



Services and Applications For Emergency Response

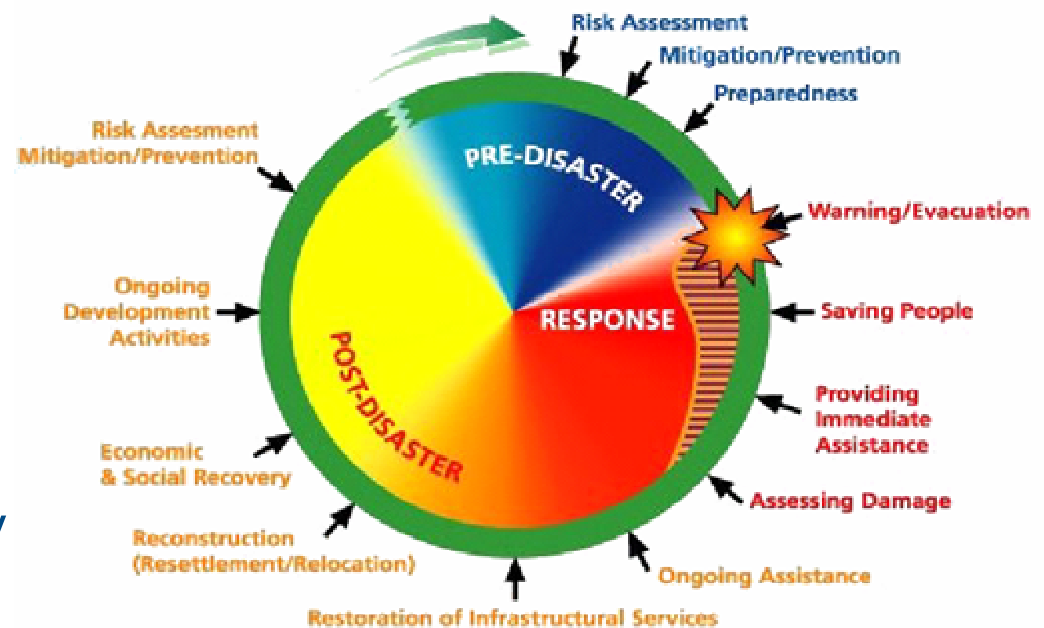
**SAFER and GMES Emergency Response Core Service:
One step closer to full-scale operational deployment**

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Infoterra GmbH



SAFER project rationale

-  **Objective** - implement and validate a pre-operational version of the GMES Emergency Response Core Service (ERCS), reinforcing the European capacity to respond to such challenges.
-  **First priority** - focus on rapid mapping during the response phase
-  **Second priority** - enrich with a wider set of thematic products.
-  In the **long term**, ERCS will provide an operational capacity in Europe and worldwide, with benefits in terms of better quality of life, better health, and increased safety.



SAFER : key figures

- 🌐 EC/FP7 project – GMES program
- 🌐 3 years project
- 🌐 Budget: 40 M€. EC Grant: 27 M€
- 🌐 54 partners from 16 countries:
 - 29 private organisations (18 SME)
 - 25 public organisations
- 🌐 Coordinated by Infoterra France
- 🌐 Service management board: Infoterra, DLR, e-GEOS (TPZ)
- 🌐 Contract signed in December 2008 - Kick-off in January 2009



SAFER ambitions and expected results



A user-driven operational service:

- SLA (service level agreements) and quality assurance
- Operational validation by the users



Rapid mapping with priority on quick information delivery:

- Assessment maps available in less than 24 hours
- Reference maps (prepared in advance) and available in less than 6 hours
- Anticipation of new acquisitions, based on events monitoring



More complete information:

- Progressive enrichment with thematic products and services
- Prevention and post-crisis phases

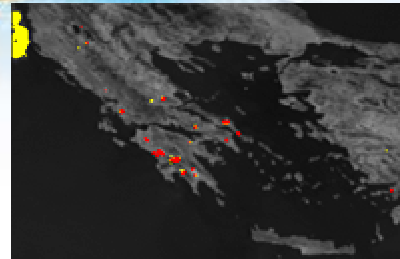


An end-to-end service:

- Single point of contact available 24/7 and service gateway
- Geo-information available on the field

Four main types of products

Early warning and
preparedness
information



SEVIRI MIR 070825_0945 UTC



Reference maps
(6 hours)

**Rapid
Mapping**

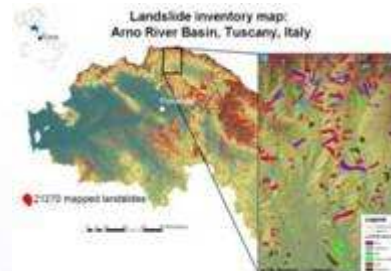
Assessment maps
(24 hours)



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



Thematic maps



March 2010

SAFER – Operational model



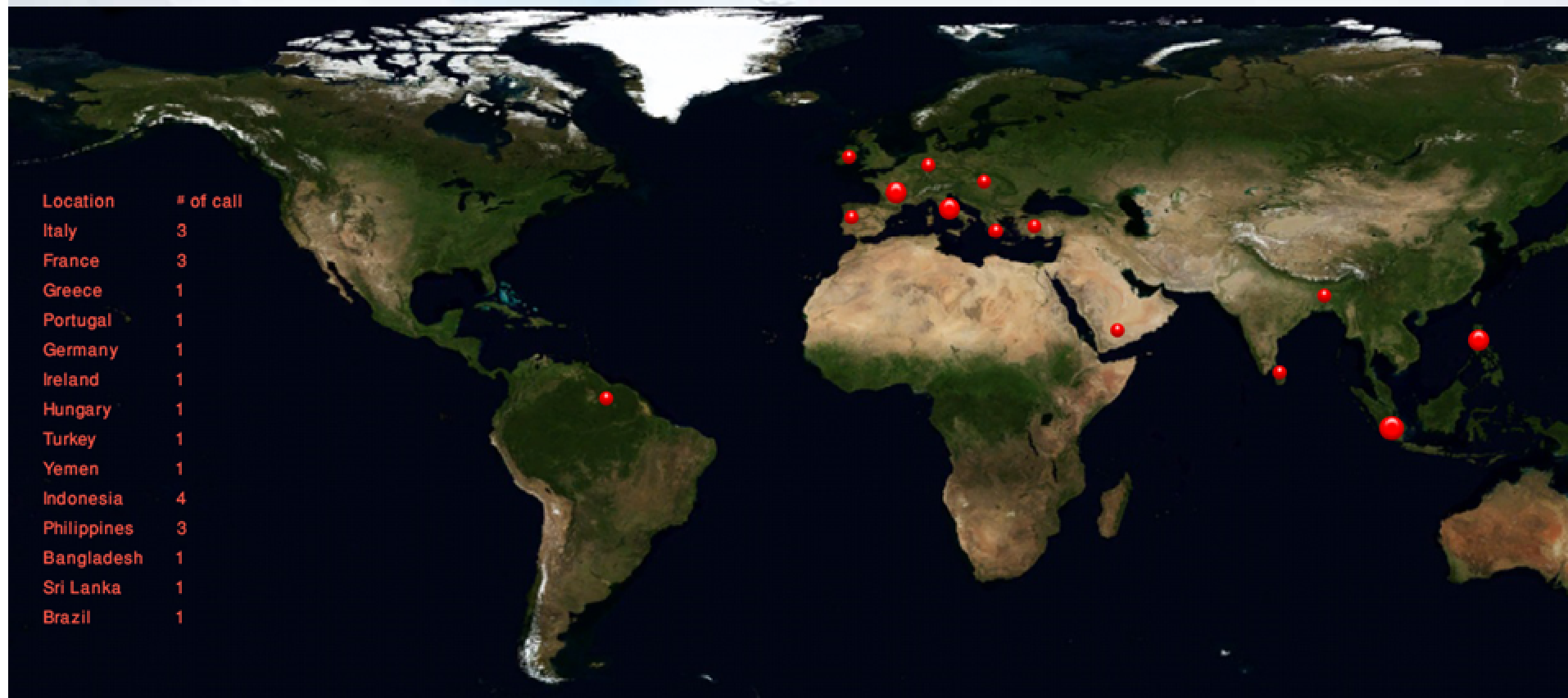
Emergency – Operational achievements 1st year

Emergency Mapping

Call ID	Activation ID	Triggering	Closure	Operation Type	Event	Country/Region	SAFER User
01	01	06/04/09	08/04/09	Auto Activation	EQ	Italy/Abruzzo	ITF
02	02	20/04/09	22/04/09	Exercise	EQ/LS/FL	France/Lourdes	DDSC
03	03	11/05/09	20/05/09	Auto Activation	FL	Brazil	DLR
04	04	27/05/09	08/06/09	Charter Call 256	FL	Bangladesh	WFP
05	05	23/07/09	04/08/09	Activation	FR	France / Marseille	DSC
06a	06a	25/07/09	04/08/09	Activation	FR	France / Corse	DSC
06b	06b	25/07/09	04/08/09	Activation	FR	Italy / Sardinia	DPC
07	07	23/08/09	02/09/09	Charter Call 262	FR	Greece	Greek CP
08	08	01/09/09	11/09/09	Activation	FR	Portugal	MIC + Portuguese CP
09	09	08/09/09	11/09/09	Auto Activation	EQ	Indonesia	DLR
10	10	09/09/09	15/09/09	Activation	FR	Italy	DPC
11	11	10/09/09	15/09/09	Charter Call 268	FL	Turkey	Turkish CP
12	12	16/09/09	17/09/09	Exercise	FL	Germany	BBK
13	13	27/09/09	05/10/09	Charter Call 271/275	FL	Philippines/Manila	WFP/UN OCHA
14	rejected	29/09/09		Charter Call 274	EQ	Sumatra/Padang	WFP
15	14	30/09/09	30/10/09	Activation	EQ	Sumatra/Pariaman	WFP/RELEX/MIC
16	15	01/10/09	07/10/09	Activation	ST	Philippines	WFP
17	16	02/10/09	30/10/09	Activation	EQ	Sumatra/Sungai	BBK
18	17	15/10/09	23/10/09	Activation	IDP	Yemen	UNHCR
19	18	18/10/09	26/10/09	Activation	ST	Philippines	WFP
20	19	29/10/09	04/11/09	Activation	ST	Philippines	WFP
21	20	29/10/09	05/11/09	Exercise	Other	Hungary	NDGDM
22	21	19/11/09	24/11/09	Activation	FL	Sri Lanka	WFP
23	22	30/11/09	7/12/09	Activation	FL	Ireland	Office of Public Work

- 23 call , 22 operations (Technical Annex = 30 activations for Year 1)
- 1 Call rejected
- 13 activations, 4 cooperation with the Charter, 3 auto activations, 2 Exercises
- 4 activations were in anticipation mode (typhoons in the Philippines)

Emergency – Geographic Location



 Concentration in Europe and SE Asia

 Europe = 10 activations

 Rest of the World = 12 activation

SAFER @ GMES WS Sofia, March 2010

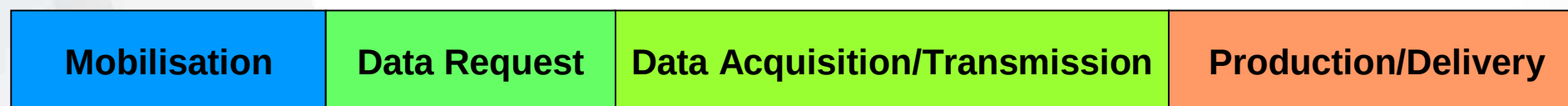
Emergency – Service performance

 Average values based on 13 “real” activations

User's Request

1st Products Delivery

Emergency Activation cycle
4 Days



3.5 hours

3.5 hour

84 hours (3.5 Days)

6 hours

SRF reception
Consolidation of
user's requirements
Organization of the
service
SPERF compilation
Notification to
Registered users
Notification to EC
and Partners

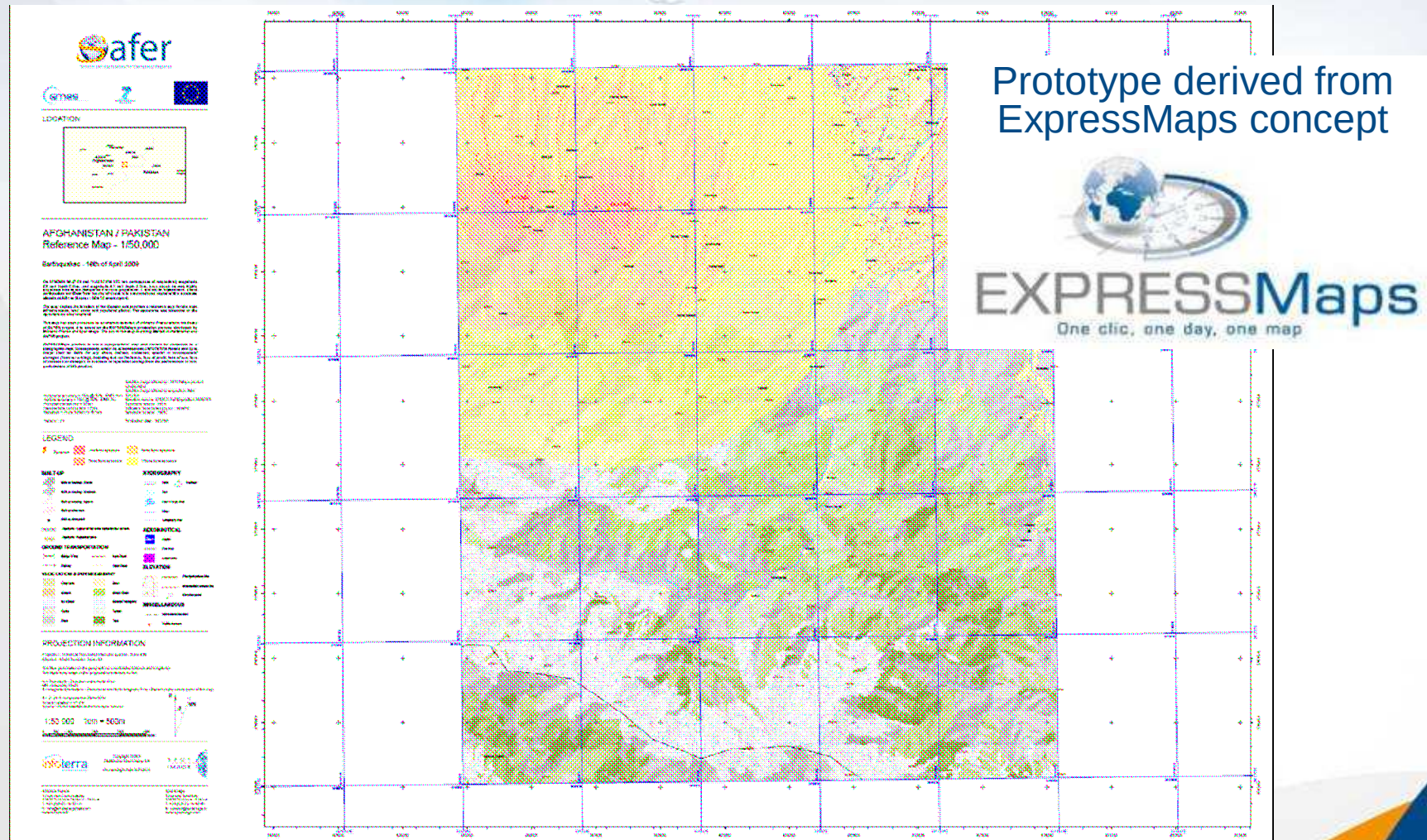
SPERF reception
Confirmation of
ESA/GEST
activation
Preliminary
information on
GCMs contacted
("Satellite Resource
Table")

Identification of GMES
Contributing Missions
Acquisition of scenes
Transmission to
Ground Station
EO data production
Transmission to SP

Reception of crisis & archive
EO data
Extraction of value added
information
Generation of product
Delivery to Users

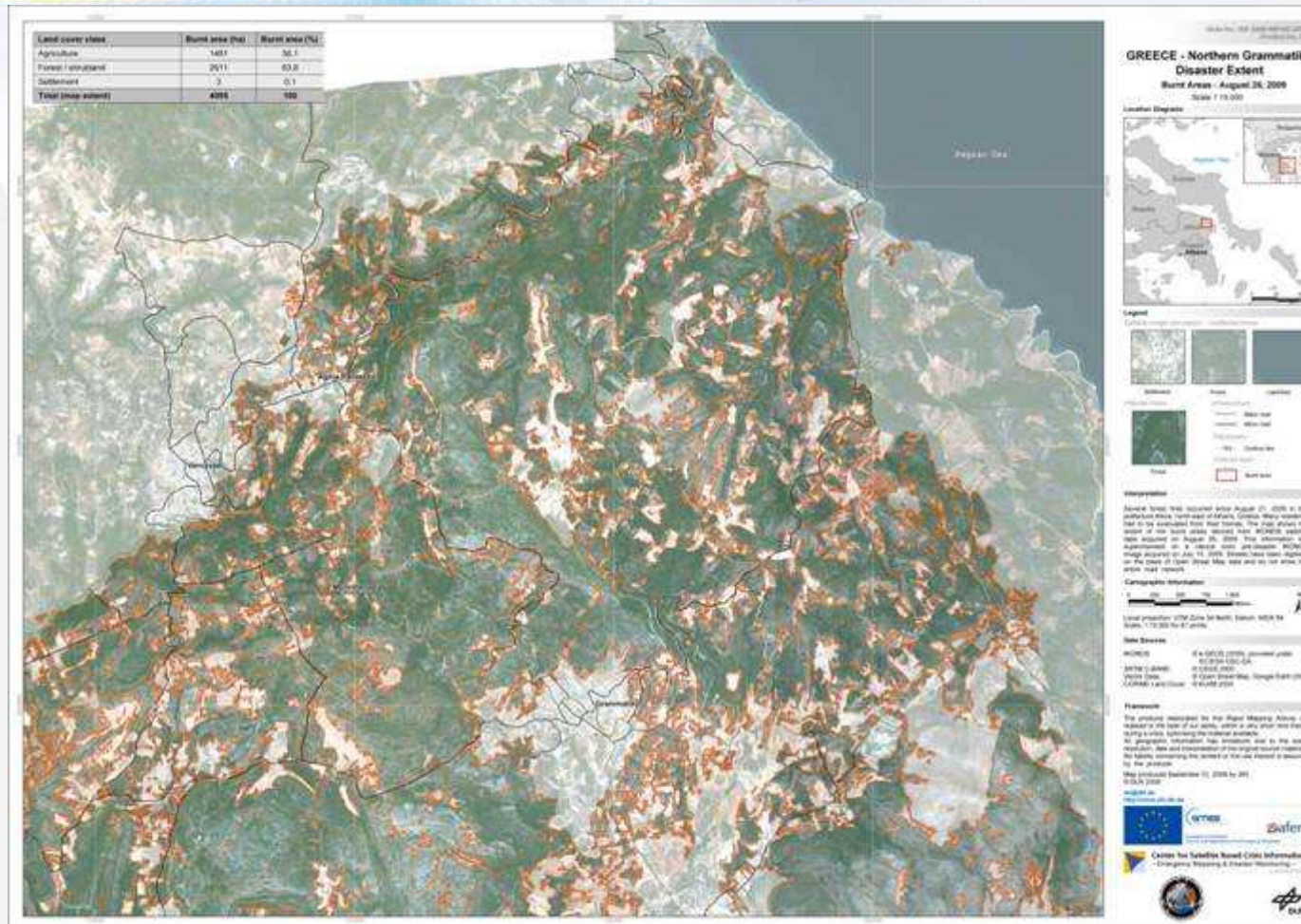
Afghanistan earthquake – April 2009

Reference map showing the epicenters



Forest fires in Greece – August 2009

Northern Grammatiko – 1/15000



 Disaster extent map

Flash flood in Turkey – September 2009

Istanbul – 1/55000

 Flooded area

Thematic Applications – Flood Example

- **Ambition - Enrich with more complete information:**
 - Progressive enrichment with thematic products and services
 - Prevention and post-crisis phases
- **Evolution of thematic applications second pillar of SAFER - floods, forest fires, earthquakes and landslides**
- **Flood activities focus on Assets Mapping and Flood Risk Management**
- **“Flood Team”**
 - Eurosense BE
 - Geomer DE
 - Indra ES
 - Infoterra DE
 - Infoterra F
 - ReSAC BG
 - ROSA RO (+ METEO Romania)

Why floods?

 **Due to statistics floods most frequent disasters**

 **The Floods Directive Scoreboard**

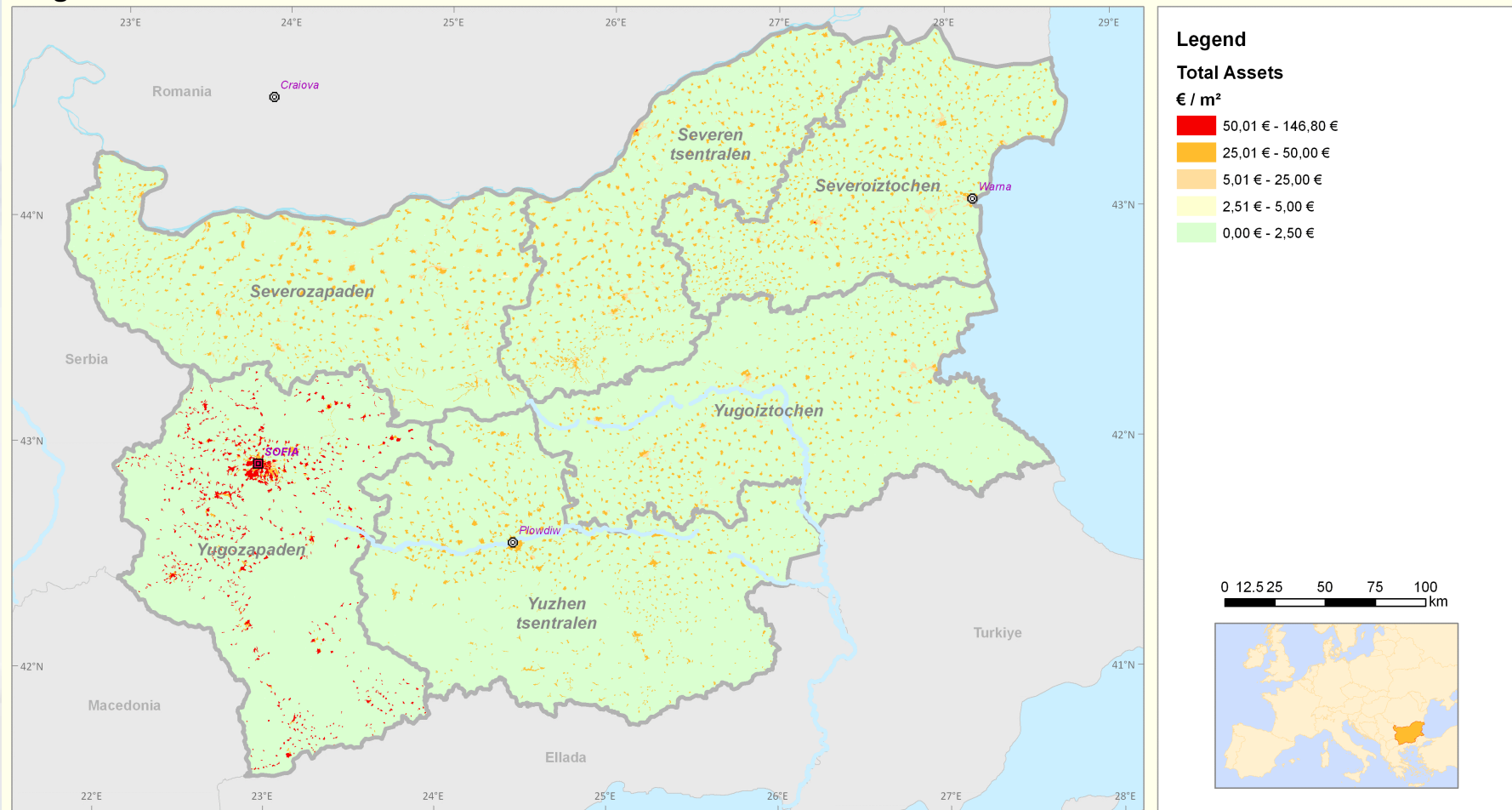
Country	Notification transposition (Art. 17, deadline 26.11.2009)	Competent authorities /Units of management (Art. 3, deadline notification 26.5.2010)*	Preliminary Flood Risk Assessment (Art. 4&5, deadline reporting 22.3.2012)	Flood Hazard & Flood Risk Maps (Art. 6, deadline reporting 22.3.2014)	Flood Risk Management Plans (Art 7, deadline reporting 22.3.2016)
Austria					
Belgium					
Bulgaria					
Cyprus					
Czech Republic					
Denmark					
Estonia					
Finland					
France					
Germany					
Greece					
Hungary					
Ireland					
Italy					
Latvia					
Lithuania					
Luxembourg					
Malta					
Netherlands					

Asset Maps

- 🌐 Asset Maps = actual land cover (supplemented by street network data) + socio-economic data
- 🌐 3 levels
 - Basic European Assets Map (BEAM)
 - High Resolution Assets Map (HiRAM)
 - Assets Map PLUS (AM+)
- 🌐 Objective – to qualify BEAM and HiRAM as European Core Service

Bulgaria - BEAM product

Bulgaria



Production volume

BEAM:

- RO, BG, ES and FR

HiRAM

- BG: Rousse, Sofia
- RO: Gorj and Bacau Counties
- ES: Tarragona, Huelva, Cartagena, Algeciras

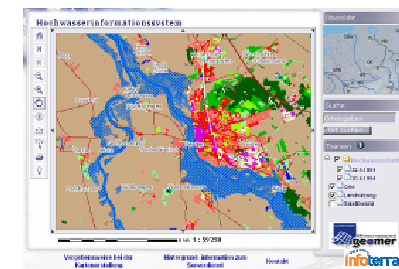
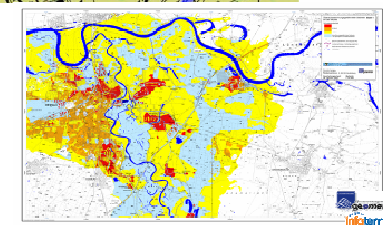
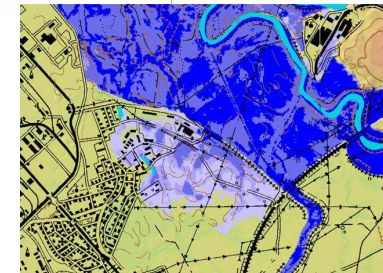
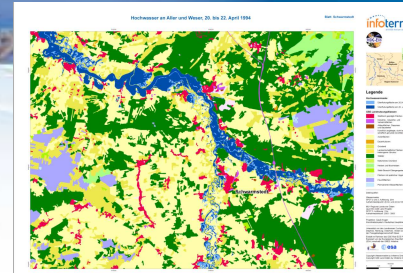
AM+

- BG: Rousse, Sofia
- RO: Timisoara, Saucesti
- ES: Tarragona, Huelva, Cartagena, Algeciras

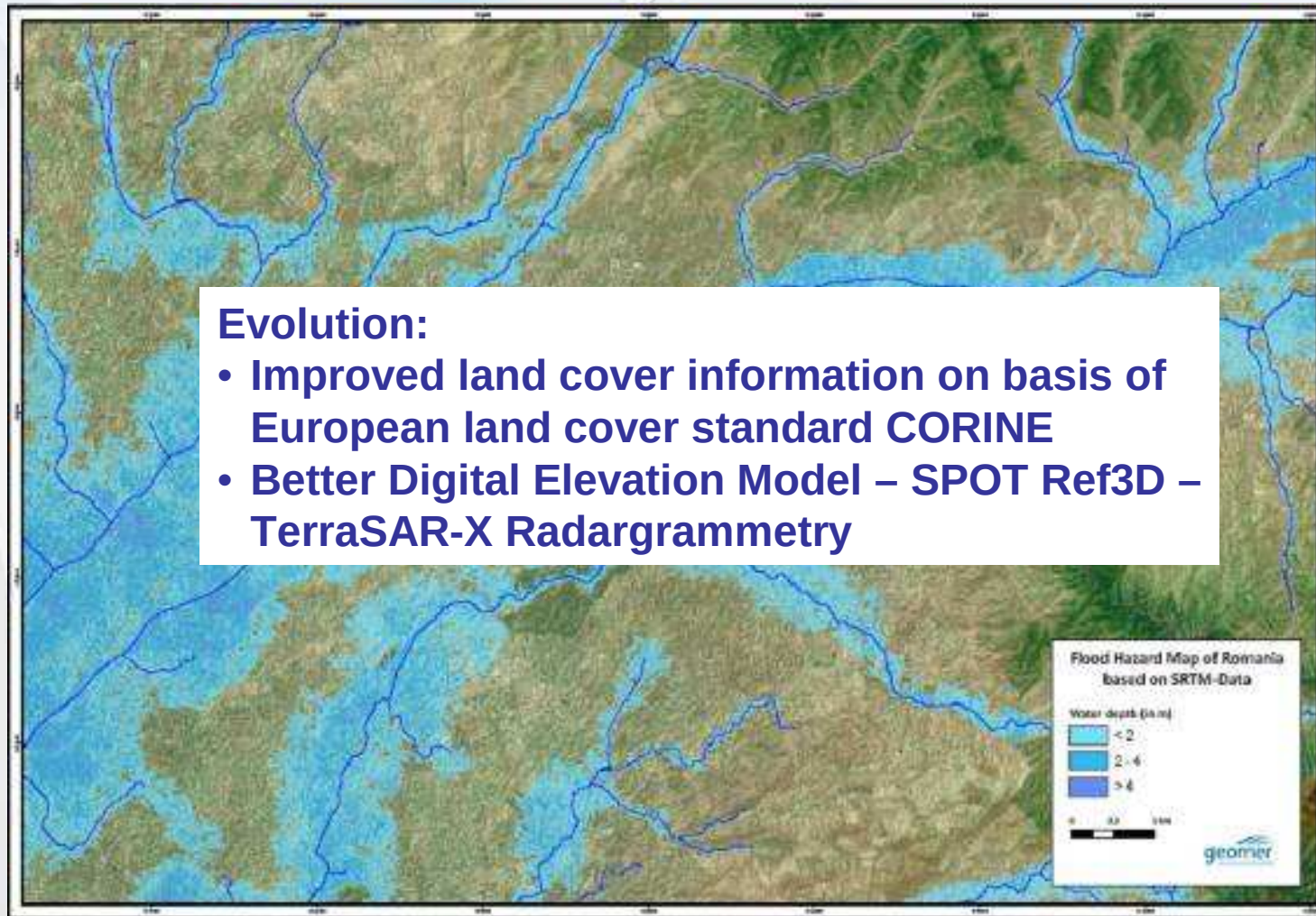
Flood Risk Management - product portfolio

-  **Past Flood Event Map**
-  **Flood Hazard Map**
-  **Flood Risk Map**
-  **Flood Information System**

-  **Overall objectives - qualify**
 - **Past Flood Event Map**
 - **European Flood Hazard Map**
 - **European Flood Risk Map**
-  **as European Core Services**



European Flood Hazard Map, Timisoara (Draft)



Production volume

RO:

- Past flood event map, hazard & risk map
 - ✓ Pruth River watershed – Radauti region
 - ✓ Timis River watershed – Timis County
 - ✓ Siret River watershed – Bacau County

BG:

- Past flood event map, hazard & risk map
 - ✓ Lom River watershed – Rousse region
 - ✓ Iskar River watershed – Sofia region

ES:

- “Only” Past flood event map: Test site still under discussion

 All products to be implemented into www.floodrisk.eu

Further questions ? Contact us !

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