

Study to Map Greek Requirements and Capabilities in Earth Observation

Ημερίδα για την Παρατήρηση της
Γης στην Ελλάδα, Αθήνα, 18/5/2010,
Εθνικό Ιδρυμα Ερευνών

Operational GMES Services in Emergency Response

Fire Management in Greece



NATIONAL
OBSERVATORY
OF ATHENS

Dr Haris KONTOES

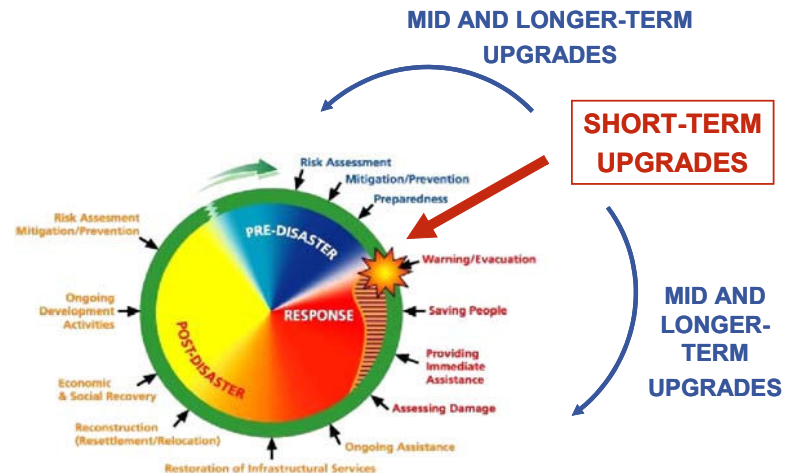
Emergency Response in GMES

GMES provides Users with environmental information through services dedicated to a systematic monitoring and forecasting of the state of the Earth's subsystems. Six thematic areas are developed: **marine, land, atmosphere, emergency response, security and climate change**

In Emergency Response field, there are several pre-cursor and on-going projects aiming to implement and validate preoperational version of Services, reinforcing the European capacity to respond to natural disasters

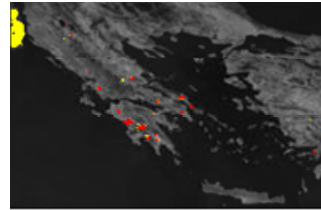
 First priority: Validate an information service focusing on **rapid mapping** during the response phase

 Second priority: Enrich this service with a wider set of **thematic products**



Four main types of ERS products

Early warning



Reference maps

Infrastructures,
Populated areas,
Land use, toponyms etc.
Historical assets
> 5Mio km²



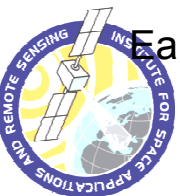
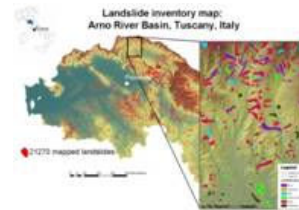
For headquarters,
decision-makers
and in-field operatives
In Europe and worldwide

Situation assessment maps
Rapid Mapping assessment
Situation and assets
35-60 RM activations/year



Thematic maps

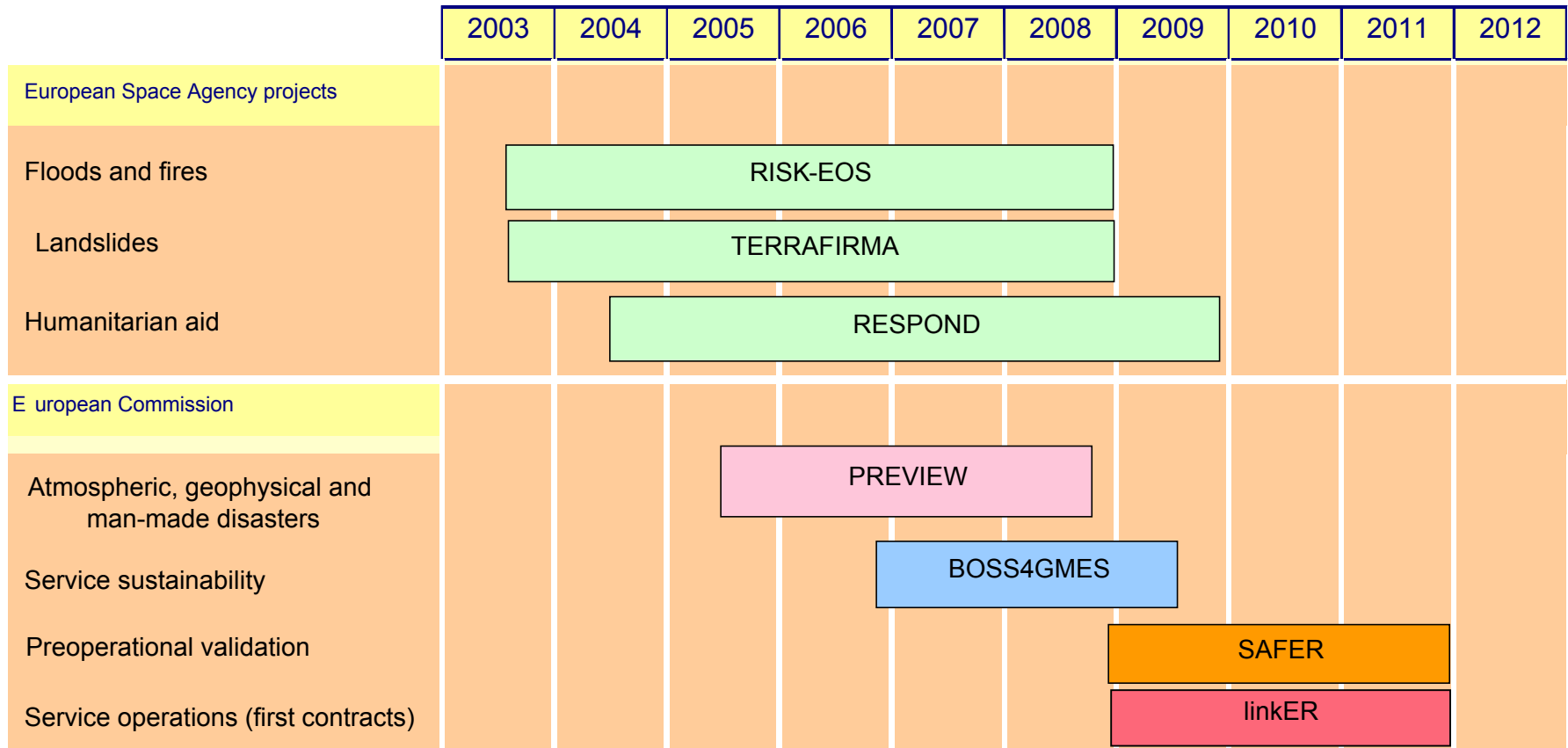
Flood risk and Plain/Flash
flood early warning
Fire risk and monitoring at
medium resolution
Earthquakes, landslides



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ERS road map, heritage and schedule



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GMES ERS ambitions and expectations

A user-driven operational service:

- **SLA (service level agreements) and quality assurance**
- **Validation by users with independent entity**

Rapid mapping with driving priority on quick information delivery:

- **Gradual increase of activations : 35-40-60 events per year**
- **Information centre with maps & information prepared in advance**
- **Reference maps available in less than 6 hours**
- **Anticipation of new prioritised acquisitions, based on events monitoring**

Complementary information:

- **Reference maps and toponyms anywhere in the world**
- **Reference mapping prepared in advance > 5 Mio km²**
- **Progressive enrichment with thematic maps**

An end-to-end service:

- **Single point of contact available 24/7**
- **Geo-information available on the field**
- **Service gateway**



GMES ERS portfolio in Greece

Regional Fire Monitoring – NOA SEVIRI Receiving Stations



EMERGENCY SITUATION

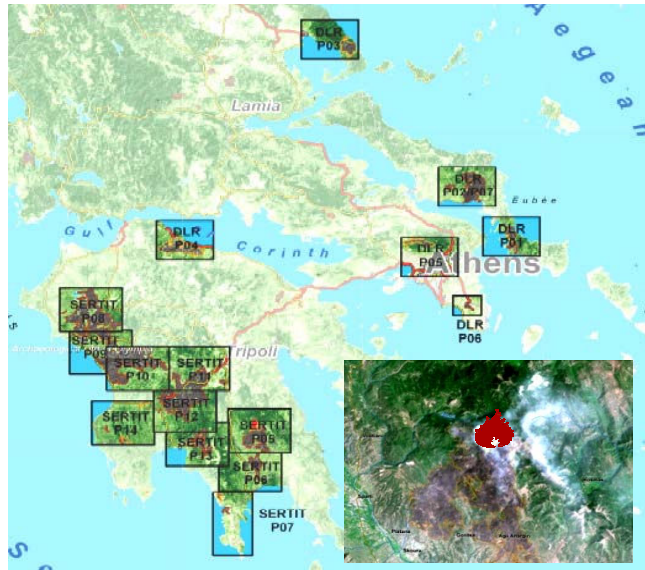
SEVIRI MIR 070823_1030 UTC



POTENTIAL FIRE
CONFIRMED FIRE

GMES ERS portfolio in Greece

Rapid Fire Mapping – Greece 2007



Index Map

55-60 burnt area maps were generated daily

in the period
24th August – 4th September 2007

Burnt Area Mapped = ~190.000 Ha

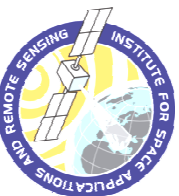


RAPID FIRE ASSESSMENT
SPOT 5, ENVISAT, MERIS,
MODIS, DMC, LANDSAT

24TH AUGUST – 5TH SEPTEMBER 2007



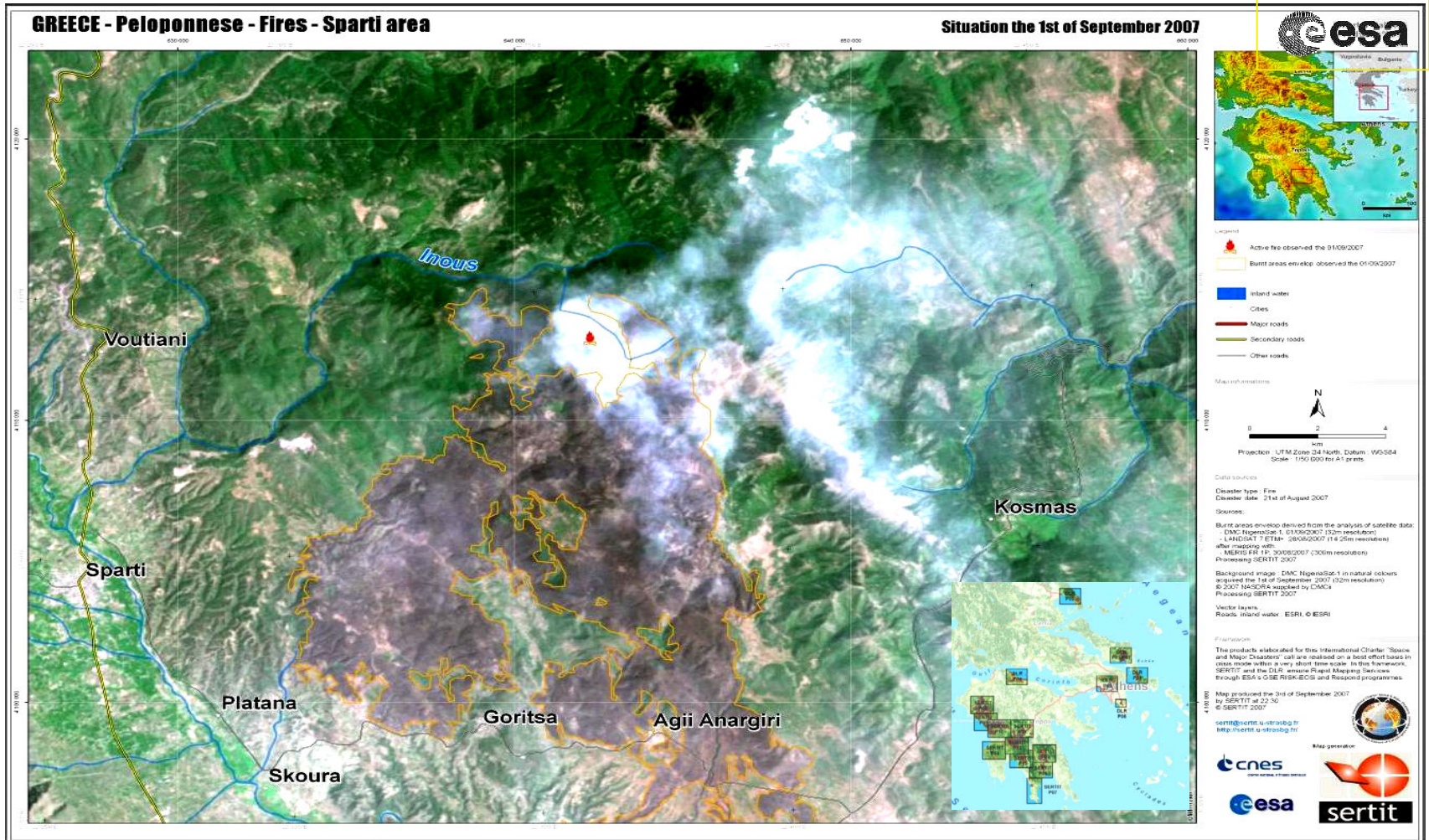
**THE
HELLENIC
CIVIL
PROTECTION
INITIATES
CHARTER &
MAJOR
DISASTERS**



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Rapid Fire Mapping – Greece 2007



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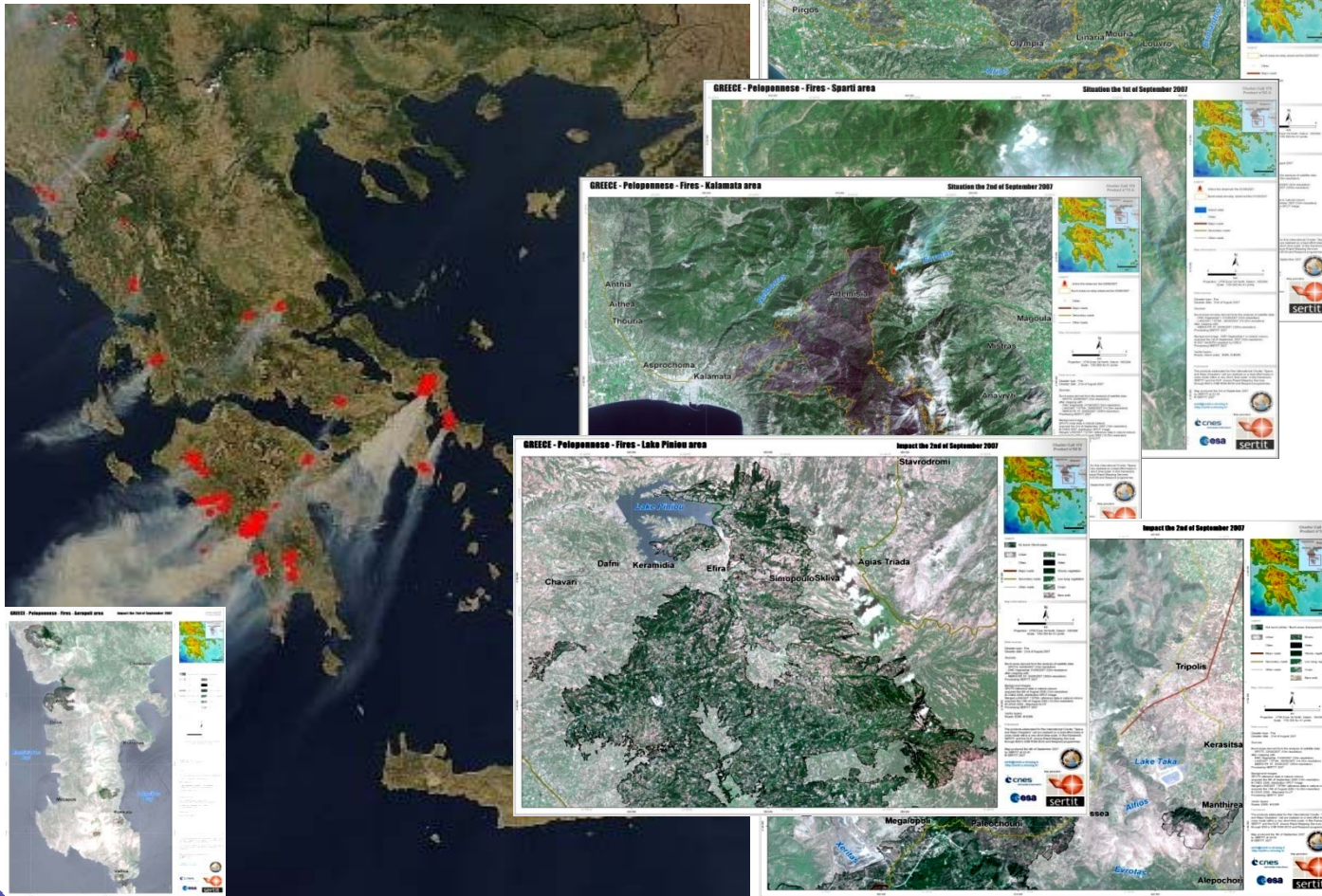


GMES ERS portfolio in Greece

Rapid Fire Mapping – Greece 2007



THE
HELLENIC
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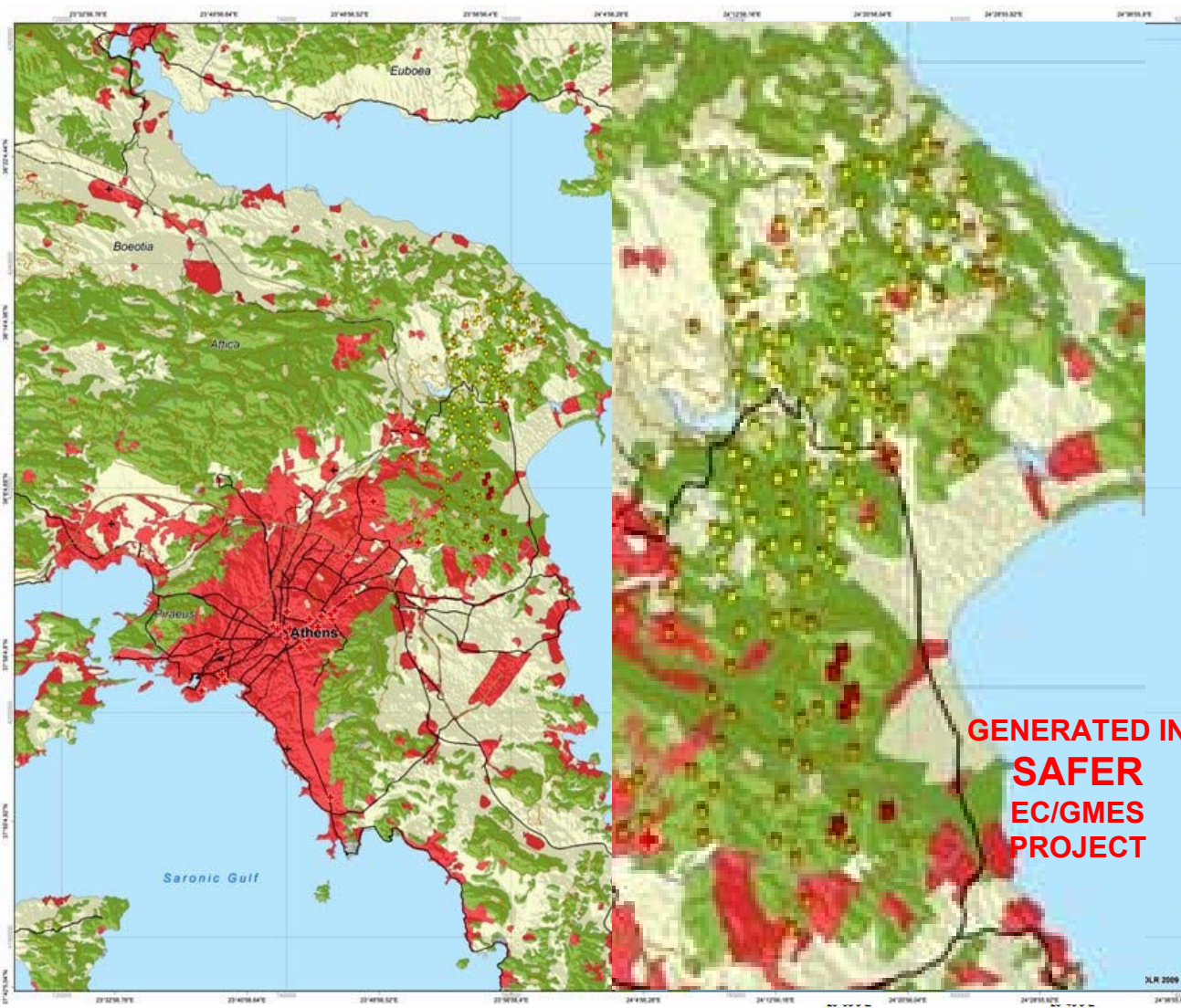


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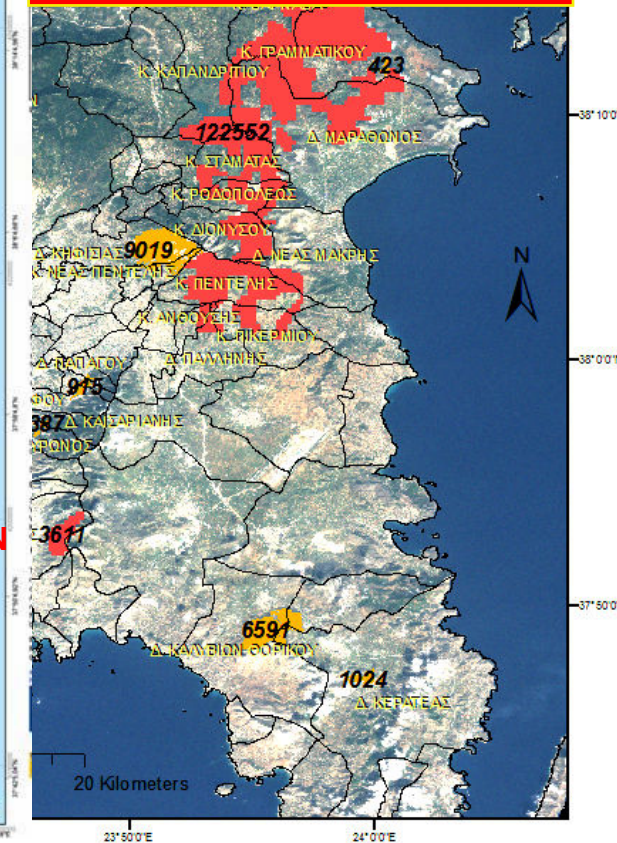
GMES ERS portfolio in Greece

Rapid Fire Mapping – Athens 2009



THE HELLENIC CIVIL PROTECTION INITIATES SAFER & CHARTER

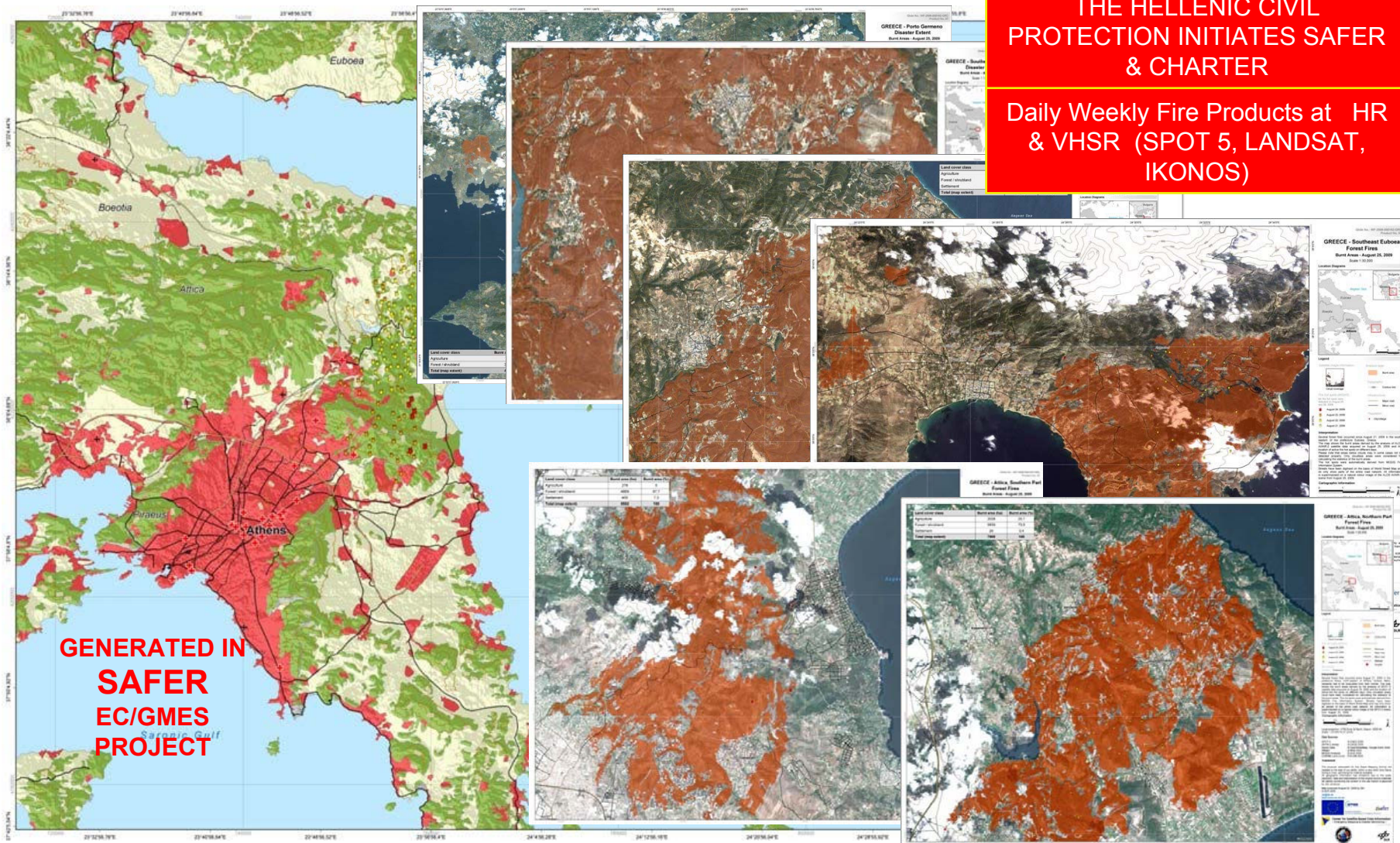
Daily Weekly Fire Products at Medium Resolution (SEVIRI – MODIS)



Rapid Fire Mapping – Athens 2009

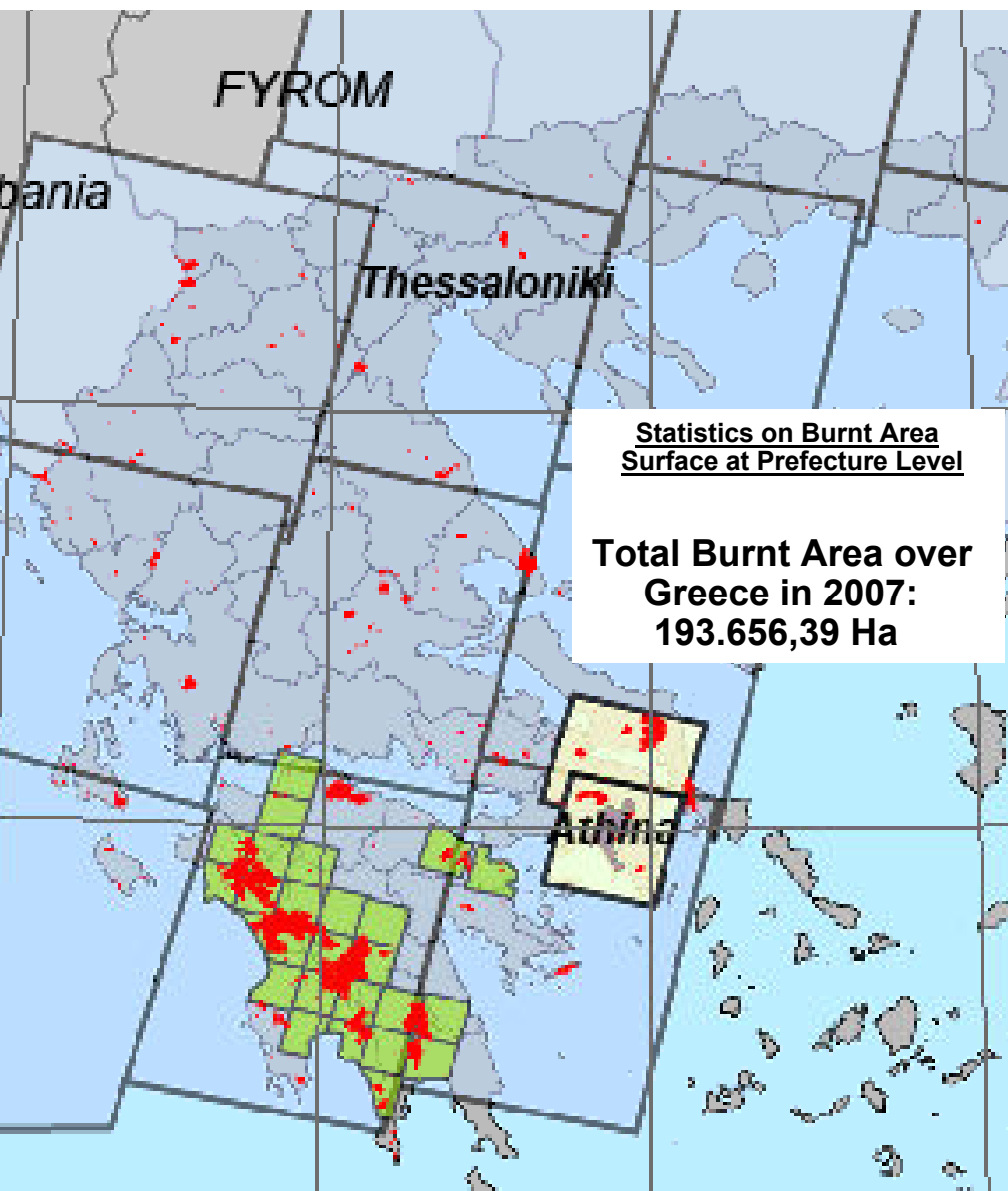
THE HELLENIC CIVIL
PROTECTION INITIATES SAFER
& CHARTER

Daily Weekly Fire Products at HR
& VHSR (SPOT 5, LANDSAT,
IKONOS)



GMES ERS portfolio in Greece

Fire Damage Assessment & GIS Thematic Products



BURNED AREA PER PREFECTURE (IN HECTARES)

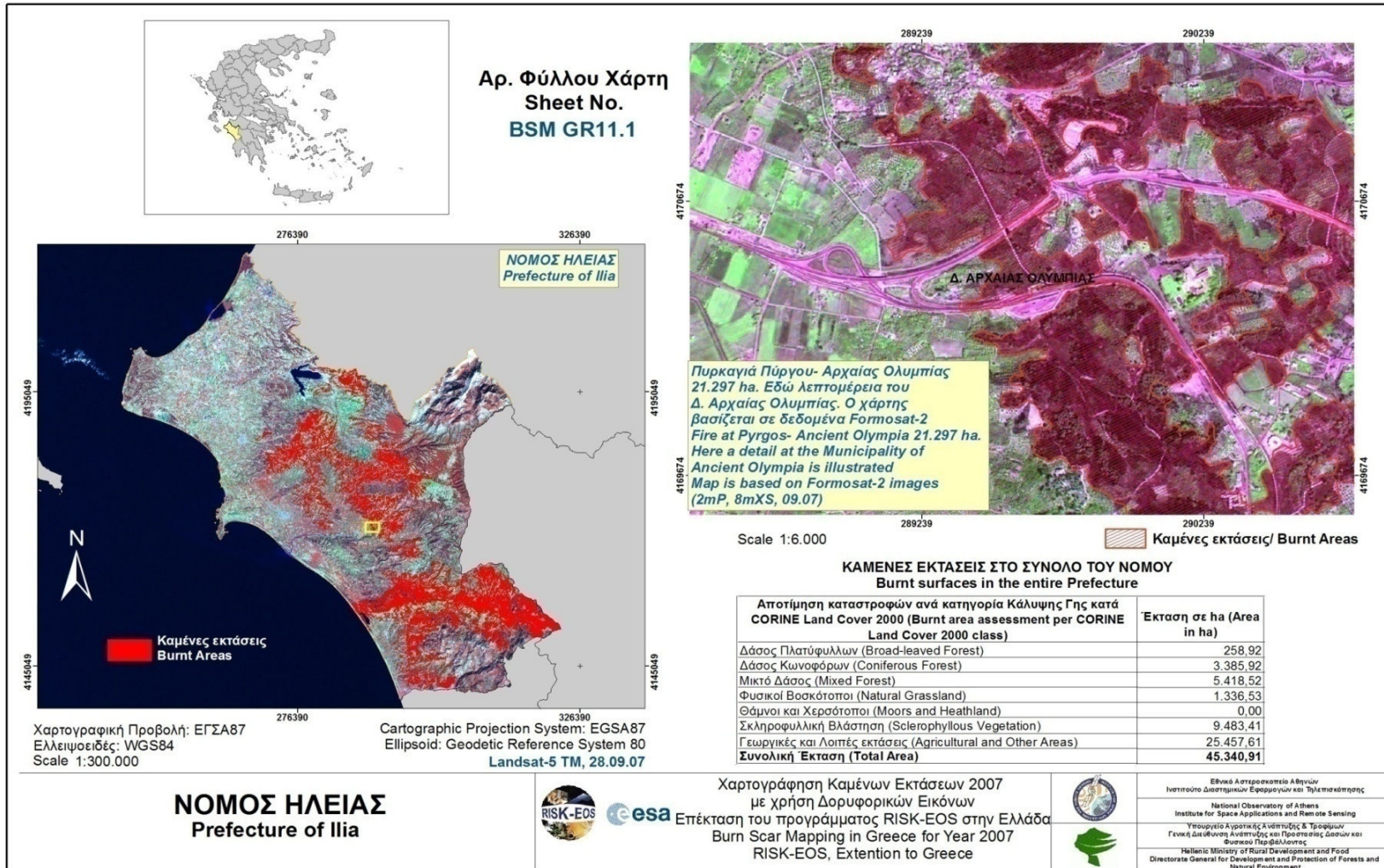
NOMOS	ΚΩΔΙΚΟΣ ΦΥΛΛΟΥ ΧΑΡΤΗ	ΚΑΜΕΝΗ ΕΚΤΑΣΗ (Ha)
ETOLIA AND AKARNANIA	GR01	2 736.60
ARGOLIDA	GR02	697.01
ARCADIA	GR03.1 - GR03.3	38 135.29
ARTA	GR04	924.23
ATHINA, ANATOLIKI (EASTERN) ATTIKI,	GR05.1 - GR05.4	5 124.71
DYTIKI (WESTERN) ATTIKI		
ACHAIA	GR06	9 976.00
VIOTIA	GR07	4 283.86
GREVENA		2.83
DRAMA	GR08	163.45
EVROS		105.67
EVIA	GR09.1- GR09.2	20 852.26
ZAKYNTHOS	GR10	948.10
ILIA	GR11.1- GR11.2	45 340.91
IMATHIA		56.10
THESPROTIA	GR12	2 070.19
THESSALONIKI	GR13	1 856.45
IOANNINA	GR14	476.53
KARDITSA	GR15	217.54
KASTORIA	GR16.1 - GR16.2	1 897.49
KERKYRA		93.21
KEFALLONIA	GR17	2 675.94
KILKIS		128.63
KOZANI	GR18.1 - GR18.2	1 319.74
KORINTHIA	GR19	2 550.50
LACONIA	GR20.1 - GR20.2	17 806.21
LARISA	GR21	2 354.28
LESVOS		7.91
LEFKADA		3.92
MAGNISIA	GR22.1- GR22.2	6 008.50
MESSINIA	GR23	15 213.88
XANTHI		39.49
PIREAS	GR24	1 674.19
PELLA		183.88
PIERIA	(Βλέπτε) GR18.2	432.09
PREVEZA	GR25	725.72
RODOPI		26.76
SERRES	GR26	195.50
TRIKALA		67.96
FTHIOTIDA	GR27.1- GR27.2	4 156.68
FLORINA	GR28	2 112.52
FOKIDA		13.66

TOTAL AREA (acres)

193 656.39

GMES ERS portfolio in Greece

Fire Damage Assessment & GIS Thematic Products



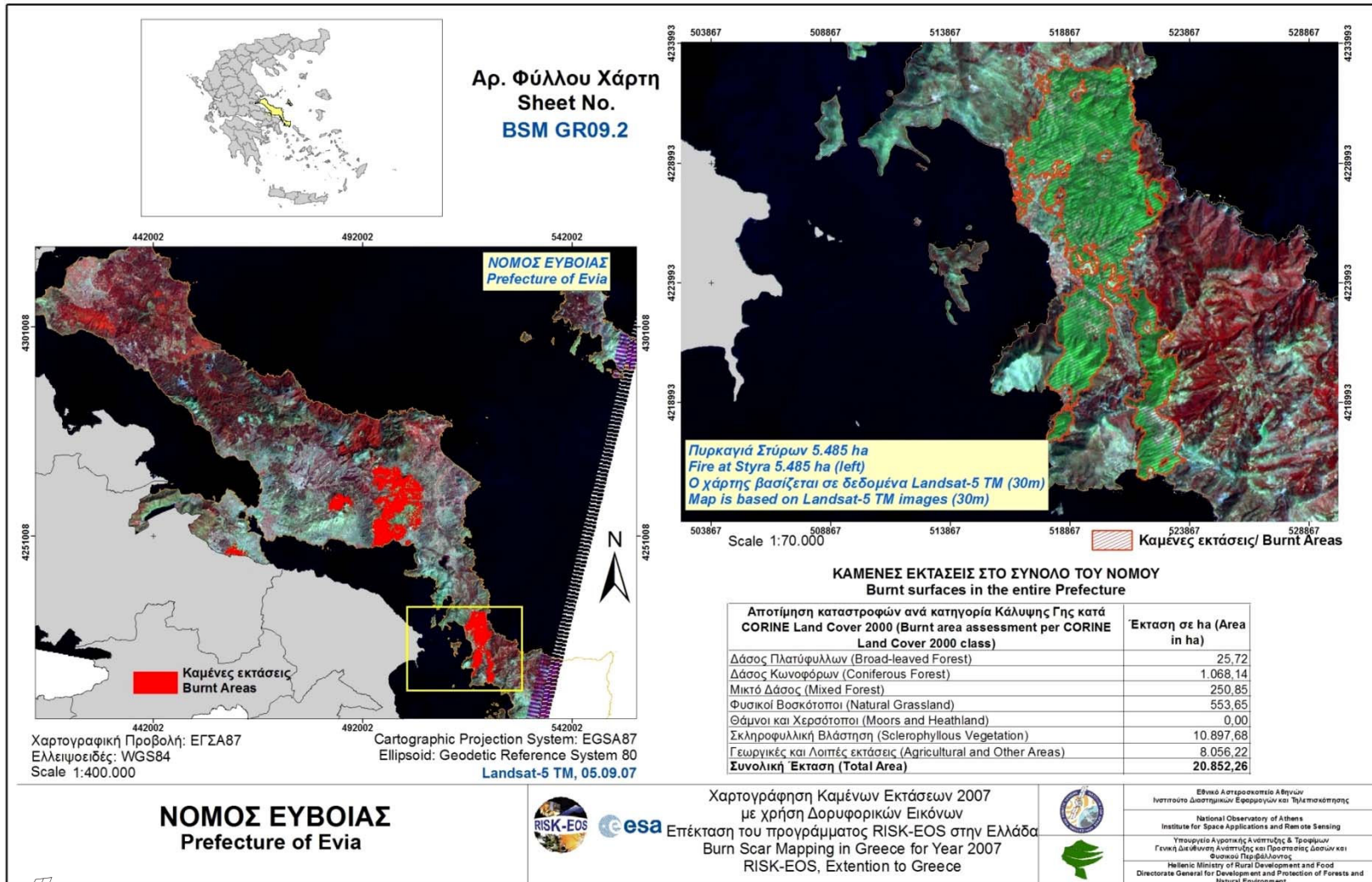
GENERATED IN
RISK-EOS/
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PROJECT

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GMES ERS portfolio in Greece

Fire Damage Assessment & GIS Thematic Products



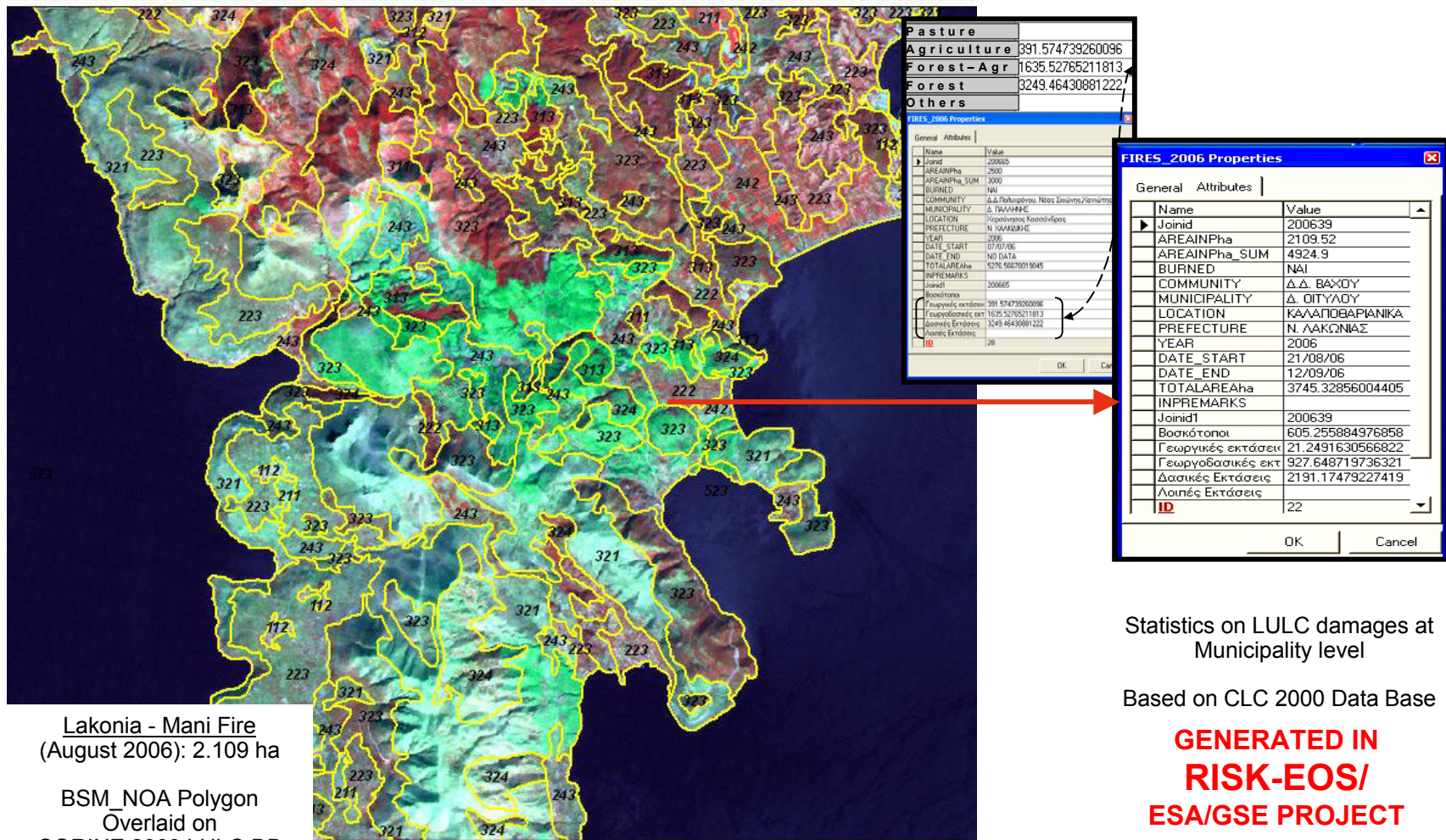
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GMES ERS portfolio in Greece

Fire Damage Assessment & GIS Thematic Products



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GMES ERS portfolio in Greece

Special Edition

Report on RISK-EOS extension to Greece

Common Issue: NOA & Ministry of Rural Development and Food

Under the auspices of the Greek Ministry of Rural Development and Food



RISK EOS, Extension to Greece GEOINFORMATION SERVICES FOR NATURAL DISASTERS



Εθνικό Αστεροσκοπείο Αθηνών – Ινστ. Διαστημικών Εφαρμογών και Τηλεπισκόπησης
National Observatory of Athens – Inst. for Space Applications and Remote Sensing

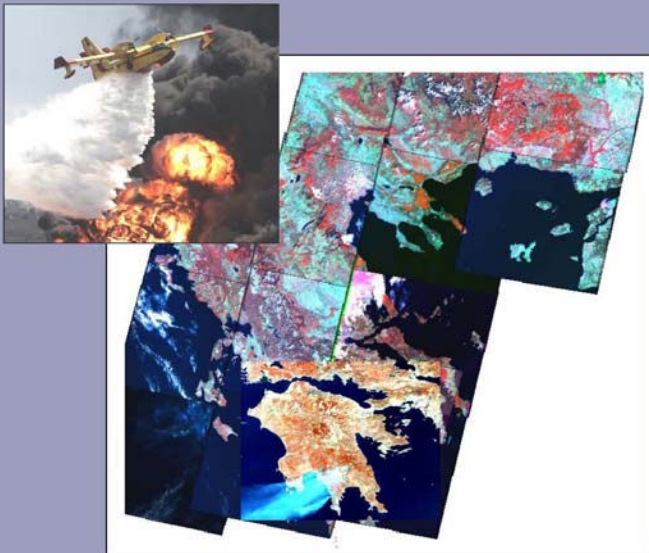


Υπουργείο Αγροτικής Ανάπτυξης και Τροφίμων- Γενική Διεύθυνση Δασών
Ministry of Rural Development and Foods - Directorate General of Forests

- ▶ Αποτίμηση καμένων εκτάσεων 2007 στο σύνολο της ελληνικής επικράτειας με χρήση δορυφορικών δεδομένων
- ▶ Assessment of 2007 burnt areas in Greece using satellite data

Έτος αναφοράς / Reference year: 2007

Δορυφορικά δεδομένα / Satellite data: Landsat 5 TM, SPOT XS, FORMOSAT 2 (P+XS)



THE RISK-EOS PROGRAMME (GMES-Service Element/ESA)

In the framework of the GMES-SE programme (Global Monitoring for Environment and Security/ Service Element), the European Space Agency (ESA), finance *RISK-EOS*, which provides services that respond to crisis situations engendered by natural disasters, such as wild fires and floods. These services cover the different stages of a natural disaster, from prevention and timely forecast, to crisis management and damage assessment. The *RISK-EOS* partners are across the participating member states of the European Union. Each partner-provider assumes responsibility for interacting directly with the end-users, according to its specific expertise and with respect to products and services delivered. Direct communication between the providers and the end-users is ensured through personnel permanently assigned to the service to ensure user needs are fulfilled.

THE BSM_NOA SERVICE (Burn Scar Mapping_National Observatory of Athens)

Burned-area mapping (BSM) constitutes one of the basic services of *RISK-EOS*. It aims at assessing damages from wildfires, quantitatively and qualitatively, and at supporting the rehabilitation of the affected areas. The derived maps are produced annually or seasonally (during summer) at various geographical scales, and are provided to those users in Greece, France, Spain, Italy and Portugal who have an institutional role in natural disaster management.

The current report presents the results of burned area mapping in the country. The products, in both vector and in raster format, were delivered to and are utilised today by the following users:

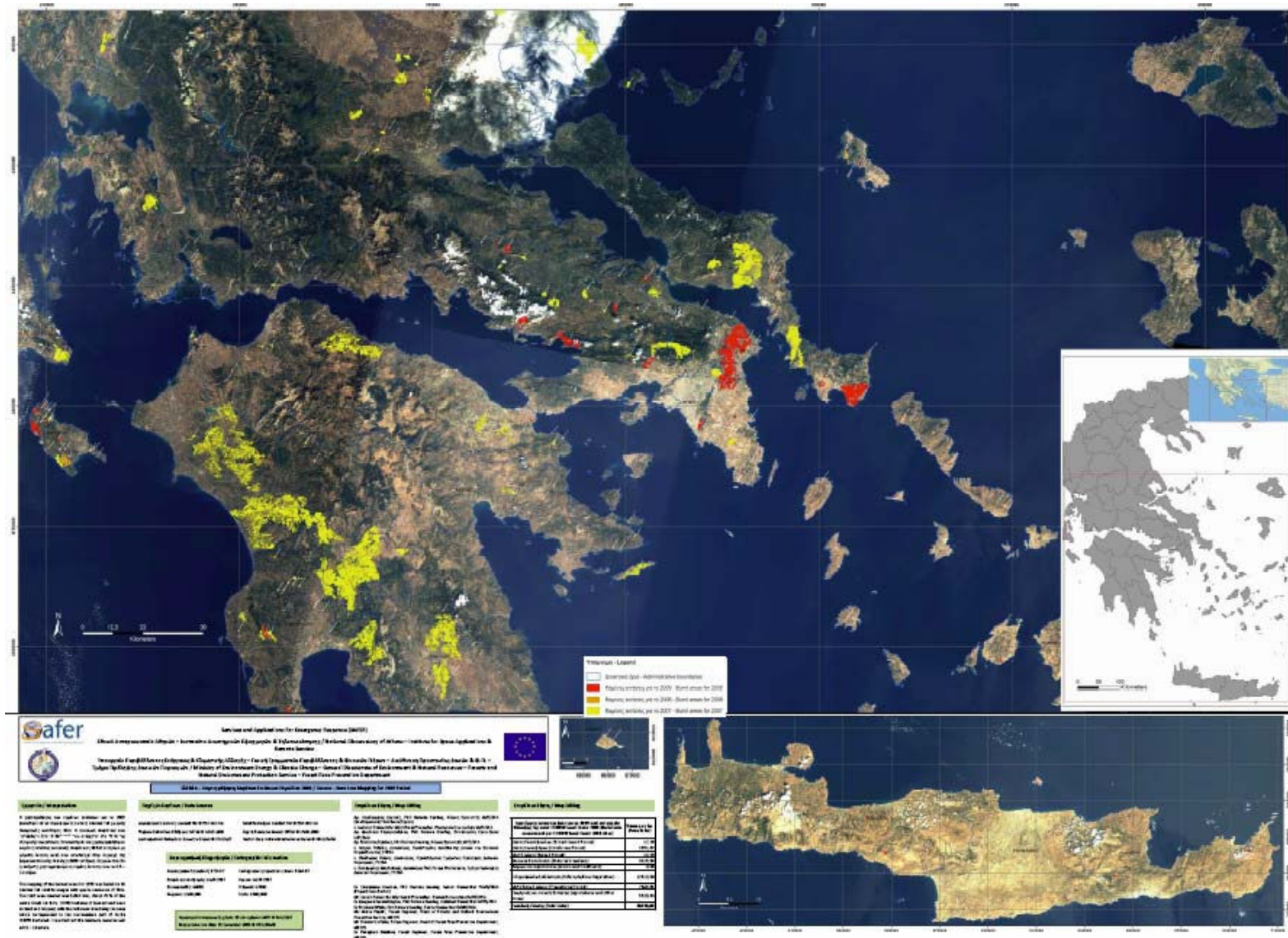
- i. Directorate General of Natural Environment and Forest Development and Protection - Ministry of Rural Development and Foods.
- ii. National Agricultural Research Foundation/ Forest Research Institute.
- iii. Hellenic Centre of Biotopes and Wetlands of the Goulandri Museum of Natural History.
- iv. Region of Peloponnisos (Inspectorate of Forests) and Local Forest Services.
- v. Region of Attiki (Directorate of Rehabilitation of Forests).
- vi. General Secretariat of Civil Protection.

other areas:

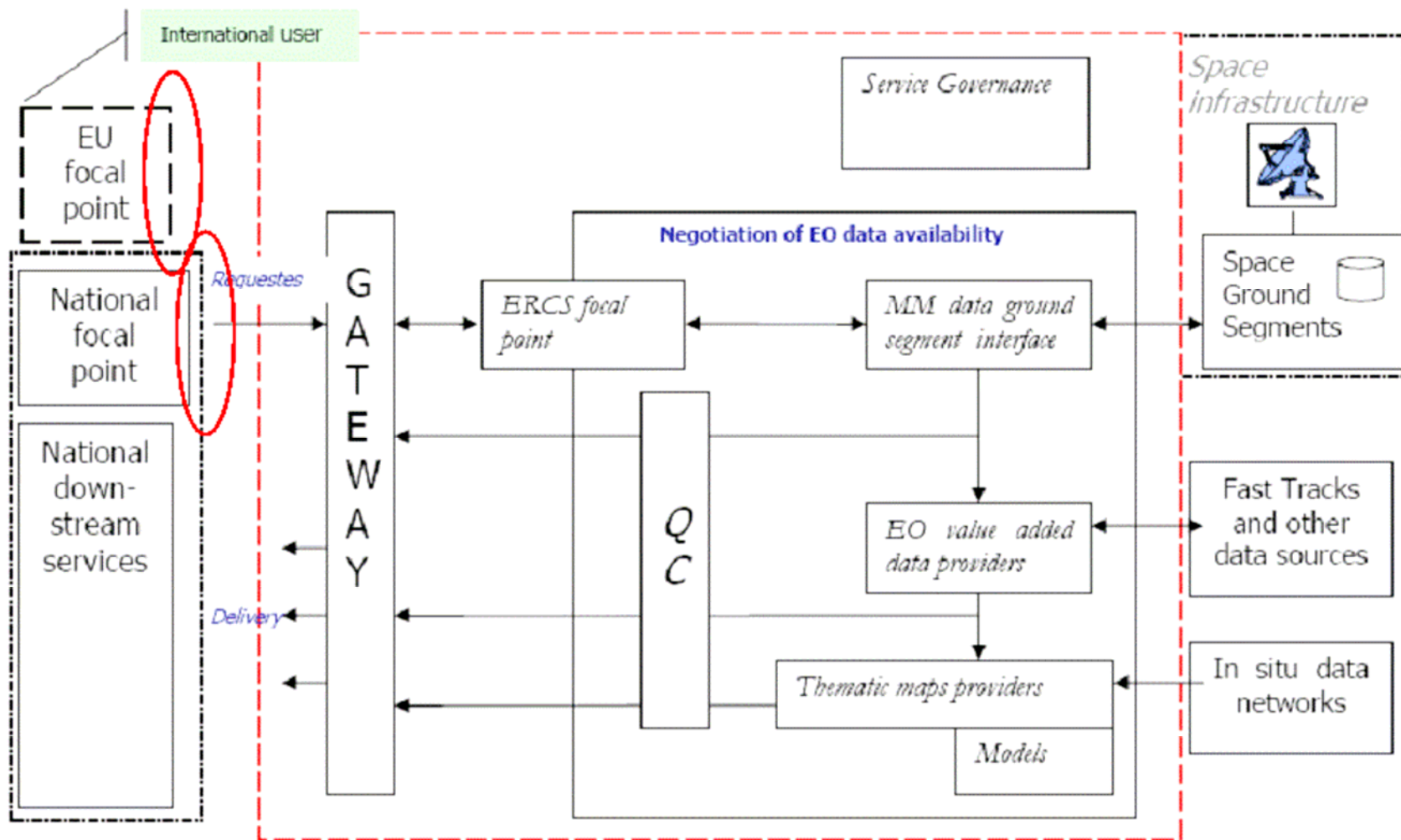
forests' of natural pastures' of open and marsh land, of sclerophyllous vegetation and biotopes as well as estimates of the extent of burned coniferous, broadleaved and mixed 103 000 hectares. The current publication presents the main fire incidents per According to the results of BSM_NOA service the total burned area in Greece in 2007 was

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Special Edition Poster - SAFER 2009



GMES Interfaces within ERS



Emergency Response Core Service

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Operational GMES Services in Emergency Response

Services in support of emergencies & humanitarian aid



forum  2008



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