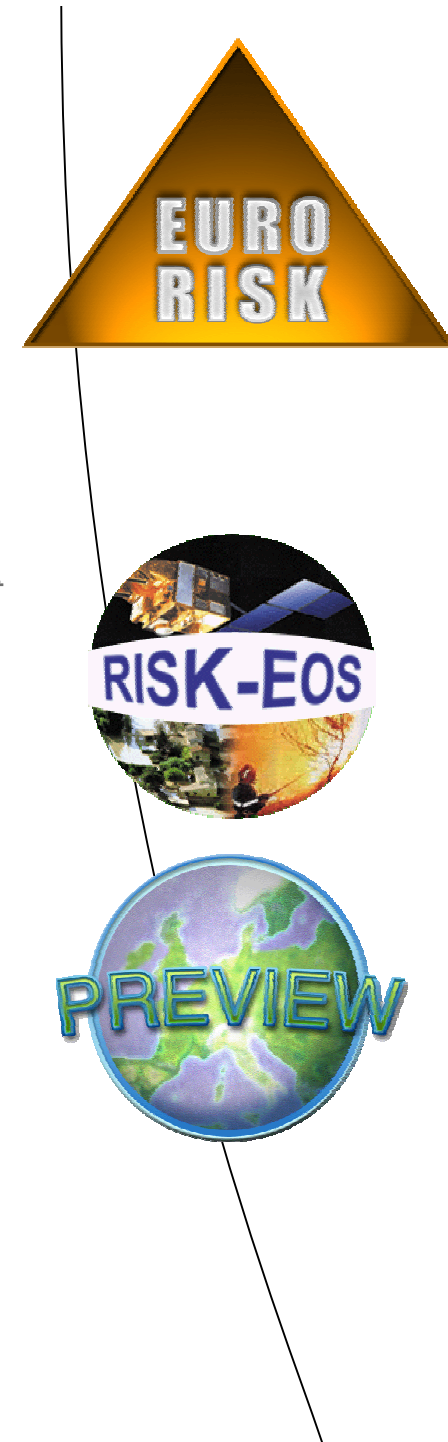


# GMES – EURORISK

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**Geo-information services for natural  
and man-made risks management**



8/11/2004



A European scale approach for developing, delivering and operationally exploiting new information services for the management of Natural and Industrial Risks to enhance security of peoples and goods

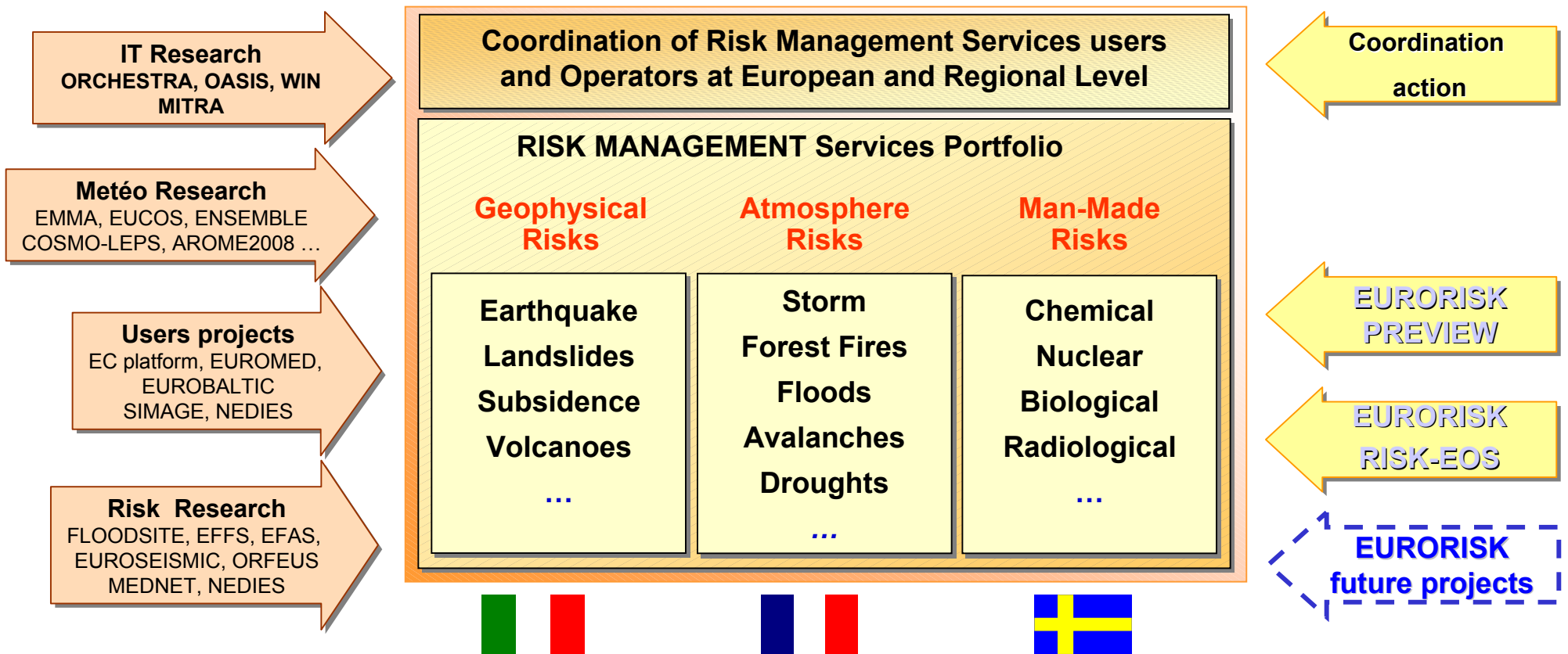
- All types of Risks : atmospheric, geophysical , industrial
- All phases of the risks cycle : prevention, early warning, crisis, recovery
- New services for the operational actors of the risk chain : Civil Protection Units, Land planning entities, early warning operators, local authorities,...
- Addressing major European needs at local and global scales , adapted to the operational national practises/ ways to proceed
- From observed data (in-situ,EO,Airborne,) up to final information entering in the end-users decisional systems

An approach associating the European major operational risk chain actors , the scientists, the operators and the industry to benefit from all synergies : field experience and evaluation,best research results, industrialisation and guarantee of services quality



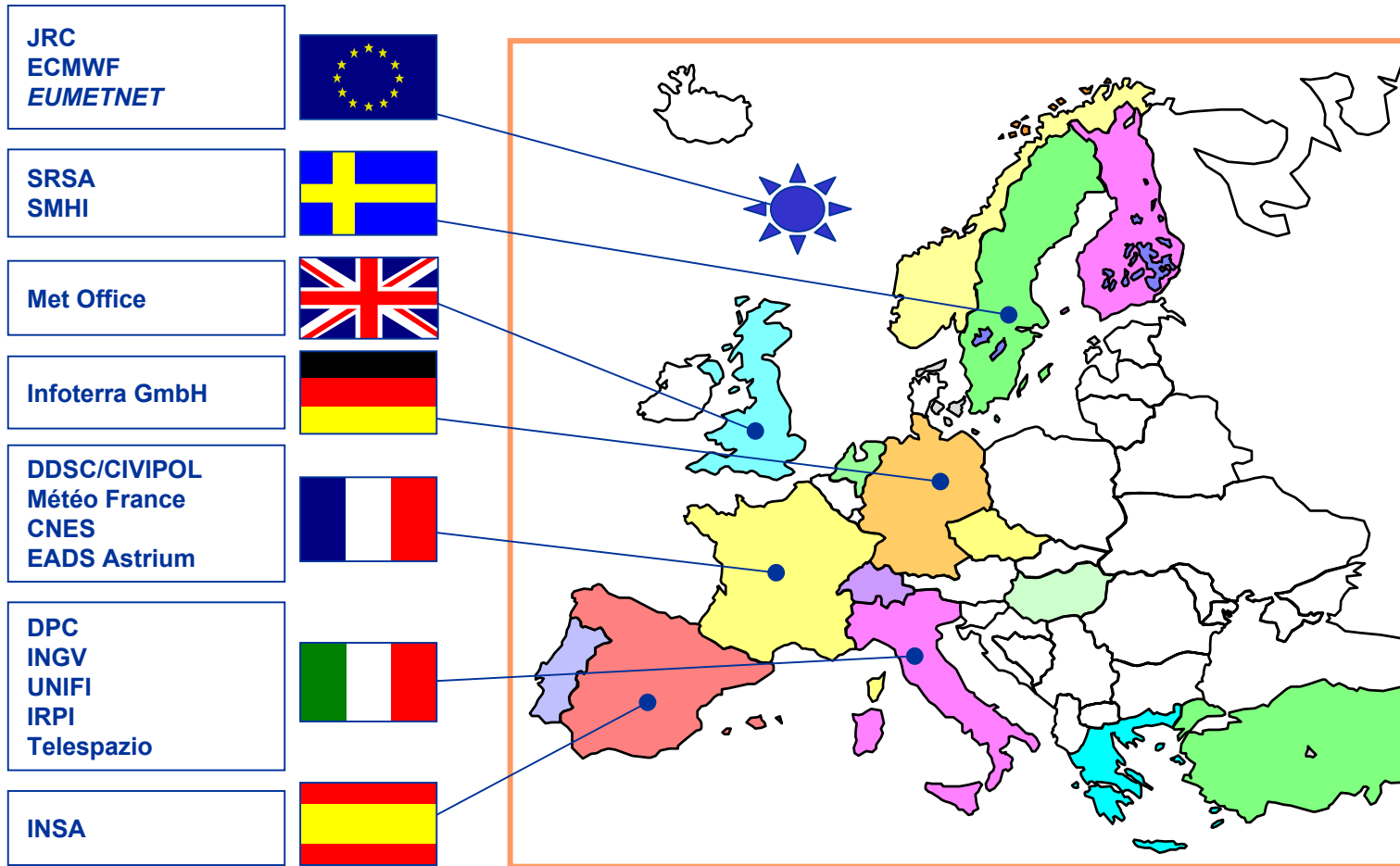
# EURORISK organisation of activities , projects

- a **staged development** of the new services making maximum benefits of existing results & initiatives
- Developments organised in **three clusters** : geophysical, atmospheric, man-made
- Services validation though **pre-operational platforms**
- a progressive **operational deployment and exploitation** à la carte per Country of services when they pass the user validation





# The EURORISK Consortium



A EURORISK consortium on 15 Countries associating Users, Scientists, Industry, Operators under the piloting of EUMETNET (European Metéo-offices), the European Civil Protection Units, EADS Astrium . Open to complementary initiatives , to new comers.

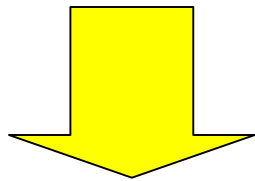
# EURORISK : 2 complementary projects



## ➤ Development of new geo-information services for risks management :

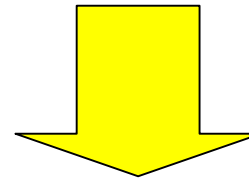
RISK-EOS (ESA) : 2003-2004 + 2005-2007

- Floods management
- Forest Fires management
- *Mature solutions, operational in short-term*



PREVIEW (EC) : 2005-2008

- More advanced services for flood and fire management
- Additional risks : storms, landslides, volcanic, seismic, industrial



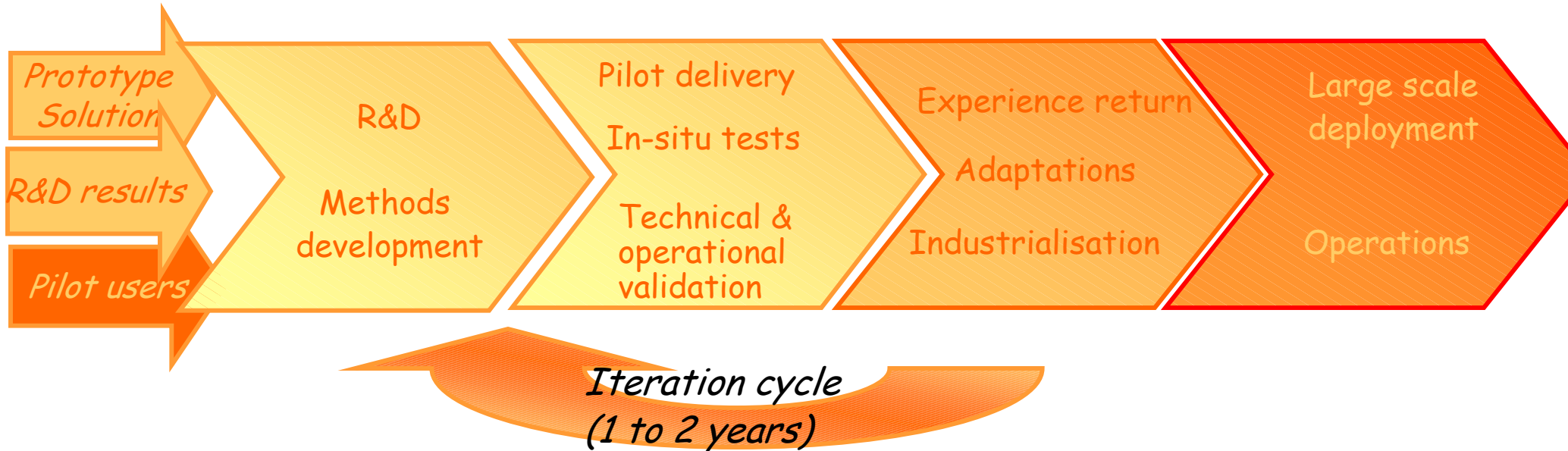
## ➤ Set-up of an operational and sustainable European service capacity

serving the needs of the institutions in charge of risks management at European, National, and Regional levels



# The EURORISK iterative approach

1. Service development and validation : A method based on iterative improvement



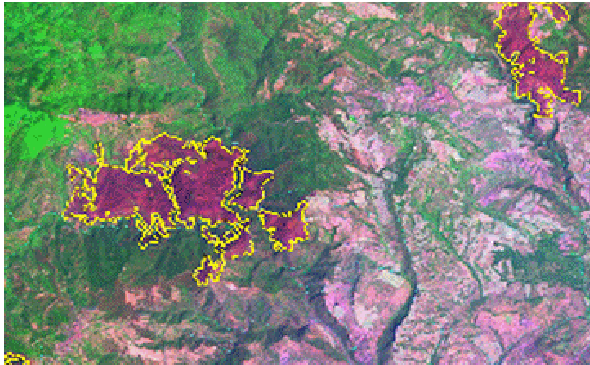
2. Central Engineering :

- Technical coherence
- Common infrastructures
- Development and deployment plan
- Set-up of a sustainable and open service partnership organisation



# RISK-EOS « precursor » services

4 services, developed in the frame of RISK-EOS, are actually delivered in different European regions



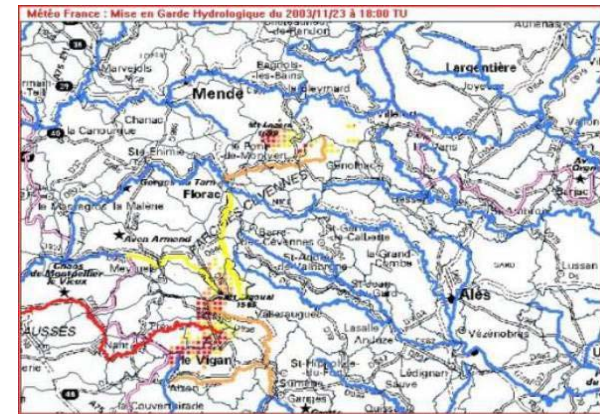
Burnt scar mapping: high resolution & seasonal mapping of burnt scar areas due to forest fires (France, Spain, Italy)



Assets mapping : High & very high resolution mapping of habitat evolution and infrastructures within zones prone to risk (France)



Flood risk analysis : Flood risk mapping and evaluation of potential losses, based on historical data and simulations (Germany, Sweden)



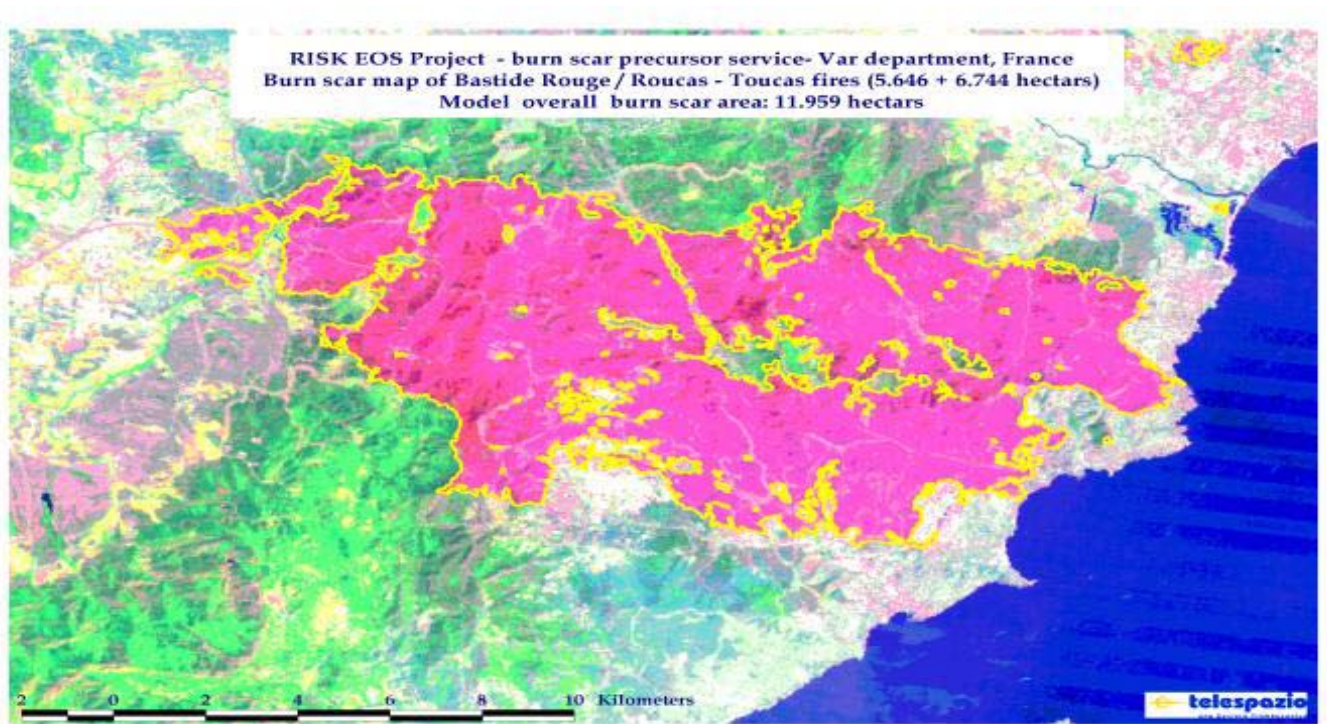
Flash flood awareness / early warning: Real time service for flash flood anticipation (France, Italy)

# RISK-EOS « precursor » services

## Example : Burnt scar mapping



- Seasonal mapping of the areas burnt by forest fires
- Perimeter precision 60m
- Minimum size of detected fires = 2 ha



Burnt scar detailed map & data  
Var Department (France) – Bastide Rouge  
Large fire in 2003 approx 12000 hectares



Italy (Marche & Puglia regions)



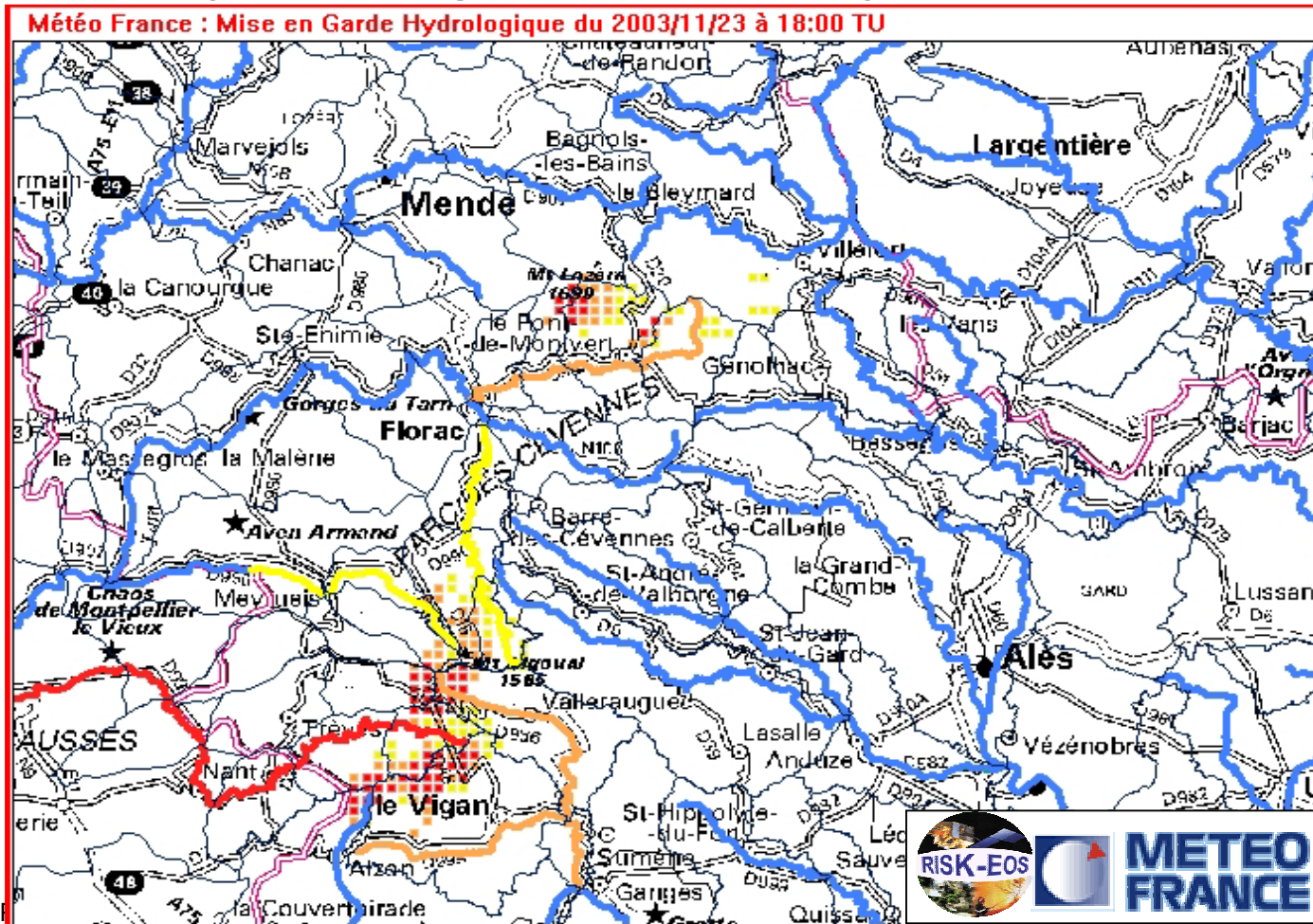


# RISK-EOS « precursor » services

## Example : Flash Flood Awareness / Early warning



- Flash flood early warning based on real-time precipitation radars & hydrological models
- Real-time risk map updated every 1 hour, 1 km<sup>2</sup> resolution
- Rapid deployment on large portions of territory



*Example: flood event 22-23/11/2003*



**ENTENTE region  
(11 departments)**



**PIEMONTE region**

# Targeted Service portfolio

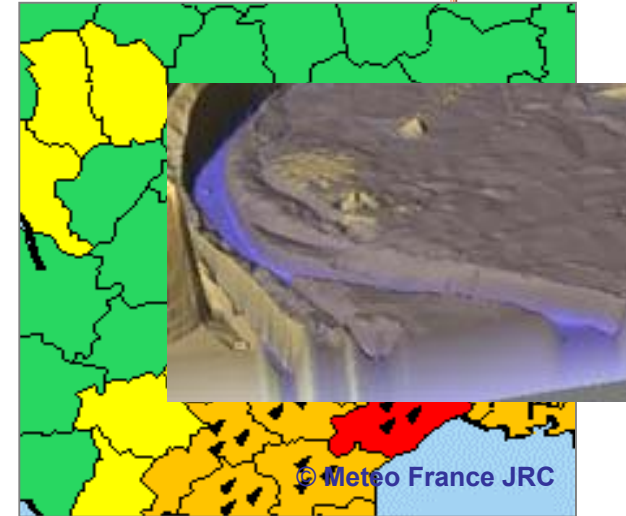
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# Services for atmospheric risks

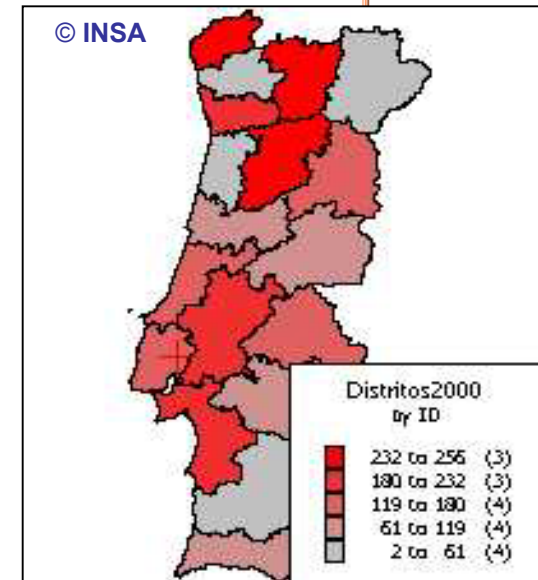
Flood forecasting from 0 to 10 days  
International to small Basins  
North & South flood typologies



Windstorms risk mapping  
Windstorm forecasting



Fuel parameters mapping  
High-resolution fire risk indexes  
Fires monitoring using MR satellites  
Propagation forecasting  
Fire damage assessment



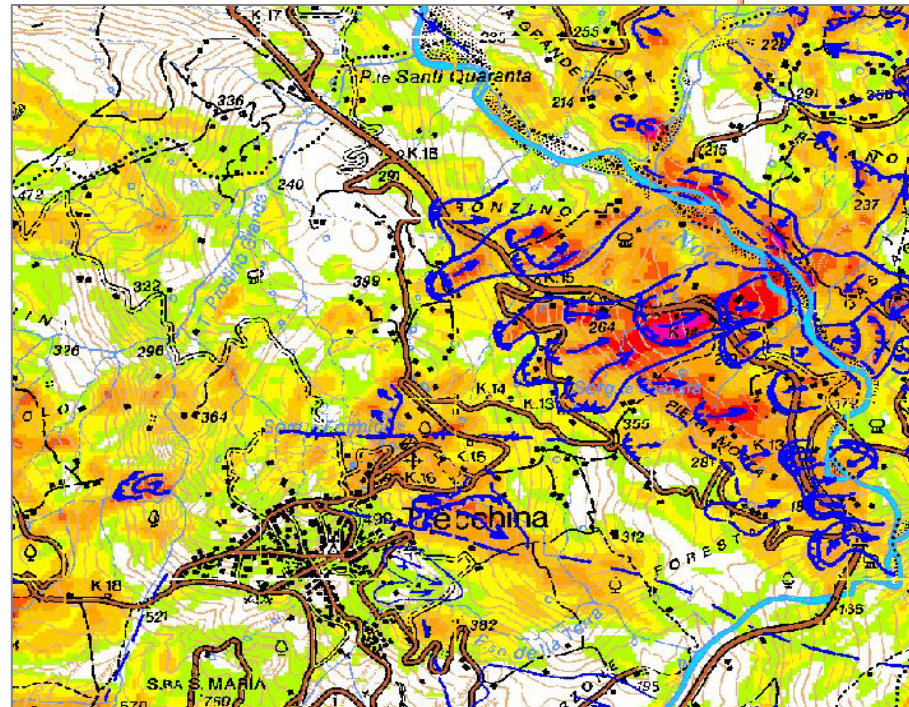
# Services for geophysical risks

**Earthquake monitoring and damage assessment**

**Volcanic monitoring and damage assessment**

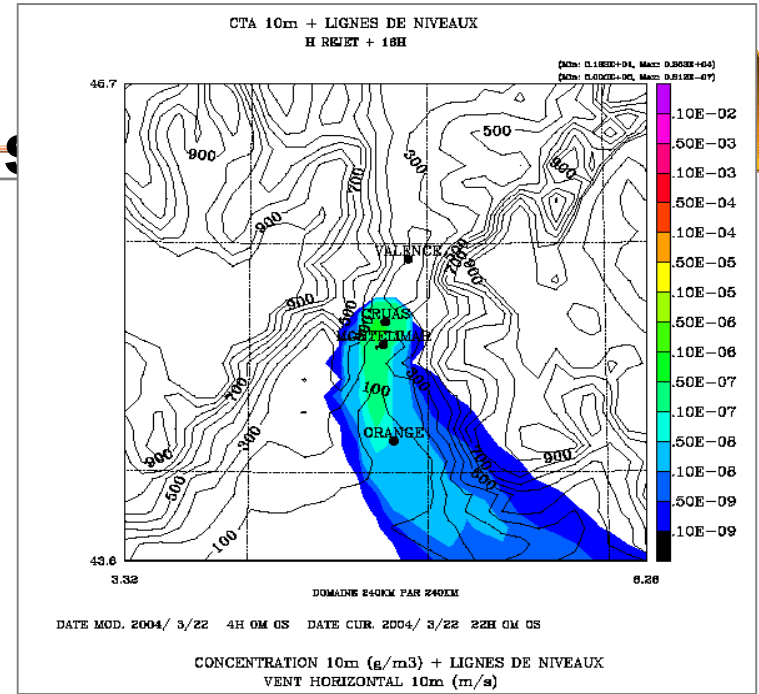
**Landslides – monitoring of slow, deep-seated ground motions**

**Landslides forecasting**



# Services for man-made risks

- Pollution propagation forecasting
- Risk mapping
- Decision support for man-made risks



# General services

- Assets Mapping
- Rapid disaster mapping & damage assessment
- Damage scale & damage intensity data collection

