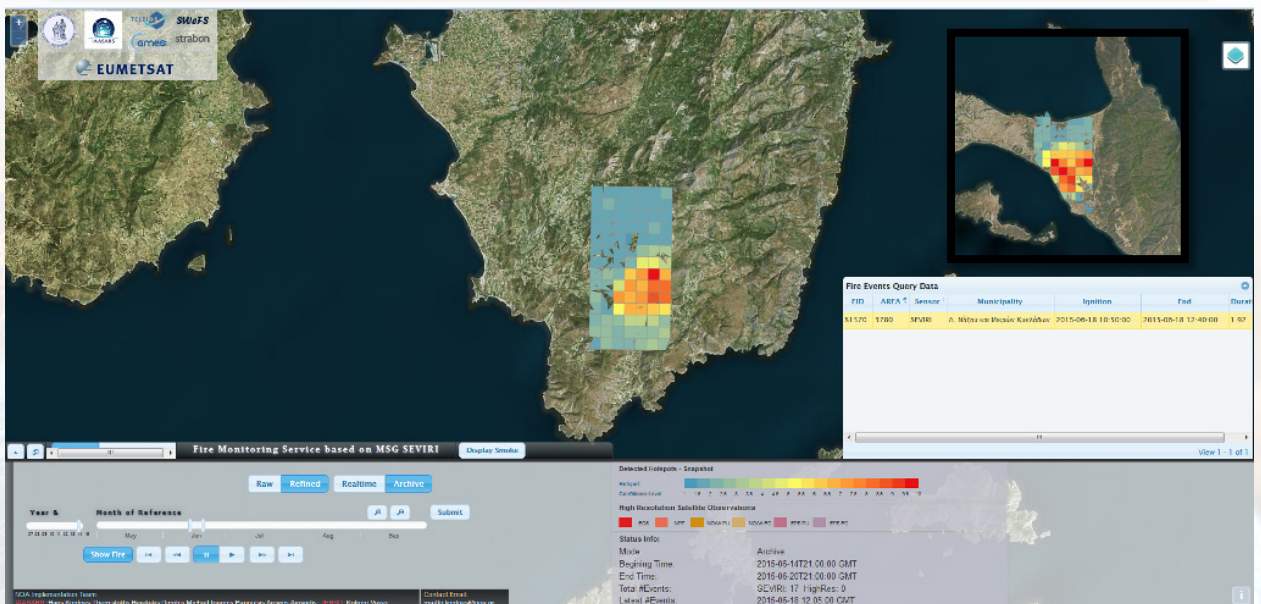
FireHub Patent (OBI – Industrial Property Organisation) - <http://ocean.space.noa.gr/FireHub>

Contact Person: [Haris Kontoes - kontoes@noa.gr](mailto:kontoes@noa.gr)

BEYOND declared a patent claim for the FireHub Service Application. The patent dossier was submitted to the Hellenic National Patent Office (Hellenic Industrial Property Organization). The patent claim, currently under review, was declared by the following statement: "A Method for real-time Fire Monitoring and Detection, which additionally estimates wildfire ignition points, by making use of satellite imagery with diachronic fire regime assessments, and precise analysis linking fuel data with fire proneness. The method lays under the scientific fields of remote sensing and digital image analysis. It successfully overcomes the problem of low spatial resolution of satellite observations used for regional wildfire monitoring in real time (e.g. MSG-SEVIRI). In order to increase the spatial resolution of the satellite based fire observations by about 50 times, the FIREHUB system invokes in real time a complex data modelling scheme that incorporates fire evidences originated from the satellite images with fuel and topography data, as well as systematically updated meteorological forecasts. The most probable ignition point for each detected fire is also calculated automatically. The calculated ignition points are used in conjunction with the high spatial resolution fuel, topography and meteorology data to derive evidences of fire occurrence in ground cells of 500mx500m wide every 5 minutes".

The FIREHUB system has won the first [Best Service Challenge](#) prize of the Copernicus Maters competition of 2014. [Related Article on BEYOND site.](#)

During the last months the FIREHUB system has been upgraded so as to use in addition to the MSG Seviri observations, the satellite images that are acquired daily by the X-/L-band acquisition station installed as BEYOND infrastructure. These images are captured from the infrared sensors on-board the satellites systems as EOS/AQUA&Terra (MODIS), NOAA-AVHRR, SUOMI NPP, METOP, and FY. To be noted that in the near future the system will be further upgraded in order to be able to use data from the S-2 Copernicus mission, as soon as the first S-2 images will become available at the Hellenic National Sentinel Data Hub site.



Overview of the new FireHub interface. Center: Fire at Naxos island on 18/06/2015 12:05:00 GMT, Upper right: Fire at municipality of Aristoteli (Chalkidiki) on 16/06/2015 11:00:00 GMT

BEYOND in the Copernicus Emergency Management Service

The National Observatory of Athens and the BEYOND team have been awarded a Framework Service Contract of Copernicus Emergency Management Service (EMS) for Risk and Recovery Mapping. The successful consortium is lead by the Greek company GEOAPIKONISIS S.A. (www.geoapikonisis.gr), and comprises of two more partners namely the CIMA Research Foundation (www.cimafoundation.org/), and the Altamira company (<http://www.altamira-information.com/>).

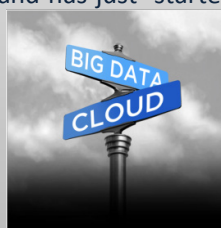
The screenshot shows the Copernicus Emergency Management Service website. It features the European Commission logo and the text 'COPERNICUS Emergency Management Service'. Navigation links include 'Home', 'What Is Copernicus', 'EMS - Mapping', 'EMS - Early Warning System', and 'News'. A sidebar menu lists 'EMS - MAPPING', 'RAPID MAPPING', 'RISK AND RECOVERY', and 'OTHER'. The main content area is titled 'Copernicus Emergency Management Service - Mapping' and includes a sub-heading 'A service in support of European emergency response' above a world map.

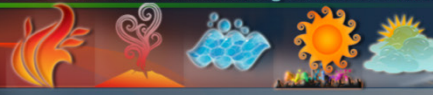
The Copernicus EMS, is intended as an operational service offered to the authorised users active in the field of crisis management in the EU Member States, the European civil protection mechanism, the Commission's Directorates-General (DGs), and the participating executive agencies and international humanitarian aid. The EMS Risk and Recovery Mapping Service covers requests for providing geospatial information in support to emergency management activities during the phases of Prevention, Preparedness and Reconstruction. The duration of the contract is of four years, and the budget allocated for the whole EMS Risk and Recovery module which is sharable between the three winning consortia is up to 8ME. The other two winning consortia which have been selected to provide services in the same framework contract are lead by the Airbus Aerospace company, and the INDRA in Spain company.

BEYOND in the ESA Disaster Risk Reduction project

Ref: AO/1-8130/14/F/MOS

The National Observatory of Athens and the BEYOND team have been awarded the contract for realising together with partners e-GEOS (www.e-geos.it/) (the consortium leader), Terradue (www.terradue.com/), and DEIMOS (http://www.deimos-dat.com/en/sobre_dat/info_dat3.html) the ESA study relating to Disaster Risk Reduction Using Innovative Data Exploitation Methods and Space Assets (Ref: AO/1-8130/14/F/MOS an ESA). This activity is looking at the contribution of new data exploitation methods to support space applications in the DRR domain. It has the aim to study how to better exploit and accelerate the utilization of space assets and innovative data exploitation methods such as cloud computing for big data and, secondly, to investigate future space assets (such as for instance future SAR and/or Optical EO missions) that would be more directly addressing the requirements from scientific and operational users of the Disaster Risk Management sector. The contract closed the negotiation phase with ESA and has just started its operations which will last for the next 18 months.





Upcoming Event

The BEYOND annual workshop at ESA premises, October 2015, Frascati

One of the main BEYOND dissemination events will take place at ESA premises at Frascati, on 15 October 2015. This workshop will provide an insight at the pre-operational and operational services delivered by the BEYOND Center of Excellence, in support of the Copernicus, and GEO initiatives, and also the institutional stakeholders, the scientific community, the end-users and the general public. The workshop will provide concrete examples of applications and products addressing the three thematic pillars of BEYOND, namely meteorological and human induced hazards, geo-hazards and atmospheric pollution and air quality hazards. It will showcase the operational capacities of BEYOND, and will identify complementarities with other scientific and research initiatives at a European and regional level towards exploiting synergies and forming sustainable collaborative networks. A number of invited talks from esteemed EC, ESA, UN, and GEO colleagues will be given. It will be also given the opportunity to invited scientific collaborators and end users of BEYOND, to present their views about the achieved service level, and the relevant research advancements in EO data exploitation that have taken place during the two years of operations of the project.

Preliminary Agenda of BEYOND annual workshop at ESA premises at Frascati, October 2015

Description
Registartion
Plenary Session: Introduction
Introductory Statements - Welcome
Coffee Break
Plenary Session I: BEYOND Thematic Pillars: Products & Services
Lunch Break
Plenary Session II: BEYOND Impact, Exploitation & Communication Activities
Coffee Break
Plenary Session III: BEYOND Infrastructure & Cal/Val Activities: A regional Perspective
Workshop Overview - Rountable Discussion
Adjourn
DINNER



Aerial view of ESRIN, ESA's centre for Earth observation, in Frascati, south of Rome, Italy

BEYOND Splinter Session in EGU's General Assembly 2015

BEYOND participated in the European Geosciences Union (EGU) General Assembly 2015, with the organisation of a dedicated to the project splinter session ([SPM1.4](#)) on Thursday, 16th of April 2015. This session provided a thorough insight in the activities undertaken within the BEYOND Center of Excellence, giving characteristic examples of applications and products that have been systematically delivered using remotely sensed data sets, on a pre-operational and operational basis. The three thematic pillars of BEYOND were addressed, namely meteorological and human induced hazards, geo-hazards and atmospheric pollution and air quality.

More Details can be found on BEYOND site ([Link](#))

EGU's 2015 BEYOND Splinter Session Programme

Title	Publications Links	Presenter
What is the BEYOND Center of Excellence?		Haris Kontoes
Operational fires disaster management and Floods in the framework of BEYOND via Earth Observation	 	Haris Kontoes
EO-based System for monitoring the Urban Thermal Environment		Panagiotis Sismanidis
Monitoring geophysical activity from Space, in the framework of BEYOND Center of Excellence		Ioannis Papoutsis
Atmospheric activities in the framework of BEYOND		Vassilis Amiridis



Dr. Haris Kontoes presenting BEYOND and its operational disaster management service (Firehub) at the EGU's BEYOND dedicated splinter session.



BEYOND Research Team and collaborators at EGU's 2015 Splinter Session. From left to right: Mr. Panagiotis Sismanidis, Dr. Olga Mavrouli, Dr. Vassilis Amiridis, Ms. Rodanthi-Elisavet Mamouri, Mr. Ioannis Binietoglou, Ms. Christina Psychogyiou, Ms. Eleni Christia, Dr. Haris Kontoes, and Ms. Georgia Diakogianni

BEYOND supported the European Space Expo in Athens

The European Space Expo (ESE) has visited Athens (Greece) from 28th March to 5th April 2015. In nine days the ESE attracted 104,307 visitors. The visitors enjoyed a rich and varied [programme](#) of activities and presentations by experts, dedicated to the flagship European Space Programmes (Copernicus, Galileo and EGNOS), and the many Space-related applications that have been developed for the benefit of the EU citizens.

Located in the heart of Athens (Syntagma square), the ESE hosted a continuous flow of visitors of all ages throughout each day of its deployment. The organisation of the ESE was supported locally by the scientific personnel of the Center of Excellence BEYOND, and the research staff of the National Observatory of Athens, receiving the gratitude of the EC for the high quality and successful cooperation.

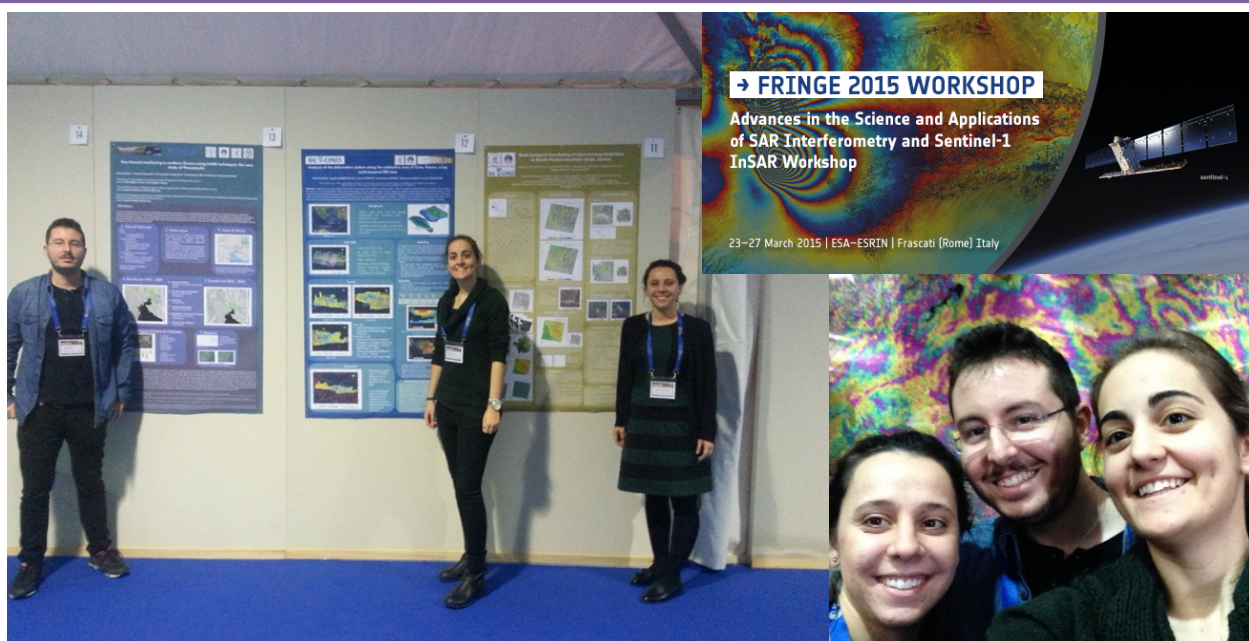


The European Space Expo in Athens, Greece. (©SpaceTec Partners 2015)

Fringe Workshop 2015, Frascati, Italy

The European Space Agency, in the context of the Scientific Exploitation of Operational Missions (SEOM) element, organized the 9th International Workshop Fringe 2015 Advances in the Science and Applications of SAR Interferometry and Sentinel-1 InSAR Workshop. The event was hosted in ESA-ESRIN in Frascati, Italy between 23 and 27 March 2015.

The Geophysical research group of the Center of Excellence BEYOND had an active presence in the workshop participating with three paper presentations, (i) Multi-temporal Monitoring of Slow-moving Landslides in South Pindus Mountain Range, Greece [[Ch.Psychogyiou](#) et al.], [[Paper](#)], [[Poster](#)] (ii) Geohazard Monitoring in Northern Greece Using InSAR techniques: the case Study of Thessaloniki [[N.Svigkas](#) et al.], [[Paper](#)], [[Poster](#)] and (iii) Analysis of the deformation pattern along the subduction zone of Crete, Greece, using multi-temporal ERS and Envisat data [[M.Kaskara](#) et al.], [[Paper](#)], [[Poster](#)].



BEYOND Twinning Activities

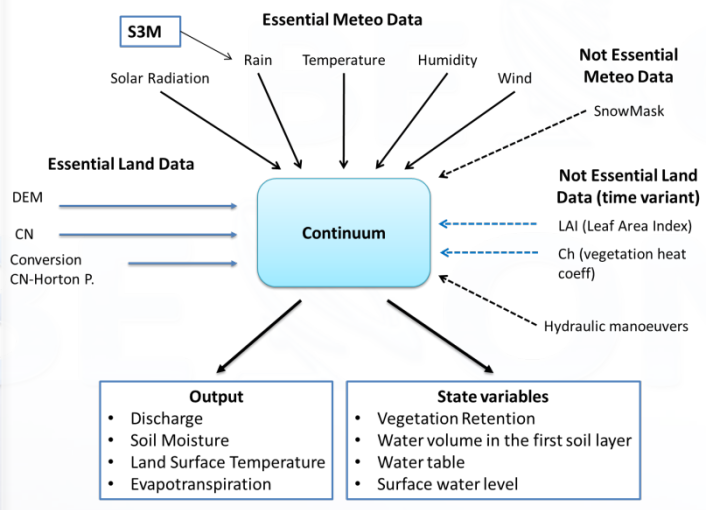
BEYOND Twinning with CIMA in the field of floods Visit of Ms Alexia Tsouni at CIMA, Savona, Italy, 9-13 February 2015

Contact Person: [Alexia Tsouni](mailto:alexiatsoni@noa.gr) - alexiatsoni@noa.gr

Ms. Alexia Tsouni visited [CIMA Research Foundation](#) (International Centre on Environmental Monitoring, University Campus of Savona, Italy) from 9-13 of February in the frame of the BEYOND twinning activities. CIMA is a non-profit research organization committed to the promotion and support of scientific research, technological development and training within the fields of Civil Protection, Disaster Risk Reduction and Biodiversity.



The works during the visit of Ms Alexia Tsouni at CIMA focused on the implementation of the Continuum Model, CIMA's hydrological model for water management and flood forecasting. The Continuum Model has been selected to meet requirements of BEYOND for flood management in the river basins of interest of the user Public Power Corporation SA. Continuum is a complete and distributed model that simulates the main hydrological processes with the possibility to exploit remote sensing data.



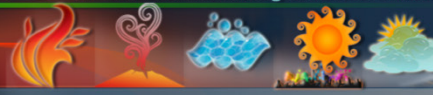
Many thanks to CIMA researchers and staff for their high quality training, support and warm hospitality.

Mr. Panagiotis Sismanidis visit in CEN-UHH, Hamburg, Germany, 17-22 May 2015

Contact Person: [Panagiotis Sismanidis](mailto:panosis@noa.gr) - panosis@noa.gr

Mr. Panagiotis Sismanidis, member of BEYOND, visited the Institute of Geography Center for Earth System Research and Sustainability of the University of Hamburg (CEN-UHH), from 17-22 May. The primary aim of his twinning was to advance the level of knowledge of the BEYOND team for studying the urban thermal environment and sharpening the urban land surface temperature data. During his stay, Mr. P. Sismanidis worked closely with his host Dr. Benjamin Bechtel, met the department staff and attended seminars organized by the UHH. He also had the chance to perform a thermography experiment with Dr. Klemen Zaksek.





Dr. Iphigenia's Keramitsoglou 2nd visit in NASA's MSFC



Dr. Iphigenia Keramitsoglou, Associate Researcher of NOA IAASARS and member of the Program Management Board of BEYOND, visited for the second time the Applied Science Team of NASA Marshall Space Flight Center (MSFC) in Huntsville, AL, from 11-19 May 2015. She presented an update on the work on urban thermal environment to members of the team and exchanged valuable ideas.

Iphigenia also visited the Redstone Arsenal, originally a chemical weapons manufacturing facility for World War II, which in the immediate post-war area it became home to the German rocket scientists that were brought to the US as part of Operation Paperclip. After 1956 the German design team was spun off to become part of the newly founded NASA. Redstone served as the primary site for space launch vehicle design into the 1960s.

Special thanks to her host, Dr. Dale Quattrochi, a Senior Research Scientist at NASA MSFC, who has received the NASA Exceptional Scientific Achievement Medal (2001) for his research on urban heat islands and remote sensing.

Twining on dust forecasting

During the period April 20-26, 2015, two scientists, Alberto Maurizi from ISAC-CNR, Italy and Dr. Slobodan Nickovic from Belgrade University, Serbia, visited IERSD/NOA, to collaborate with Dr. V. Kotroni, Dr. K. Lagouvardos and Dr. E. Flaounas. Both colleagues from Italy and Serbia have a long and solid experience on dust forecasting. The main objectives of the twinning were:

- 1) To discuss the numerical methods and models used by IERSD/NOA for dust weather forecasting over the Mediterranean area.
- 2) To discuss and propose methods for the verification of dust forecasts, against in-situ (where they exist) and/or satellite observations.
- 3) To integrate IERSD/NOA forecasts to the WMO Sand and Dust Storm Warning Advisory and Assessment System (SDS-WAS). This platform presents operational dust forecasts over the Mediterranean and our colleagues already provide forecasts to this system. It is anticipated that by the end of summer 2015, IERSD/NOA will also provide operationally dust forecasts to SDS-WAS which gathers all the state-of-the-art operational dust forecasts produced in Europe.



From left to right:
Mr. Alberto Maurizi (ISAC-CNR),
Dr. Slobodan Nickovic (Belgrade University),
Dr. V. Kotroni (IERSD),
Dr. K. Lagouvardos (IERSD)

Overall, the meeting was very constructive and definitely will help IERSD/NOA to increase its capacity on dust forecasting and verification.

Infrastructure Capacity Building

Installation of the PollyXT lidar at NOA-Thisio site

The PollyXT lidar of BEYOND has transported from TROPOS to Athens on 28th of April. Ronny Engelmann from the TROPOS Institute visited Athens for one week in order to assist BEYOND personnel to install the instrument for continuous operation at NOA's headquarters at the center of Athens (Figure 1). The system has been thoroughly calibrated and checked and started its operation on 22nd of May (Figure 2).

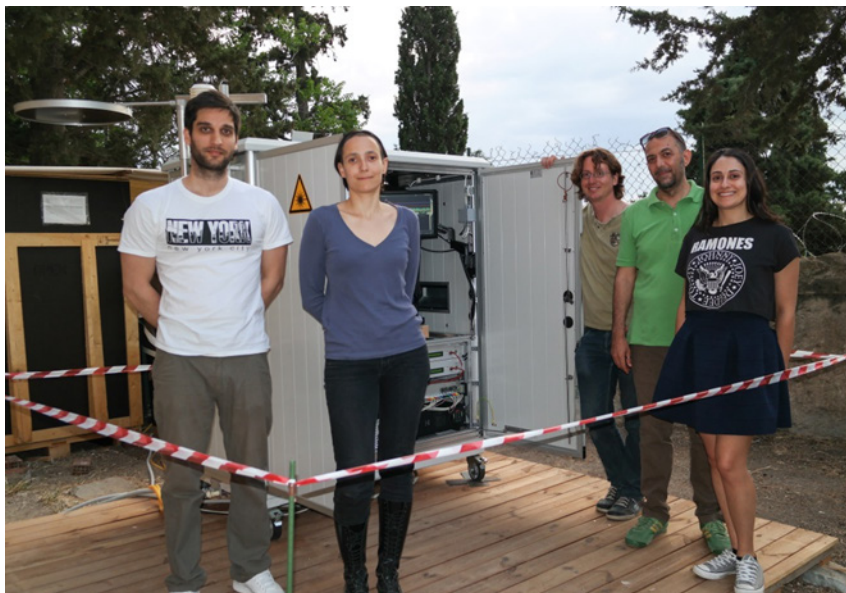


Figure 1. The PollyXT at NOA-Thisio site



Figure 2. The PollyXT laser beam

The first acquisitions are automatically uploaded and analyzed on the Polly.NET website (<http://polly.rsd.tropos.de>). The system already captured a Saharan dust event over Athens but also the smoke plume from a fire at a recycling plant in Aspropyrgos, southwest of Athens, which covered the Greek capital and the port city of Piraeus in noxious fumes from melting plastic and other packaging material (Figure 3).

Range-corrected signal@1064nm, PollyXT_NOA, NOA, Athens, Greece

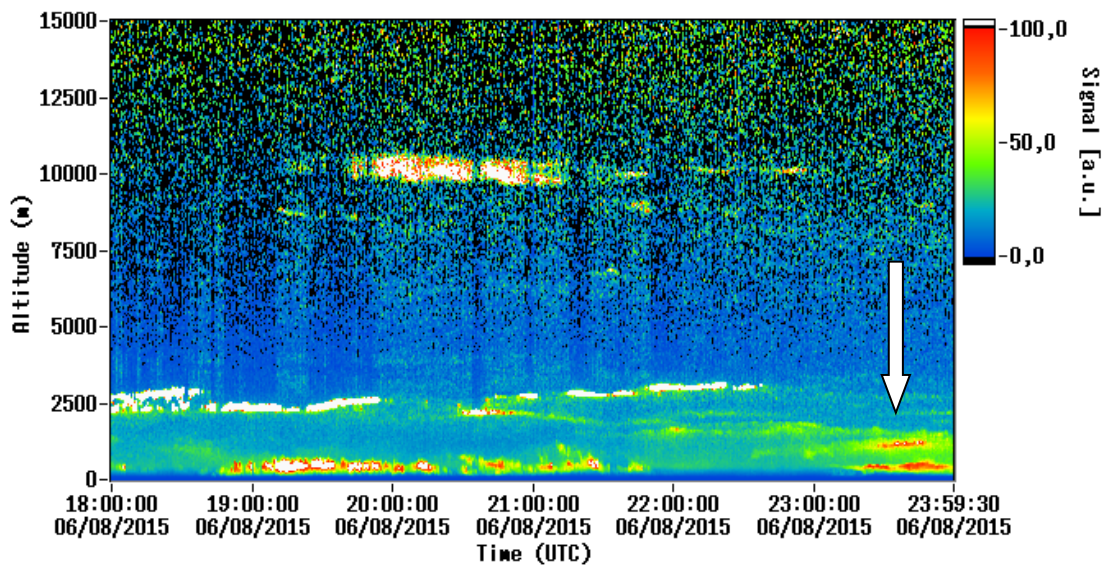


Figure 3. Plume from fire at a recycling plant in Aspropyrgos, southwest of Athens



Infrastructure Capacity Building

Upgrade of EUMETCAST-SEVIRI reception to DVB-S2

The EUMETCAST acquisition facility operated by NOA was upgraded in the framework of BEYOND to a DVB-S2 EUMETSAT-SEVIRI ground station system. The system is used for routine Fire Monitoring and Thermal Urban Environment services provision. The upgraded antenna and receiving components allow a significantly higher throughput and give access to a wide range of data and products from the existing EUMETSAT and future satellite systems.



BEYOND Public Outreach



Journals

- Donner, R.V., Balasis, G., et al. **Temporal correlation patterns in pre-seismic electromagnetic emissions reveal distinct complexity profiles prior to major earthquakes**. J. Phys. Chem. Earth (2015), <http://dx.doi.org/10.1016/j.pce.2015.03.008>, [Article in Press]
- E.Flaounas, V.Kotroni, K.Lagouvardos, S.Kazadzis, A.Gkikas, N.Hatzianastassiou, **Cyclone contribution to dust transport over the Mediterranean region**, Atmospheric Science Letters, DOI: 10.1002/asl.584, [Link](#), [Article]
- De Santis, A., De Franceschi, G., Spogli, L., Perrone, L., Alfonsi, L., Qamili, E., Cianchini, G., Di Giovambattista, R., Salvi, S., Filippi, E., Pavon-Carrasco, F.J., Monna, S., Piscini, A., Battiston, R., Vitale, V., Picozza, P.G., Conti, L., Parrot, M., Pinçon, J.-L., Balasis, G., Tavani, M., Argan, A., Piano, G., Rainone, M.L., Liu, W., Tao, D., **Geospace perturbations induced by the Earth: the state of the art and future trends**, Physics and Chemistry of the Earth (2015), doi: <http://dx.doi.org/10.1016/j.pce.2015.05.004>, [Accepted Manuscript]



Public Media Articles - Interviews

- BEYOND at European Space Expo in Athens**, ethnos.gr, [Saturday, March 28, 2015](#), [Link](#), [European Space Expo Athens 2015](#)
- Dr. E.Gerasopoulos, Interview on SKAI TV, **A societal service of BEYOND in a recent emergency response activation over Athens**, Skai TV (skai.gr), [June 11, 2015](#), [[External Link to Telecast Show](#)], [[Video \(Interview only - in Greek\)](#)], [[Related Article](#)]
- Dr. E.Gerasopoulos, Dr. S.Solomos, Dr. Haris Kontoes, **Simulation of smoke dispersion from the fire accident occurred on 6th June 2015, at the premises of "GENIKI ANAKIKLOSEOS – KTIMATIKI XENODOXIAKI SA"**, Aspropyrgos, Pefko Mavraki site, (Patima Aspropyrgos), [June 10, 2015](#), [Article]

BEYOND Public Outreach



Presentations - Conference Proceedings

•Participation of **BEYOND** in the **Fringe 2015 Workshop**, Frascati, Italy, **23 - 27 March 2015**:

1. Ch.Psychogyiou, I.Papoutsis, Ch.Kontoes, E.Poyiadji, N.Spanou, N.Klimis, **Multi-temporal Monitoring of Slow-moving Landslides in South Pindus Mountain Range, Greece, Thursday 26 March 2015**, [[Paper](#)], [[Poster](#)]
2. N.Svigkas, I.Papoutsis, C.Loupasakis, Ch.Kontoes, A.Kiratzj, **Geo-hazard Monitoring in Northern Greece Using InSAR techniques: the case Study of Thessaloniki, Thursday 26 March 2015**, [[Paper](#)], [[Poster](#)]
3. M.Kaskara, A.Barberopoulou, I.Papoutsis, Ch.Kontoes, A.Ganas, V.Karastathis, **Analysis of the deformation pattern along the subduction zone of Crete, Greece, using multi-temporal ERS and Envisat data, Thursday 26 March 2015**, [[Paper](#)], [[Poster](#)]

•BEYOND participation in EGU 2015 Conference - Splinter Session ([SPM1.4](#))

1. Ch.Kontoes, V.Amiridis, I.Keramitsoglou, I.Papoutsis, A.Tsouni, G.Balasis and E.Christia, **BEYOND Center of Excellence for EO-based monitoring of natural disasters**, Participation of BEYOND in the **EGU General Assembly 2015**, Vienna, Austria, **April 12 – 17, 2015**, [[Presentation](#)]
- 2a. Ch. Kontoes, Th. Herekakis, V. Tsironis, I. Papoutsis, S. Solomos, E. Ieronymidi, and V. Amiridis, **The FireHub Tool: NOA EO- based Fire Related Services in the framework of BEYOND**, Participation of BEYOND in the **EGU General Assembly 2015**, Vienna, Austria, **April 12 – 17, 2015**, [[Presentation](#)]
- 2b. A. Tsouni, E. Ieronymidi, Ch. Kontoes, **Flood mapping and modelling in the framework of BEYOND Center of Excellence**, Participation of BEYOND in the **EGU General Assembly 2015**, Vienna, Austria, **April 12 – 17, 2015**, [[Presentation](#)]
3. I. Keramitsoglou, P. Sismanidis, and Chris T. Kiranoudis, **EO-based System for monitoring the Urban Thermal Environment**, Participation of BEYOND in the **EGU General Assembly 2015**, Vienna, Austria, **April 12 – 17, 2015**, [[Presentation](#)]
4. I. Papoutsis, Ch. Psychogyiou, N. Svigkas, M. Kaskara, Ch. Kontoes, A. Ganas, V. Karastathis, G. Balasis, A. Barberopoulou, **Monitoring geophysical activity from Space, in the framework of BEYOND Center of Excellence**, Participation of BEYOND in the **EGU General Assembly 2015**, Vienna, Austria, **April 12 – 17, 2015**, [[Presentation](#)]
5. V. Amiridis, S. Solomos, H. Kontoes, E. Marinou, A. Tsekiri, T. Herekakis, S. Nickovic, **Atmospheric activities in the framework of BEYOND**, Participation of BEYOND in the **EGU General Assembly 2015**, Vienna, Austria, **April 12 – 17, 2015**, [[Presentation](#)]

•Haris Kontoes, **Greece's Collaborative Ground Segment Initiatives**, SENTINEL COLLABORATIVE GS WORKSHOP **2015, 28 May 2015** – Matera, [[Presentation](#)]



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:

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

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