



14 May 2008

The Italian Civil Protection Organization and tasks

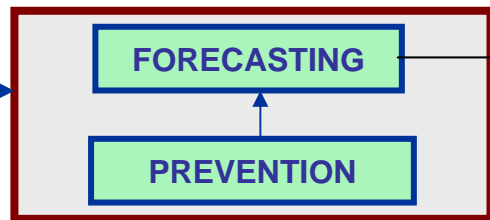
By Roberto SORANI

CYCLOPS Project Manager

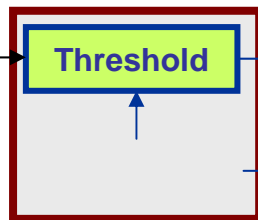
FUNCTIONAL SCHEME OF CIVIL PROTECTION AUTHORITY



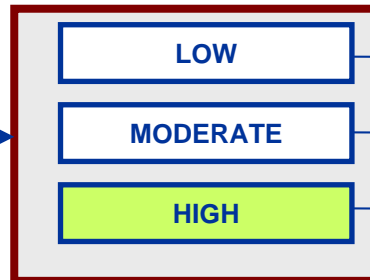
BEFORE the event occurs



Zona di allertamento



Level of criticism



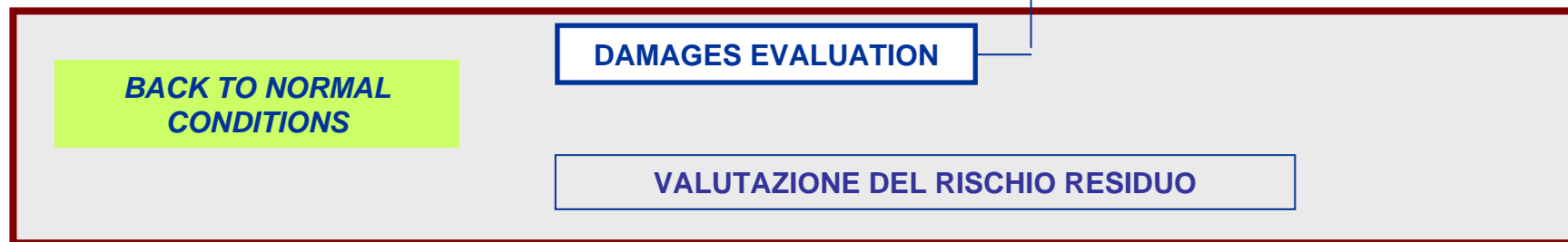
AT THE START OF CRISIS



IL PIANO EMERGENZIALE E LE SUE FASI

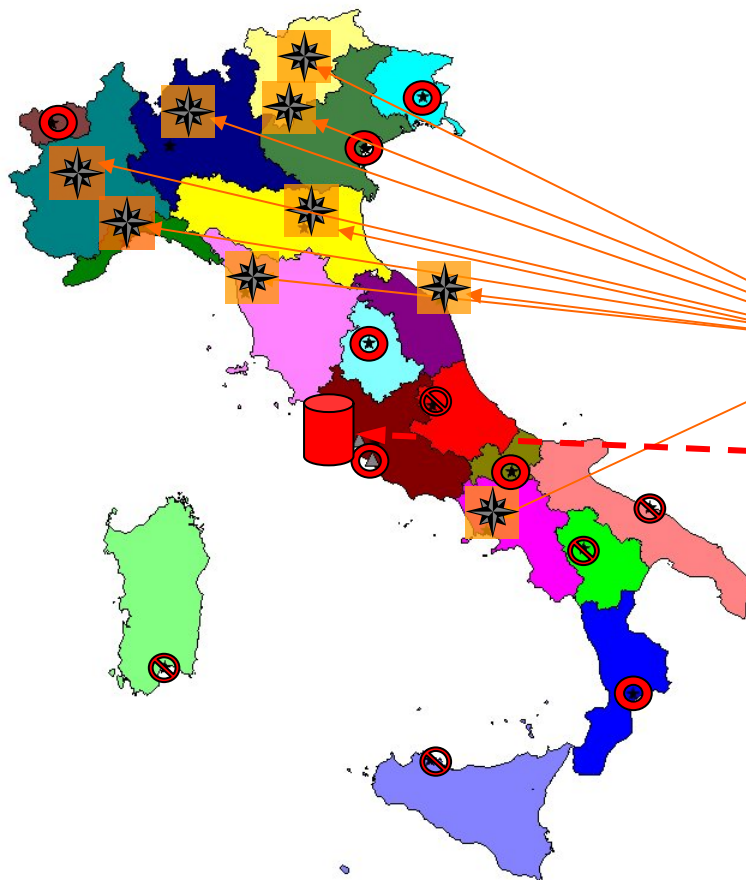


AFTER THE EVENT



The “Centri Funzionali” National Network

(update 01-11-2007)



“CENTRI FUNZIONALI”
21 Regional + 1 National

 9 Regional already fully operative

 1 National fully operative (DPC)

 5 Regional almost operative (2007)

 5 Regional not yet operative (2008)

... 41 “Centri di Competenza”



Risks Typologies

- **Floods**
- **Land Slides**
- **Droughts**
- **Fires**
- **Avalanches**
- **Volcanic ashes**
- **Industrial**
- **Seismic**

3 November 1966



FLOOD IN FLORENCE





MODIS Terra 250607 2 Km







**Not only emergency
and operations**

National Radar Network Coverage Plan

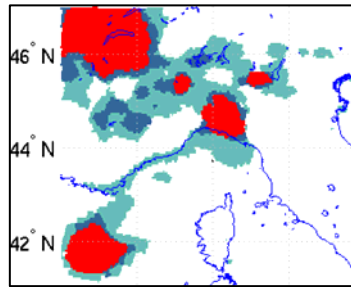
- RADAR REG. TRASM
- RADAR REG. TESTING
- 6 RADAR DI 1A INSTALLAZIONE
- 4 RADAR DI 2° INSTALLAZIONE
- ULTIMI RADAR PIANIFICATI
- RADAR IFA-CNR
- RADAR AERONAUTICA MILITARE

RADAR ENAV

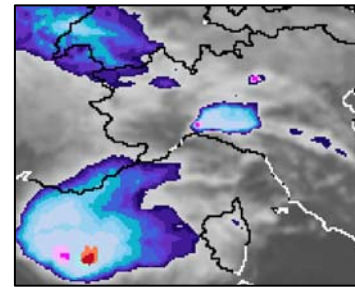


IMPROVING SATELLITE ESTIMATION

Rain Rate

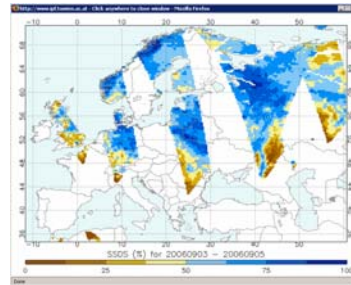


Zoom in North of Italy of the Estimated Rain Rate Classes from AMSU on MSG grid 2006-8-16 starting at 01:52 ending at 02:05



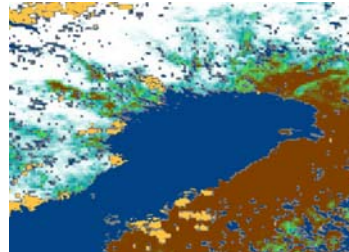
Zoom in North of Italy of Convective Detection Cloud by SEVIRI data 2006-8-16 at 02:00.

Soil Moisture



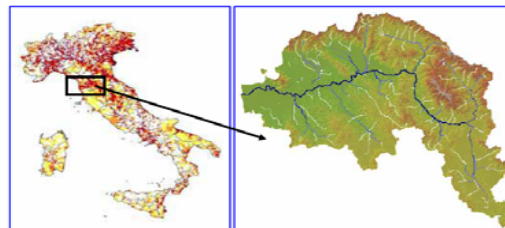
ASCAT:25 Km Res - Typical large-scale soil moisture product

Snow parameters



fraction of Snow Covered Area, derived by Terra/MODIS level 1B data, around Bay of Bothnia

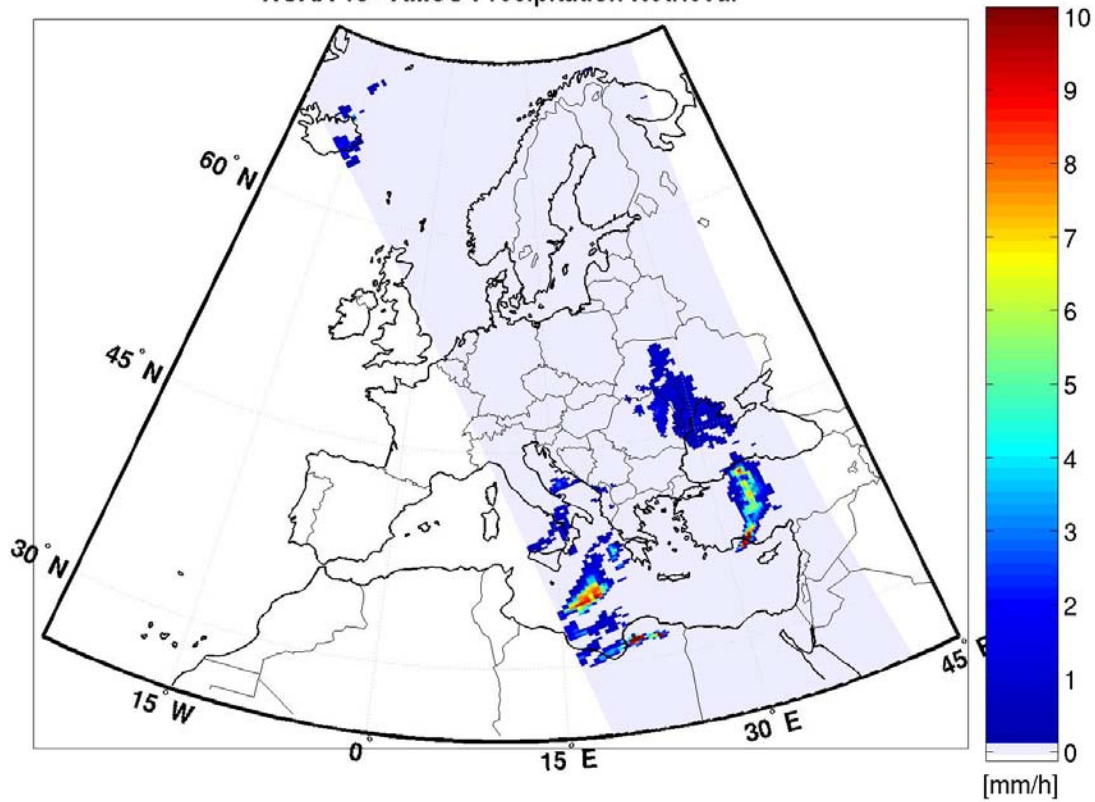
Hydrological validation



Impact on hydrological forecast

Eumetsat: HSAF Project

NOAA 18 - AMSU Precipitation Retrieval

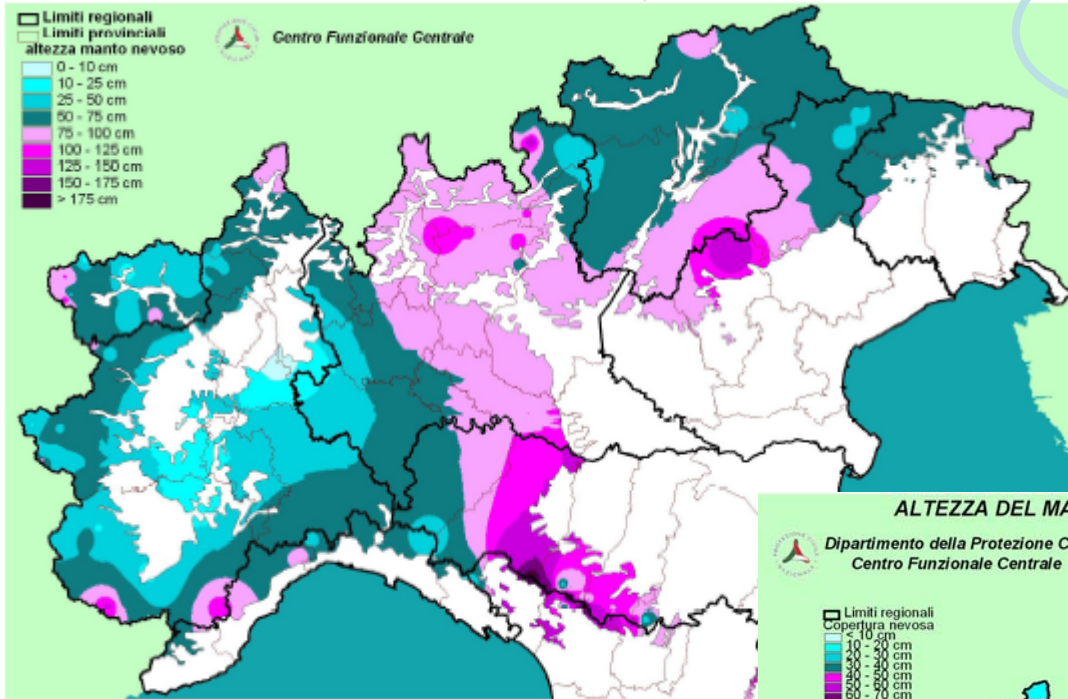


Product under evaluation

Example of precipitation map from AMSU-A/MHS - Satellite NOAA-18, day 21 Oct 2007, pass 11:22-11:35 UTC (northbound).

Snow cover

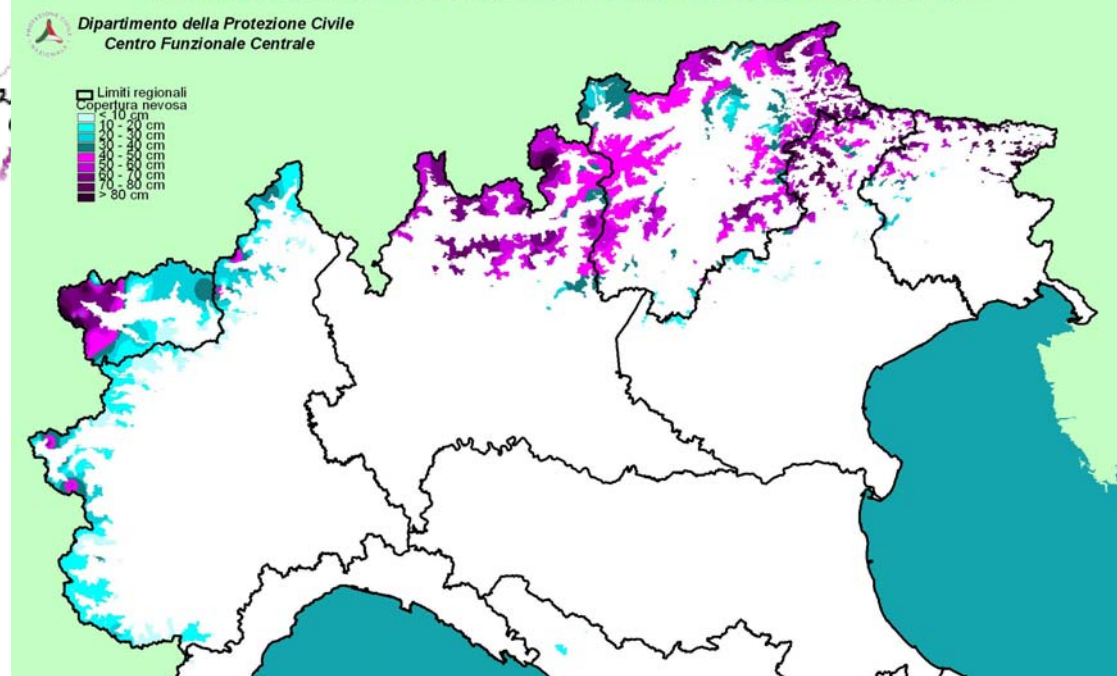
Altezza del manto nevoso sull'arco alpino del 01 02 2006



2006

2007

ALTEZZA DEL MANTO NEVOSO DEL GIORNO 20 FEBBRAIO 2007 SULL'ARCO ALPINO

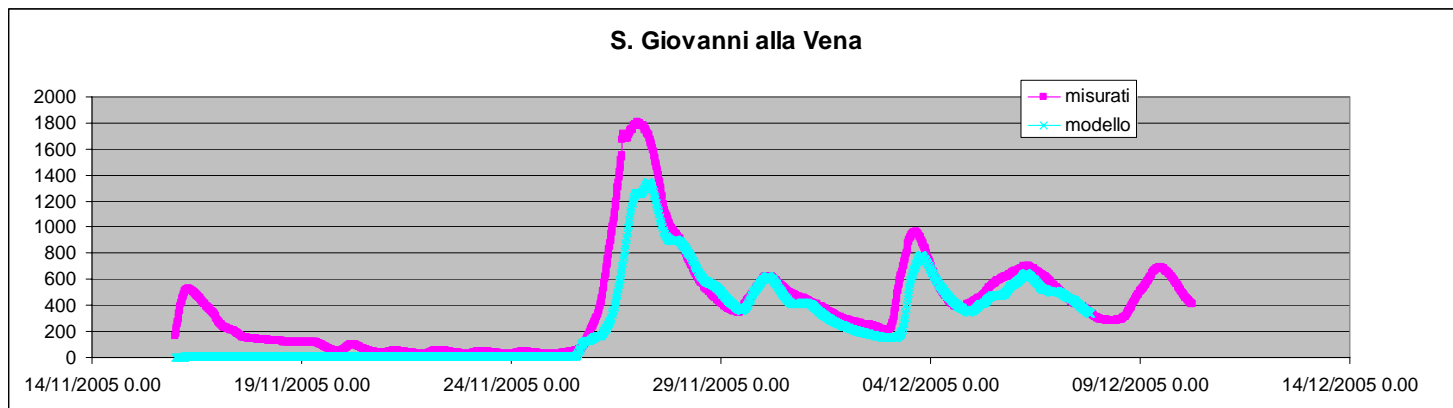
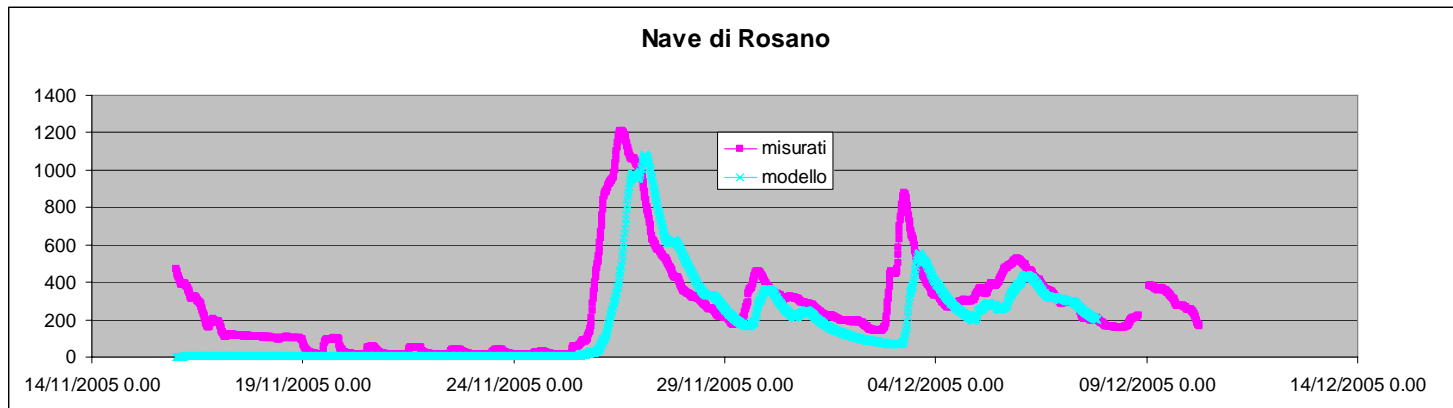


Fonte: Protezione Civile

“Nota sull’evolversi della situazione idrologica in Italia ai fini della prevenzione delle crisi idriche (aggiornata al 28 febbraio 2007)”

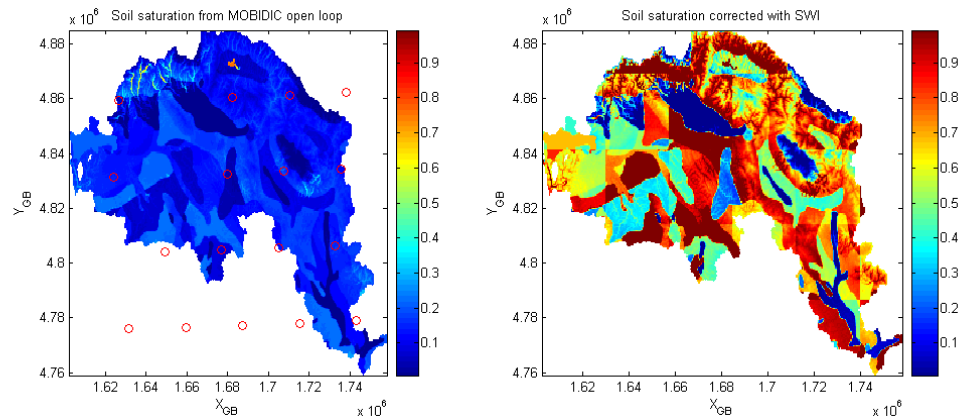
Case study

A relevant event occurred in the Arno basin on 26-27 November 2005. For such event, the modeled discharge was slightly underestimated with MOBIDIC (especially near the outlet of the basin, S. Giovanni alla Vena).



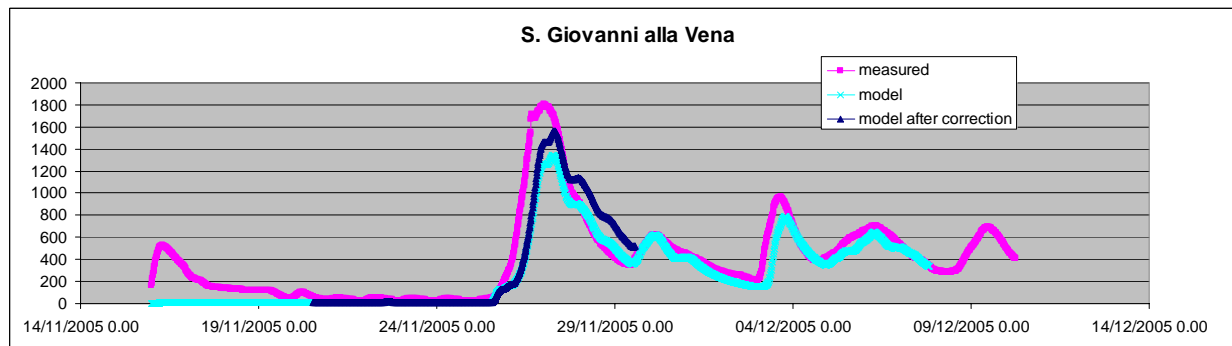
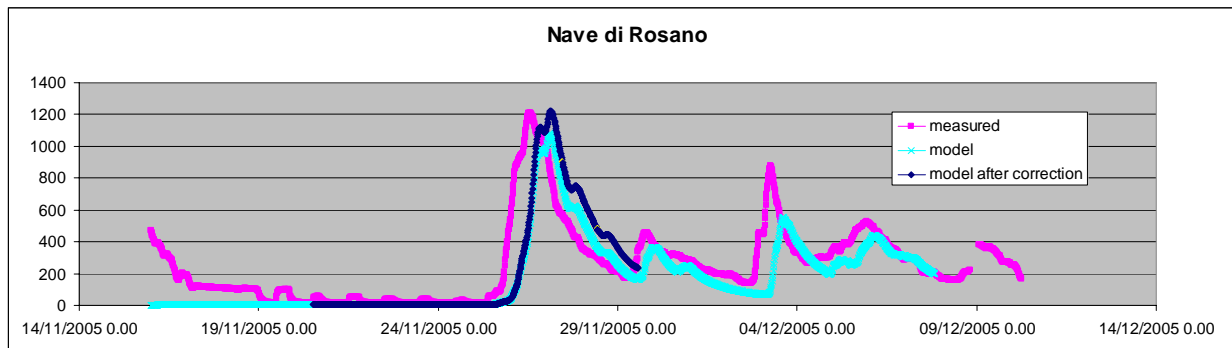
Correction method applied to soil moisture data

- Run MOBIDIC and compute at each time step soil saturation from the model, at 500 m resolution (sm_0)
- For the days when SWI (or SURFWET) data are available : Calculate area average values of soil saturation from MOBIDIC on the coarser grid size of SWI data (~27 km). This is done by resampling (upscaling) the output of MOBIDIC (sm_0) to 27 km resolution, obtaining sm_{COARSE} .
- Compute correction factor as the ratio between block average of Mobidic values and SWI.
- Calculate new model state (soil saturation) $sm = sm_0 \frac{SWI}{sm_{COARSE}}$
- Adjust numerically (for no data value, out of range values, ect)
- Restart MOBIDIC with modified initial saturation conditions
- In this way, the spatial pattern of soil saturation given by the finer hydrological model is preserved, while the average values are adjusted when the average of the modeled values differ from the ones given by H-SAF products.



Swi impact

The model is then re-started from 20 November with the new (wetter) soil saturation map, derived by satellite information, as initial condition. Figures show the new modelled - versus-measured discharge. Flow peaks are higher and closer to the observed discharge. An additional delay is observed but further studies will probably clarify reasons





CYCLOPS

Cyber-Infrastructure for Civil protection Operative Procedures



Partners

Activities



PARTNERS



CYber-Infrastructure for Civil protection Operative ProcedureS

1.6.2006 – 30.9.2008 825 000 €

| | | | |
|---------------|-----------------------------|--------------------------|------------------|
| DPC | Italy | Programme Manager | R. Sorani |
| DDSC | Fr | | |
| EMA | Fr | | |
| ANPC | Pt | | |
| | (Univ of Minho) | | |
| TEI-CR | Gr | | |
| | Prefecture of Chania | | |
| INFN | It | | |
| IMAA | It | Technical Manager | S. Nativi |

Deliverables now ready

| Del. No | Deliverable name | WP No | Lead Participant | | Nature | Dissemination level | Delivery date |
|---------|--|-------|---------------------|--|--------|---------------------|---------------|
| D1 | Project Presentation | 1 | 1 (DPC) | | R | PU | PM1 |
| D2 | Project open conference | 5 | 7 (SNBPC) / ANPC | | O | PU | PM1 |
| D3 | Perspective on cooperation with existing projects and initiatives | 1 | 1 (DPC) | | R | RE ¹ | PM2 |
| D4 | Dissemination Plan | 5 | 7 (SNBPC) / ANPC | | R | RE ¹ | PM3 |
| D5 | Training events plan | 2 | 2 (INFN) | | R | RE ¹ | PM3 |
| D6 | Business Process analysis document | 3 | 4 (DDSC) / EMA | | R | PU | PM5 |
| D7 | “EGEE cookbook: a guide for Civil Protection Grid users” document | 2 | 2 (INFN) | | R | PU | PM6 |
| D8 | Existing Analysis document | 3 | 4 (DDSC) / EMA | | R | RE ¹ | PM6 |
| D9 | Use-cases document | 3 | 4 (DDSC) / EMA | | R | RE ¹ | PM7 |
| D10 | First Training Workshop | 2 | 2 (INFN) | | O | PU | PM7 |
| D11 | System Requirements document | 3 | 4 (DDSC) / EMA | | R | PU | PM10 |

| | | | | | | | |
|-----|--|---|-------------------|-----|---|-----------------|------|
| D12 | Mid-term project workshop | 5 | 7 (ANPC) | 0.5 | O | PU | PM12 |
| D13 | Second Training Workshop | 2 | 2 (INFN) | 0.5 | O | PU | PM13 |
| D14 | “EGEE Request for Enhancement” document | 4 | 3 (IMAA) | 1 | R | PU | PM16 |
| D15 | “Toward a Grid - Guidelines for Innovation Strategies for Civil Protection Systems” report | 4 | 3 (IMAA) | 1 | R | RE ¹ | PM20 |
| D16 | “Research Strategies for the development of a Civil Protection E-Infrastructure” report | 4 | 3 (IMAA) | 1 | R | PU | PM20 |
| D17 | Dissemination and coordination activity final report | 2 | 2 (INFN) | 0.5 | R | RE1 | PM23 |
| D18 | Project results presentation | 5 | 7 (ANPC) | 0.5 | R | PU | PM23 |
| D19 | Final Plan for using and disseminating knowledge | 5 | 9 (UMINH O) | 1 | R | RE1 | PM23 |
| D20 | Report on raising public participation and awareness | 5 | 9 (UMINH O) | 0.5 | R | RE1 | PM23 |
| D21 | Project final conference | 5 | 9 (UMINH O) | 0.5 | O | PU | PM23 |



EU FIRE 5



Forest Fires Exercise
April 2008

EXERCISE

SCENARIO

national emergency requiring the Italian civil protection's system intervention and the contribution of other European countries to face fires affecting a relevant part of the country

OPERATIONAL AREA Gallura – Sardinia

DATE

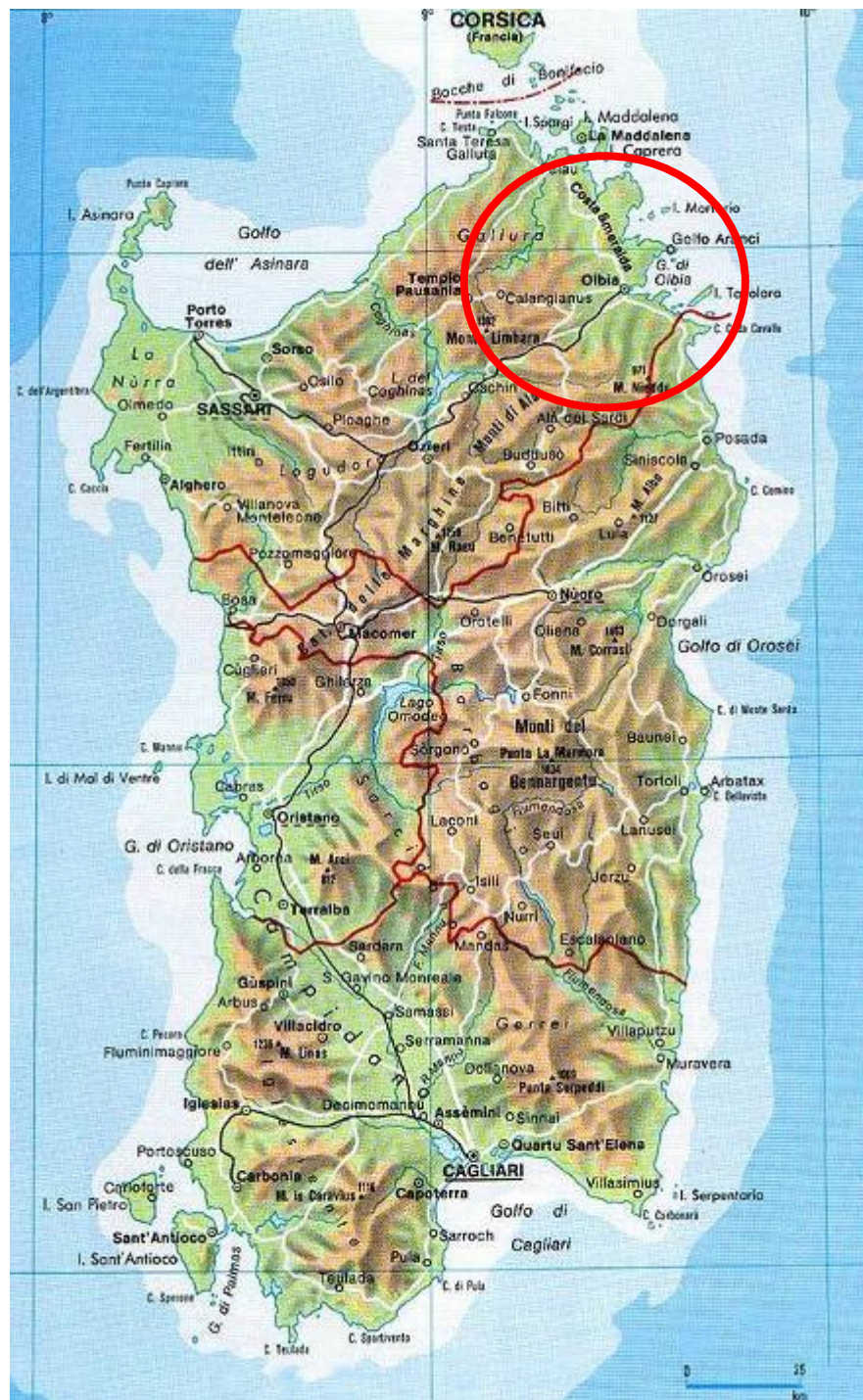
15-19 APRIL 2008

(activities 17th and 18th- Air Demonstration on the 19th)

Objectives:

- To test the FIRE5 Mission procedures in the framework of the Civil Protection Mechanism
- To test and to disseminate the FIRE5 forest fires modules
- To provide the teams with logistics and transportation
- To test the co-ordination system
- To test the inter-operability of the participant teams with special regard to equipment
- To test radio communication system among the teams
- to test the identification and assistance to foreign citizens capability in the hazardous zone

OPERATIONAL AREAS



Participating Nations (IAO)

- Member States

- FRANCE



- GREECE



- ITALY



- PORTUGAL



- SPAIN



- Other Countries

- CYPRUS



- CZECH REP



- HUNGARY



- MALTA



- SLOVENJA



- TURKEY



- RUSSIAN FED





Thanks for attention