



# SPACE & SECURITY CONFERENCE

## Session 2

# Earth Observation (EO)

ATHENS, 19-20 JUNE 2014  
OFFICERS' CLUB "SAROGLEION"

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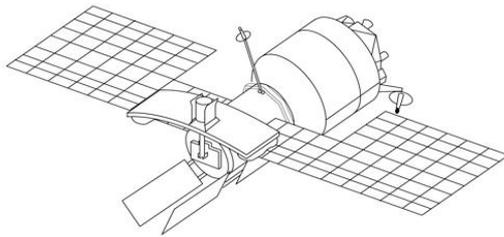
Enterprise  
and Industry



SPACE & SECURITY CONFERENCE

*Athens, 19-20 June 2014*

## Session 2 – Earth Observation (EO)



Dr Haris KONTOES  
Research Director of NOA  
National Delegate of H2020  
SPACE Program Committee





## SPACE & SECURITY CONFERENCE

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- **Space in Security**

- **Space systems, and assets in orbit, space applications, and services, are strategic infrastructures, and are suited and used to meet Security and Civil Protection needs in line with the Common European Security, Defense, and Environmental Policies**



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- **Space in Security**

- Traditional **civilian** and **military users**, and the **wider security and civil protection communities** benefit from Space services and systems developed as part of national and EU program initiatives



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- **Space in Security**

- **Space assets and space based monitoring infrastructures** are unique as they cannot be backed up by other types of ground monitoring networks



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- **Security in Space**

- **Space assets are critical infrastructures of high strategic value for Europe,** which need protection as their disruption would be critical for the society and endanger the civil protection, security and defense activities



- **Security in Space**

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- The European strategy focuses on **security in space** through **Space Situation Awareness (SSA)**, the aim of which is to monitor the objects orbiting in space such as satellites, and minuscule space debris, in order to avoid redundancy of space infrastructures, and replace of capabilities in case of disruption



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- **The EU's space related strategy**

- The European Union envisages the development of an operational capacity in **dual use space technologies**, stimulating civil-military synergies, and allowing to a wider user community to access to the space based security services



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- **The EU's space related strategy**
  - **Copernicus and Galileo** programs are developed in the context of the dual use of space systems



## ➤ Earth Observation

**Optical/SAR EO satellite systems**, e.g. Helios II (FR), Cosmo Skymed (IT), Pleiades (FR), SAR Lupe (DE), MUSIS, Sentinels, etc, are used in combination with airborne platforms, UAVs, geo-spatial and image intelligence (GEOINT, IMINT), for security purposes, such as mapping during and after crisis, assessment of high risk areas, monitoring of critical infrastructures, population flows/border migration, safety and rescue operations, and definition and targeting of objectives during operations



European  
Commission



# LIMES



LAND AND SEA  
INTEGRATED MONITORING  
FOR EUROPEAN SECURITY





# Regional Real Time Fire Monitoring - NOA's MSG SEVIRI Station



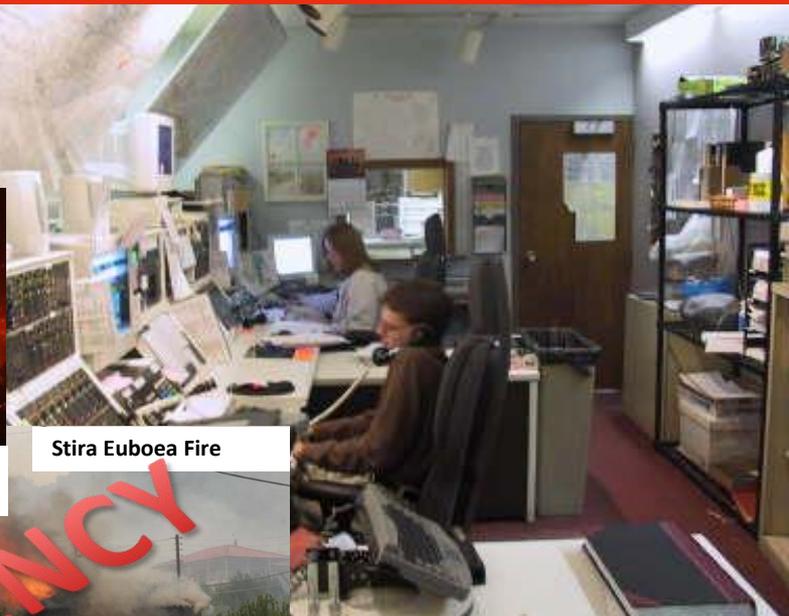
Olympia site Fire



Aliveri Euboea Fire



Korinthos Fire



Stira Euboea Fire



Parnon Mt Fire



Taygetos Mt Fire



Megalopolis Fire



Oitilon Fire



**EMERGENCY**

SEVIRI MIR 070823 1030 UTC



POTENTIAL FIRE



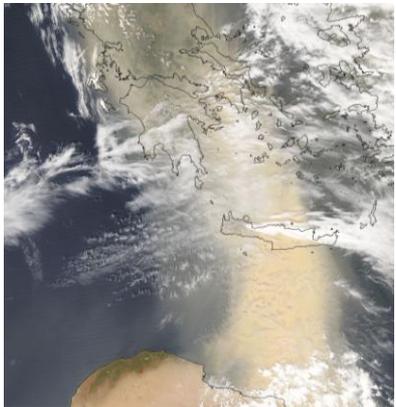
# Smoke and Toxic Emissions, Volcanic ash and Saharan Dust monitoring and modeling of dispersion

Fire & Volcanic  
Smoke/Ash



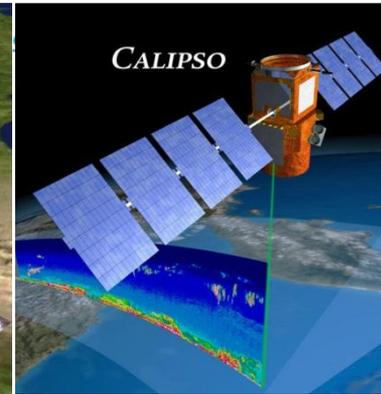
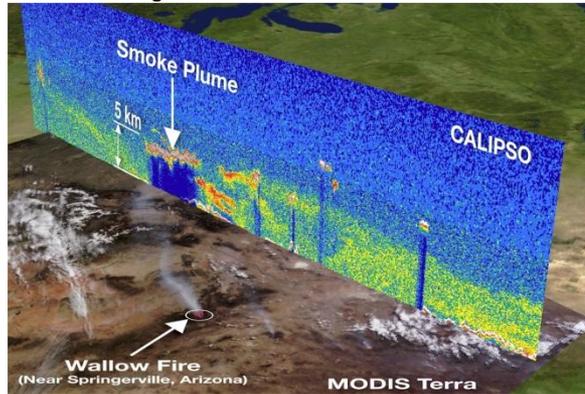
RMF00405 [RF] © www.visualphotos.com

Saharan Dust



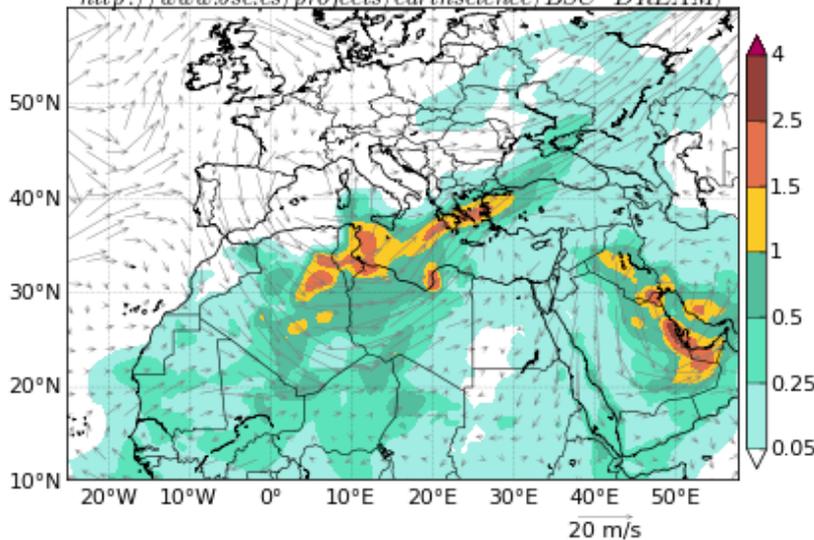


# Smoke and Toxic Emissions, Volcanic ash and Saharan Dust monitoring and modeling of dispersion

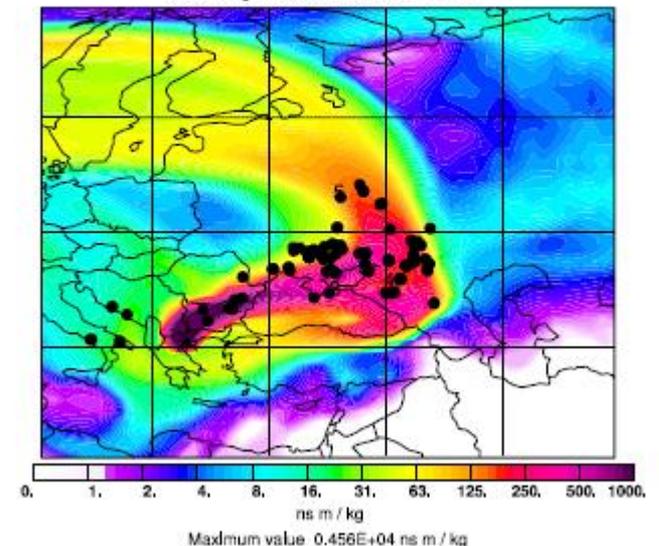


BSC-DREAM8b v2.0 Dust Load ( $g/m^2$ ) and 3000m Wind  
00h forecast for 12UTC 06 Apr 2013

<http://www.bsc.es/projects/earthscience/BSC-DREAM/>

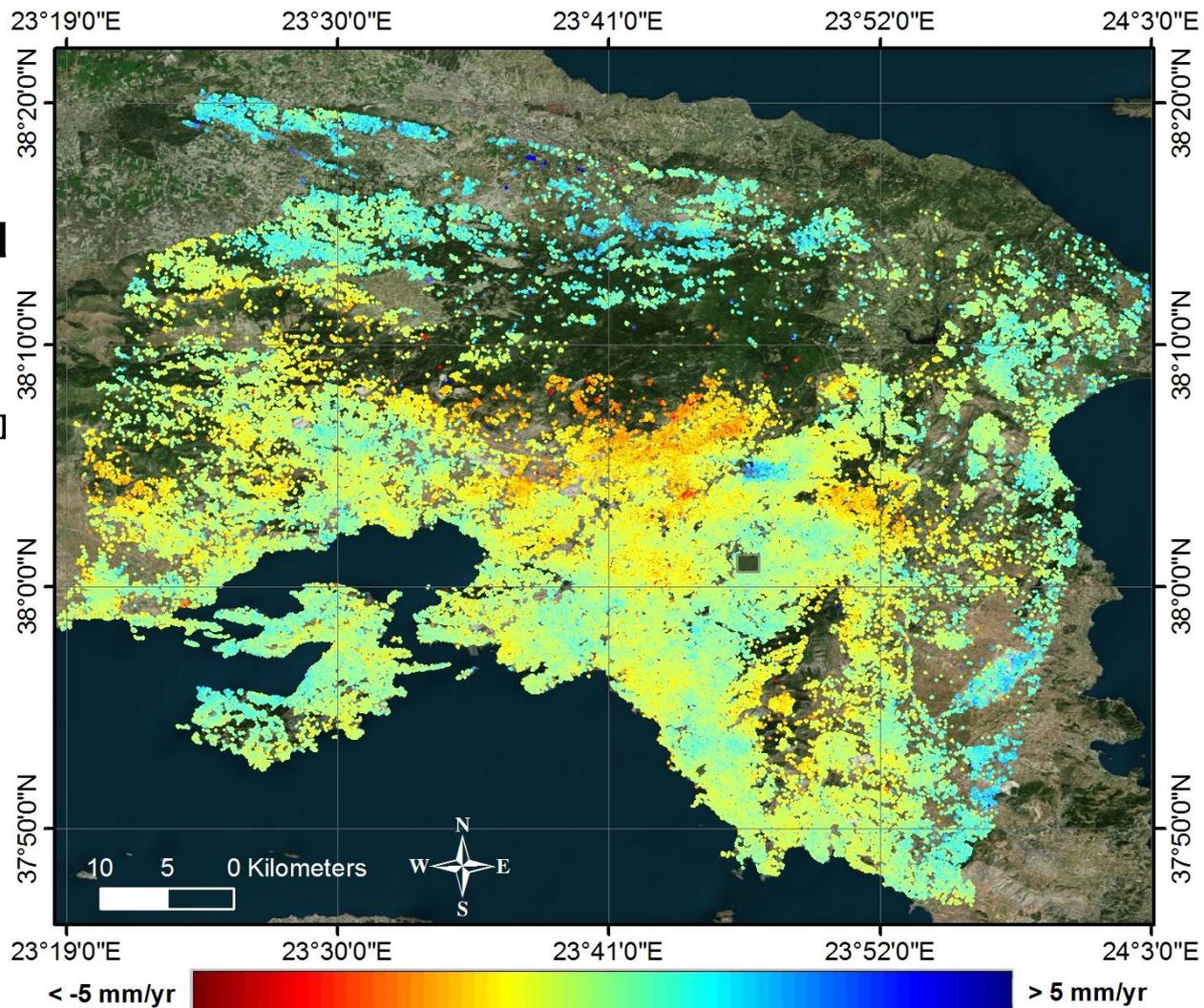


Column-integrated emission sensitivity in global domain for ThessalonikL\_010820,  
Start time of sampling 20010820.180000 End time of sampling 20010820.180000  
Upper release height 3000 m Lower release height 2500 m  
Meteorological data used are from ECMWF





### Stack IV (T236 ENV 2003 - 2010): Velocity field



**Operational  
InSAR/  
CinSAR  
Deformation  
Rate  
monitoring**



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- **Mr Rui Meneses, European Commission**
- **Mr Tryfon Daskalakis, Hellenic Ministry of Environment**
- **Prof. Menas Kafatos, Chapman University**
- **Prof Gunter Strunz, German Space Center (DLR)**
- **Mr Adriano Battista, EUSC**
- **Ms Annamaria Nassisi, Thales Alenia Space**