



BEYOND

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



The European Centre of Excellence BEYOND for Earth Observation based monitoring of Natural Disasters in South-Eastern Europe



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

Funded under FP7-REGPOT-2012-2013-1

*Activity: 4.1 Unlocking and developing the research potential of
research entities established in the EU's Convergence regions and
Outermost regions*



Dr Haris KONTOES

Research Director of IAASARS/NOA

Project Coordinator





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



The European Centre of Observation based monitoring South-East



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Highly ranked priorities in **BEYOND**

➤ **BEYOND** aims to maintain and expand the existing state-of-the-art and interdisciplinary research potential in EO, by **Building a Centre of Excellence for Earth Observation based monitoring of Natural Disasters**

➤ **BEYOND** addresses societal needs of south-eastern Europe, with a prospect to increase its access range to the wider Mediterranean region through the integrated cooperation with more than **20 twinning organizations**



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- **BEYOND** aspires to setting up innovative observational solutions, allowing to a multitude of monitoring networks (space borne and in-situ) available over the region to operate in a complementary, unified, and coordinated manner
- **BEYOND** builds innovative research and skills capacity in the domain of EO through scientific exchange with European and regional partnering organisations
- **BEYOND** transforms the observations to added value products ready for down-streaming to specific societal needs in the domain of environmental monitoring and Natural Disasters
- **BEYOND** delivers online observations and higher level EO products and services to stakeholders, and international scientific and End User communities

Funding: 2.3 MEuros EC Contribution
Additional funding from Structural Funds ~270KEuros



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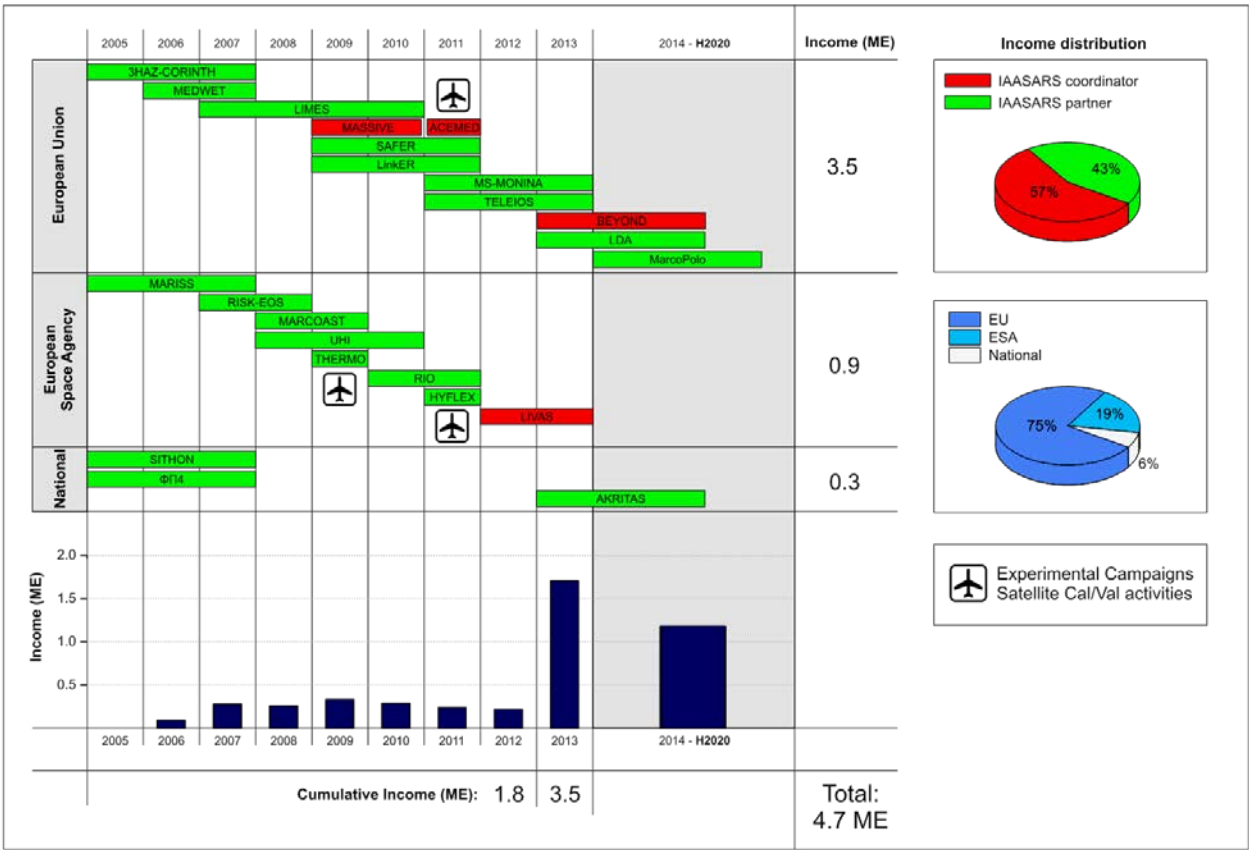


MASSIVE: Mapping Seismic Vulnerability and Risk of Cities
European Commission - DG ENV A.3 - Civil Protection

LDA Large-scale demonstrators in support of GMES and GNSS based services in Athens, Greece, GMES/DG ENTR

TELEIOS—Virtual Observatory Infrastructure for Earth Observation Data, FP7-ICT-2009-5

LIMES (Land and Sea Integrated Monitoring for European Security/GMES / EC DG Enterprise



LinkER - Supporting the implementation of an operational GMES service in the field of emergency management, Invitation to Tender No: ENTR/08/028

SAFER - EMERGENCY: Building Emergency Response Core Service, FP7-2007-SPACE-1/ GMES Collaborative Project

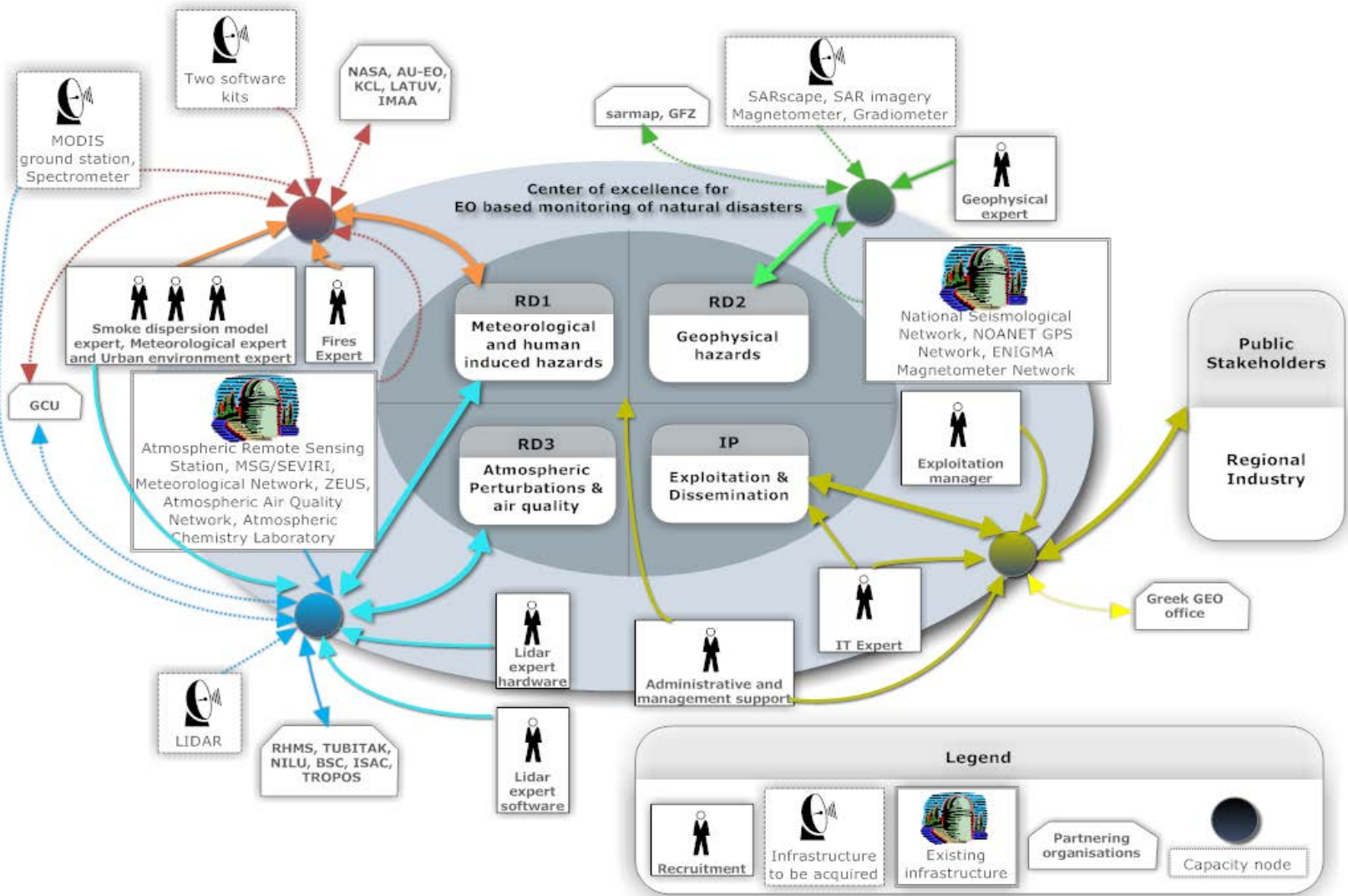
RISK-EOS Extension to Greece - Promotion of the GSE RISK-EOS fire services portfolio in Greece, EarthWatch GMES Services Elements, ESA/GSE
The final BEYOND Workshop, 17 May 2016
Athens, Electra Palace

MARCOAST/ISSUE-OS - Integrated system for suspect vessels emergency tracking - OIL SPILLS



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Setting up integrated satellite based observational solutions

➤ **X-/L- band** acquisition station for (EOS Aqua and Terra, NPP, JPSS, NOAA, Met Op, FengYun) **(part of the DB network)**



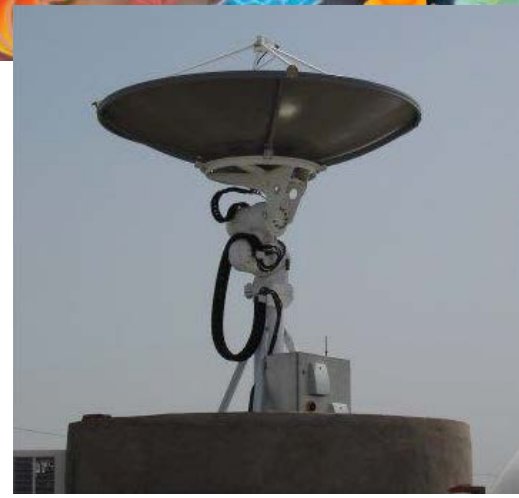
IAASARS/NOA X-/L-band Acquisition station



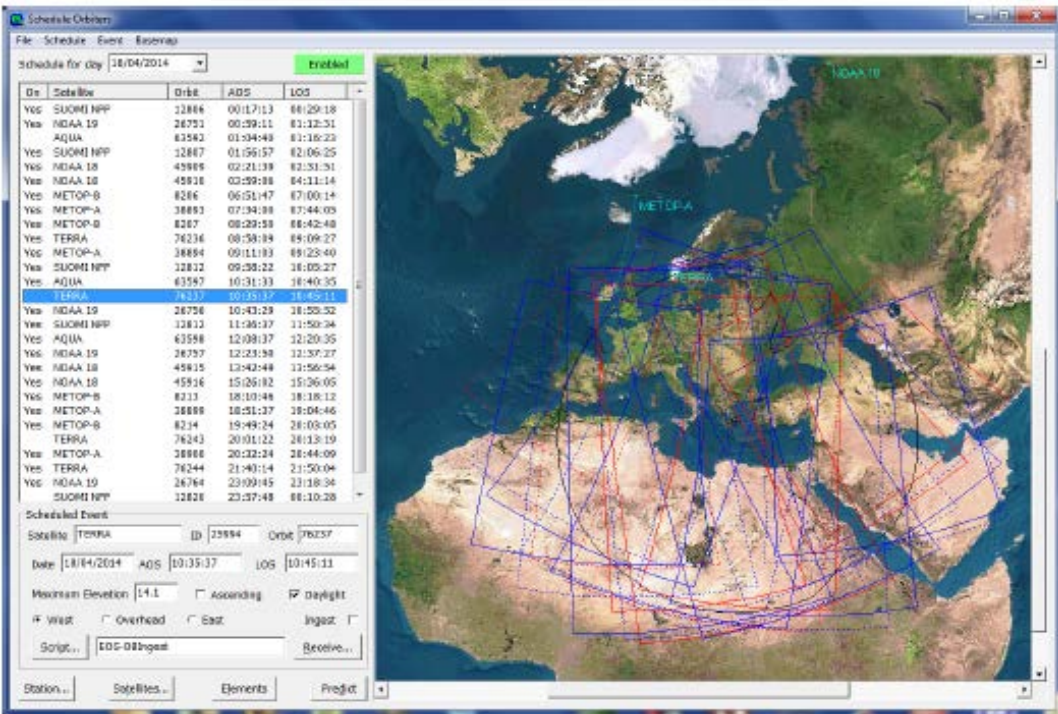
Infrastructure Capacity Building

Setting up integrated satellite based observational solutions

➤ **X-/L- band** acquisition station for (EOS Aqua and Terra, NPP, JPSS, NOAA, Met Op, FengYun) (part of the DB network)



IAASARS/NOA X-/L-band Acquisition station



Infrastructure Capacity Building



Setting up integrated satellite based observational solutions

- MSG SEVIRI acquisition stations of DVB-S & DVB-S2 systems exploiting high throughput provided with the new EUMETCast Europe service, based on using the EUTELSAT 10A (part of EUMETSAT's network)
- Access to NOA's in-situ monitoring seismological, magnetometer, and GPS networks

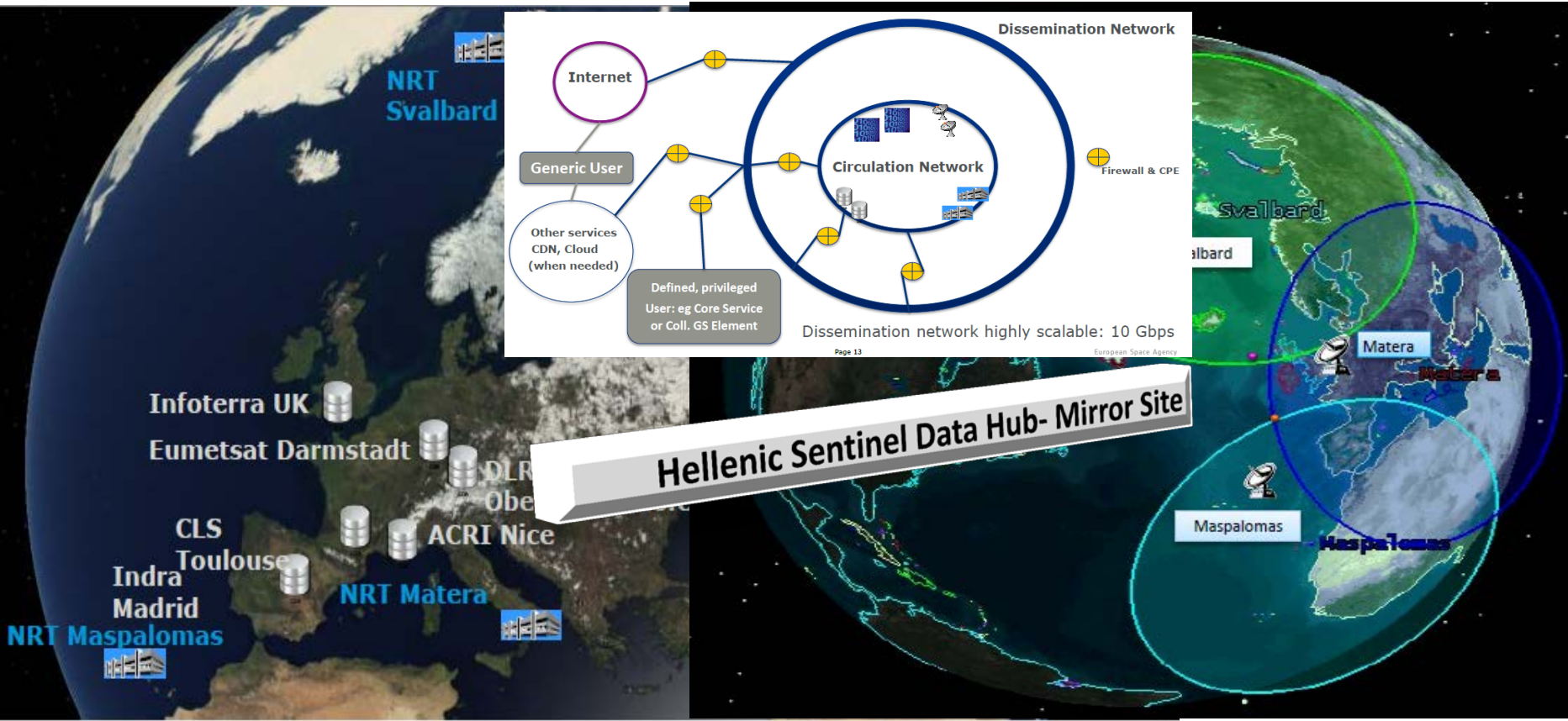


IAASARS/NOA MSG SEVIRI Acquisition station DVB-S2

➤ Develop and Operate of NOA's Collaborative Activity in the framework of the **COPERNICUS PROGRAM**
 The EUROPEAN EARTH OBSERVATION FLAGSHIP PROGRAM (EU/ESA)
<http://www.copernicus.eu/>

➤ a **GSC Core Ground Segment**, with **GSC-funded Functions and Elements**, providing :

- the primary access to Sentinel Missions data as well as
- the coordinating access functions to Contributing Missions data



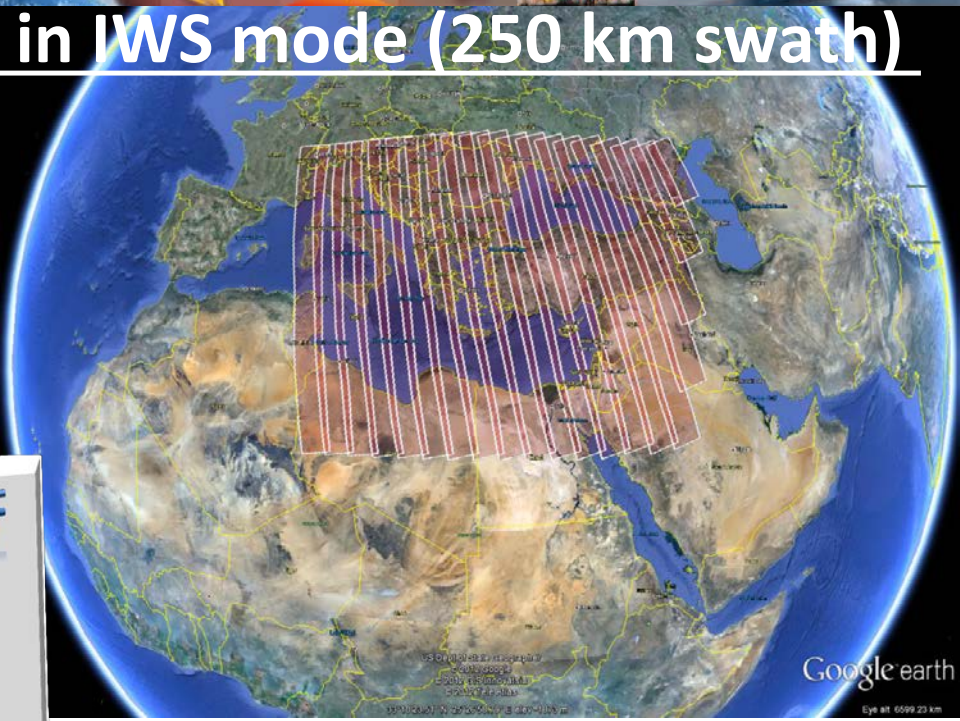


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Sentinel-1A/2A passes in IWS mode (250 km swath)



**OFFICIAL ANNOUNCEMENT OF
HELLENIC MIRROR SITE
ATHENS SPACE EXPO:
28 MARCH – 5 APRIL 2015**



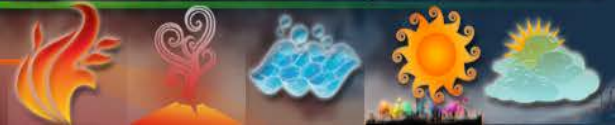
[HTTP://SENTINELS.SPACE.NOA.GR](http://sentinels.space.noa.gr)





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Operation of the mobile lidar of ESA by IAASARS



EARLINET



Development of a state-of-the-art multi-wavelength lidar to be installed in Crete (FKL), in the framework of the BEYOND project, part of the EARLINET network.



Infrastructure Capacity Building



ACHIEVEMENTS – EO SERVICES



Service	Status	End Users	Scale
EMERGENCY RESPONSE/EMERGENCY SUPPORT-METEO RELATED HAZARDS			
Real Time Fire Monitoring	Operational GMES Standard	Fire Brigades, Civil Protection, Public, Private Sector	National Regional
Rapid Fire Mapping	Operational GMES Standard	Fire Brigades, Civil Protection, Forestry Services, Min of Env	Regional Local
Disaster Event Mapping & Damage Ass.	Operational GMES Standard	Forestry Services, Min of Env (DG for Nat. Vegetation/Forest Protection)	Local
Seasonal/Diachronic Fire Mapping & Damage Ass.	Operational GMES Standard	Forestry Services, Min of Env (DG for Nat. Vegetation/Forest Protection, Cadastral Org, Fire Brigades)	National
Wild Fire Smoke Dispersion	Research/ Preoperational	Fire Brigades, Civil Protection, Min of Env	Regional Local
Saharian Dust Episodes	Research/ Preoperational	Civil Protection, Min of Env, Public	National
Flood Risk	Research/ Preoperational	National Electric Power Org, Min of Development, Local Authorities, Civil Protection	Regional Local
Heat Waves Risk	Research/ Preoperational	Min of Public Health, Local Authorities, Medical Science	Local

Web service

Web service

Delivered

To be Delivered as V1.0 in 2014

To be Delivered as V1.0 in 2015-2016



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EMERGENCY RESPONSE/EMERGENCY SUPPORT- GEO- HAZARDS			
Earthquake related crustal deformation field	Operational GMES Standard	Anti-seismic Planning & Protection Org, EQ Scientists	Local
Volcano related surface velocity field	Operational GMES Standard	Anti-seismic Planning & Protection Org, Local Authorities, EQ Scientists	Local
Landslide related surface velocity field	Research	Anti-seismic Planning & Protection Org, Local Authorities, Entrepreneurs, Civ. Eng, Geologists	Local
ATMOSPHERIC DISTURBANCES - CLIMATOLOGY			
3D-Climatology	Operational GMES Standard	Cal/Val Industry, Global Atm Monitoring Networks	Global
LULC CHANGE MONITORING – UAV / AIRBORNE / SATELLITE			
Atmospheric Episodes	Research	Monitoring Networks, Medical Science	Local
ECOSYSTEM MONITORING - LULC MAPPING			
UAV Damage Recording	Operational GMES Standard	Anti-seismic Planning and Protection Organisation	Local
Mineral detection and abundance	Research/ Preoperational	Min of Env, Min, of Developmen	Local
Ecosystem Monitoring and Mapping (Forests/Wetlands)	Operational	Min of Env, Hellenic Biotope & Wetlands Center, Cadastral Org	National Regional

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Thank you for your attention!

For more information

<http://beyond-eocenter.eu>