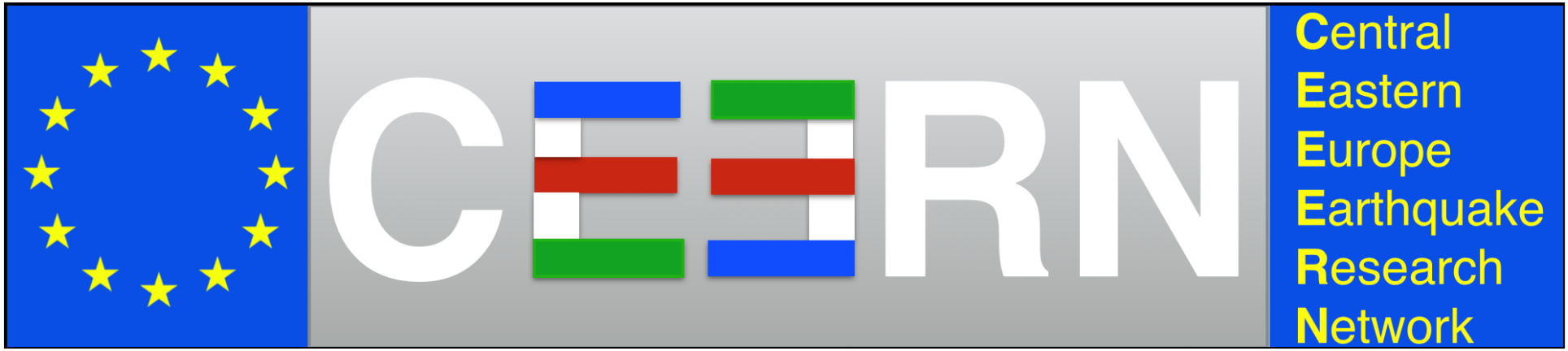
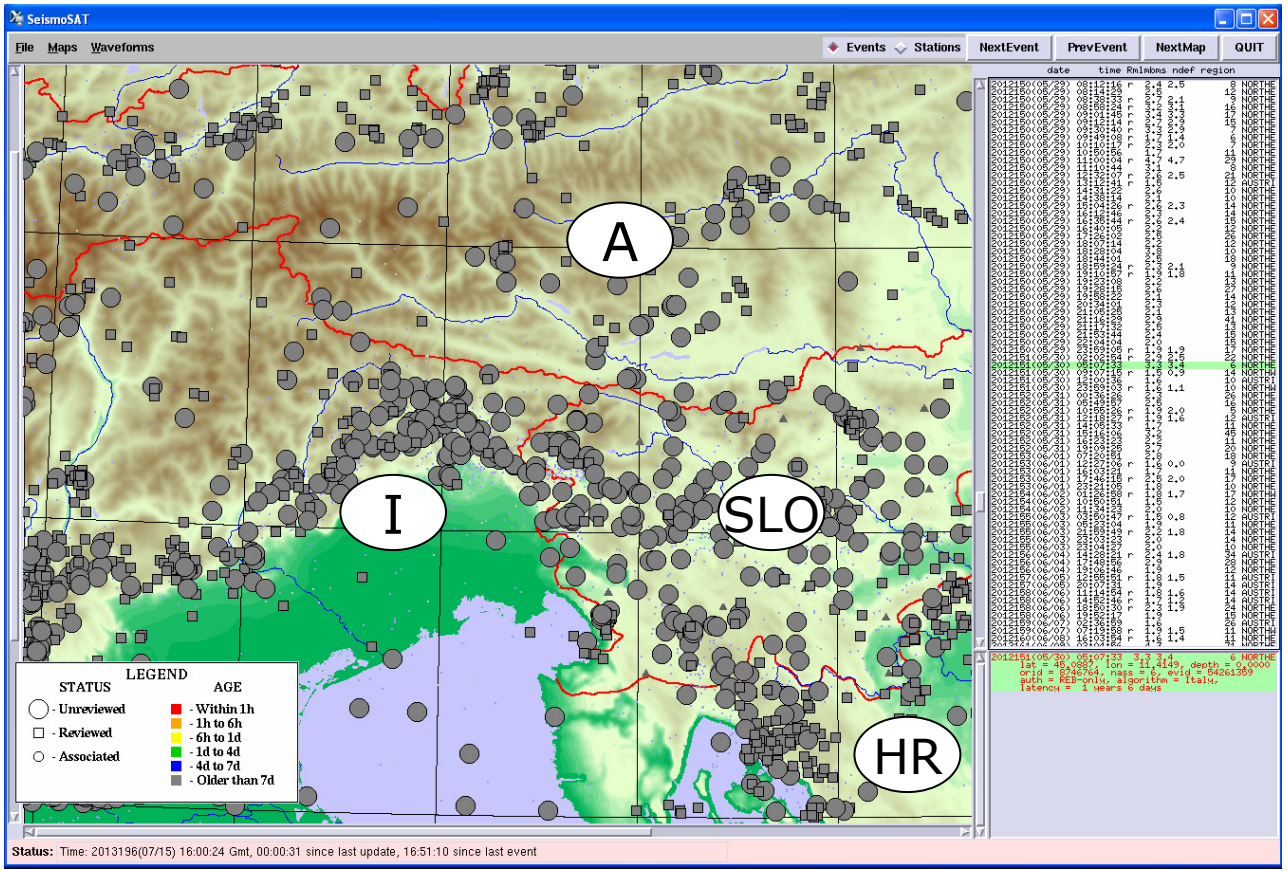


CE^{3}RN

D. Pesaresi (OGS), W. Lenhardt (ZAMG), M. Živčić (ARSO), K. Kuk (UniZG), G. Costa (UniTS)

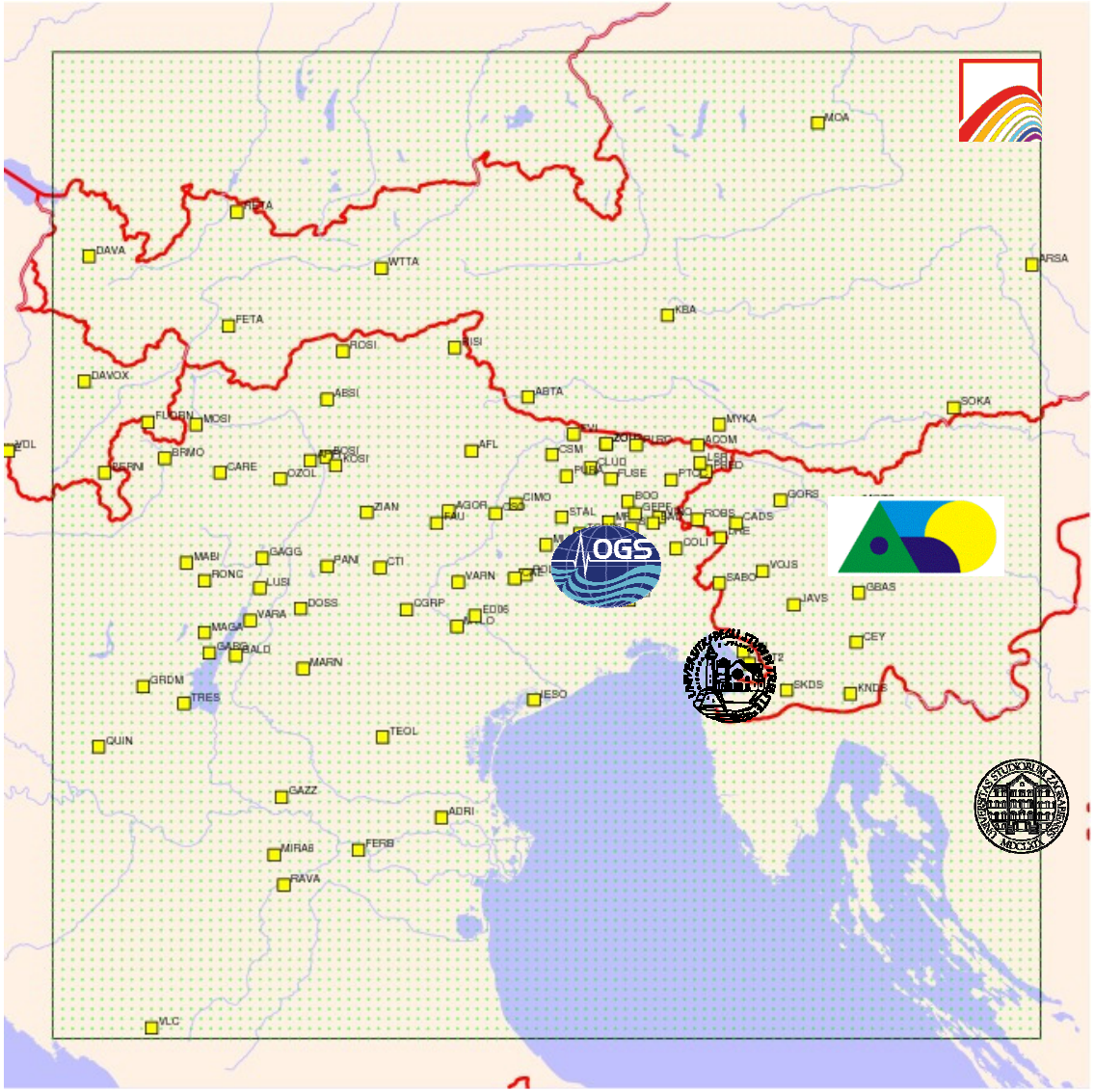
ORFEUS Workshop 2015

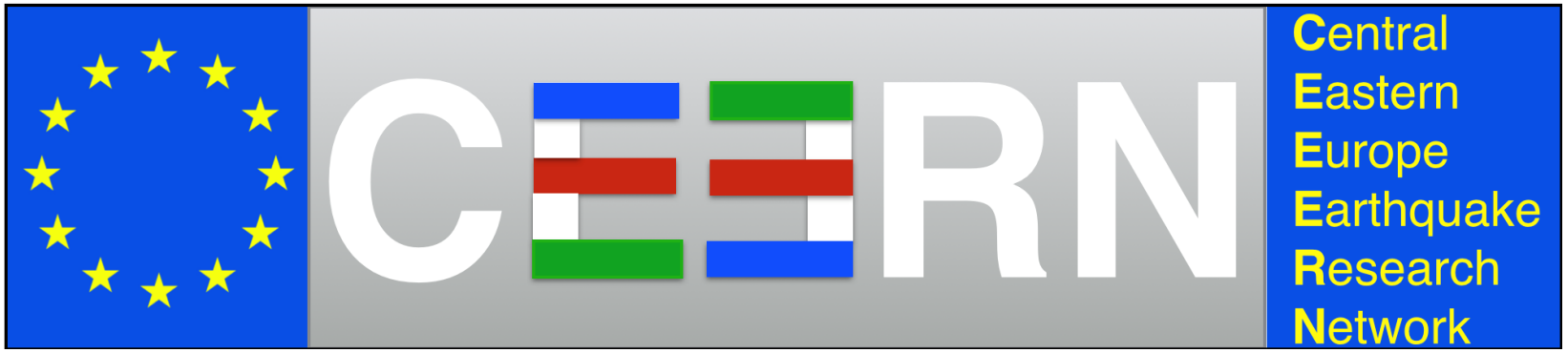
Transfrontier seismicity



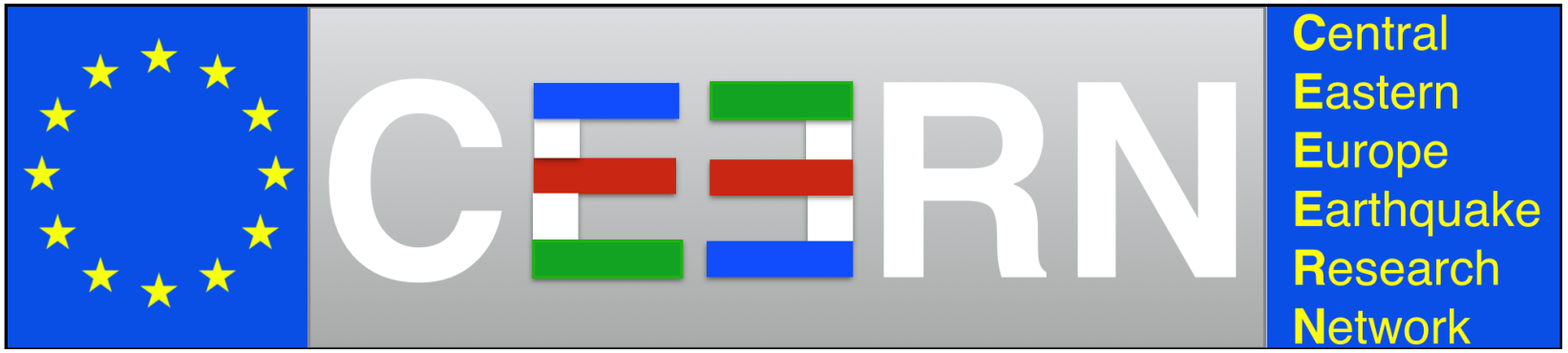
seismicity 2011-2012 , ML> 1.5

The transfrontier network



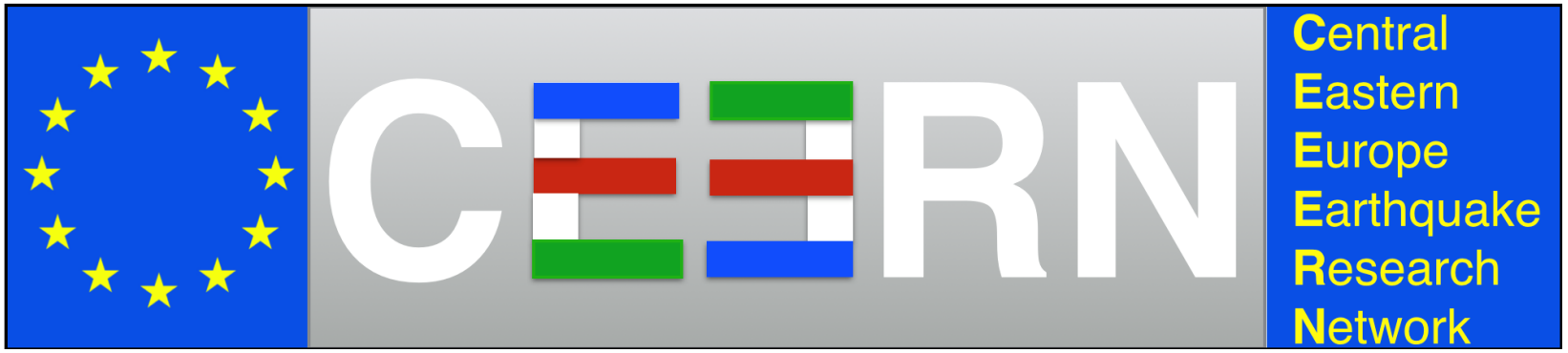


- Memorandum of Understanding (2014)
  - Austria
    - Zentralanstalt für Meteorologie und Geodynamik (ZAMG, Wien)
  - Croatia
    - University of Zagreb (UniZG, Zagreb)
  - Italy
    - OGS (Istituto Nazionale di Oceanografia e di Geofisica Sperimentale, Trieste)
    - University of Trieste (UniTS, Trieste)
  - Slovenia
    - Agencija Republike Slovenije za okolje (ARSO, Ljubljana)



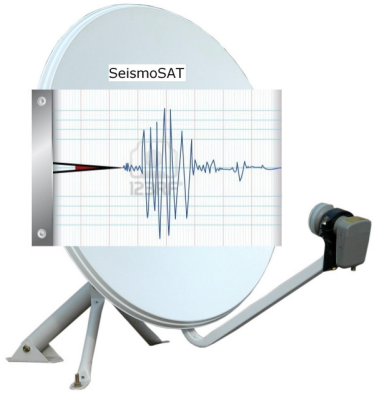
- Formally establish the cross-border network
- Specify the rules of conduct in the network management, improvements, extensions and enlargements
- Enhance seismological research in the region
- Support civil protection activities

- http://www.ce3rn.eu/



- ORFEUS EIDA permanent and temporary network list:
  - CR Croatian Seismograph Network 1
  - NI NE Italy Broad Band Network 13
  - OE Austrian Seismic Network 13
  - SL Seismic Network of the Republic of Slovenia 27

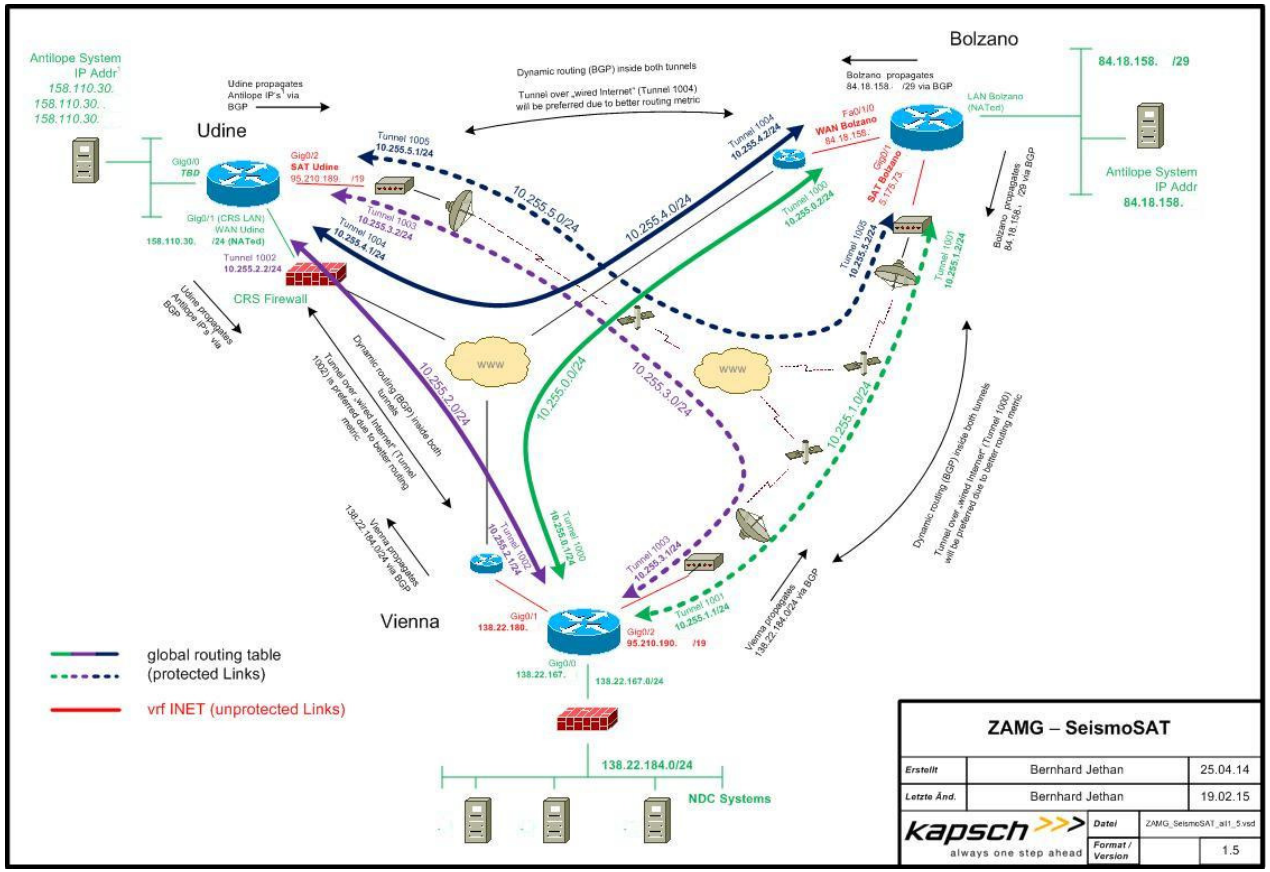
CE³RN: SeismoSAT



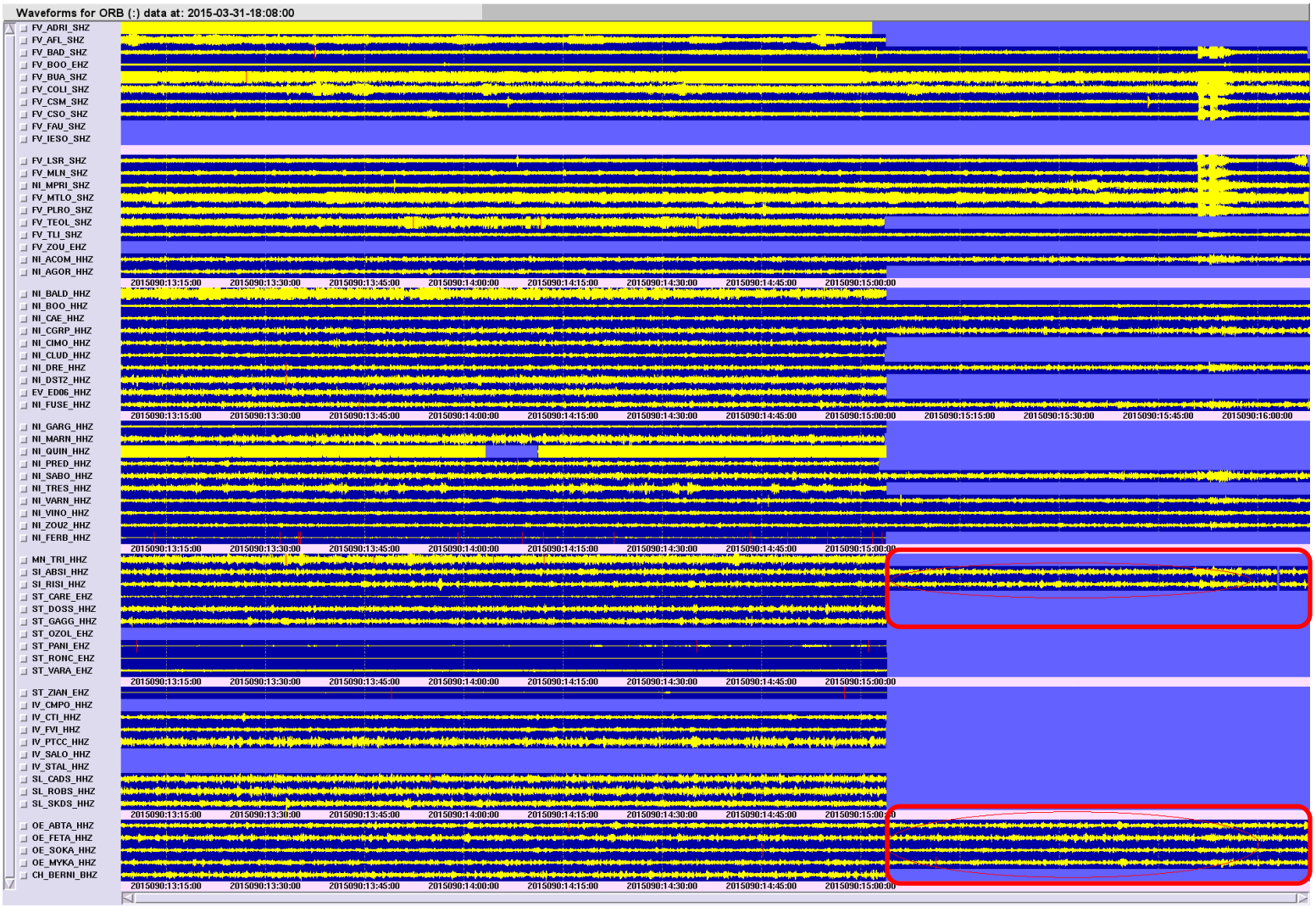
- to connect seismic data centers of OGS and Bolzano Civil Defense (Italy) and ZAMG (Austria)
  - Associated Partner ARSO (Slovenia)
- total approved budget: 131k€
- November 2012 - March 2015

- Pesaresi et al., Adv. Geosci., 36, 57-60, 2014

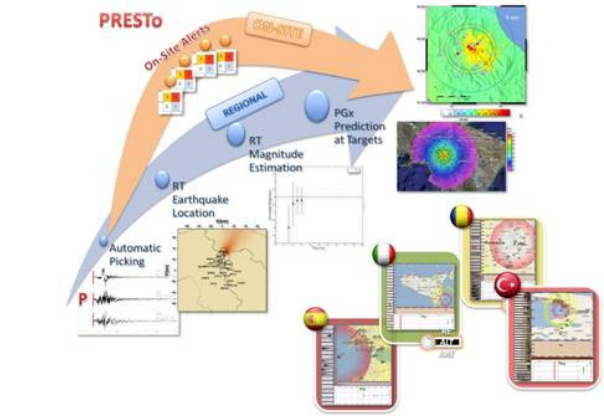
SeismoSAT links sat/internet

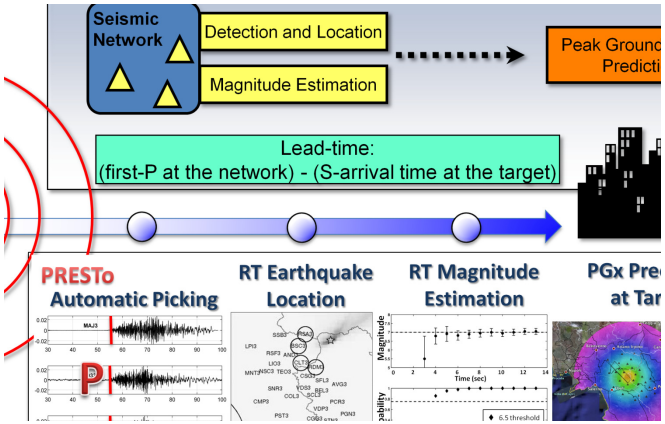


SeismoSAT results



PRESTo@CE³RN

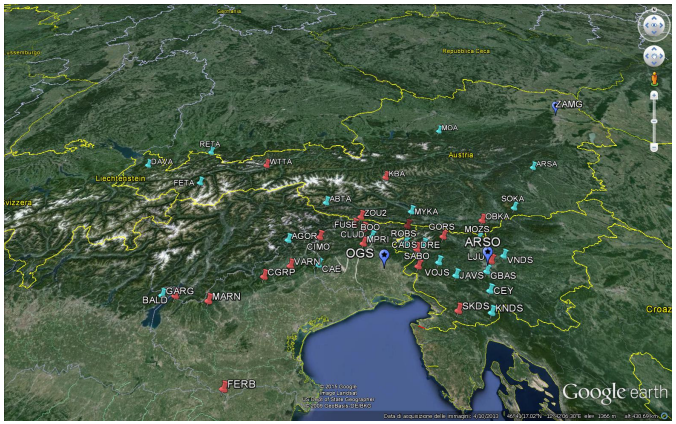


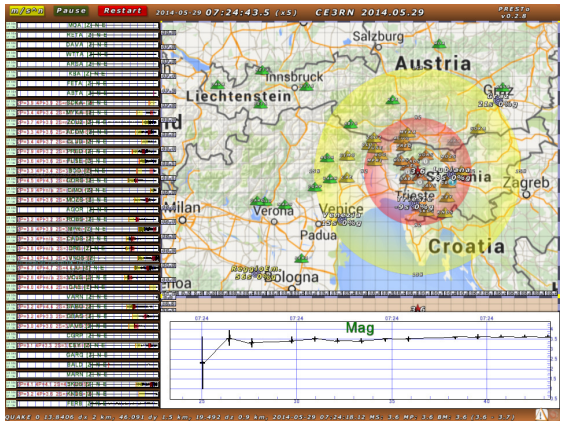


- PRESTo: PRobabilistic and Evolutionary early warning SysTem
- http://www.prestoews.org/

- University of Napoli
- RISSC – Research unit in experimental and computational Seismology
- http://www.rissclab.unina.it

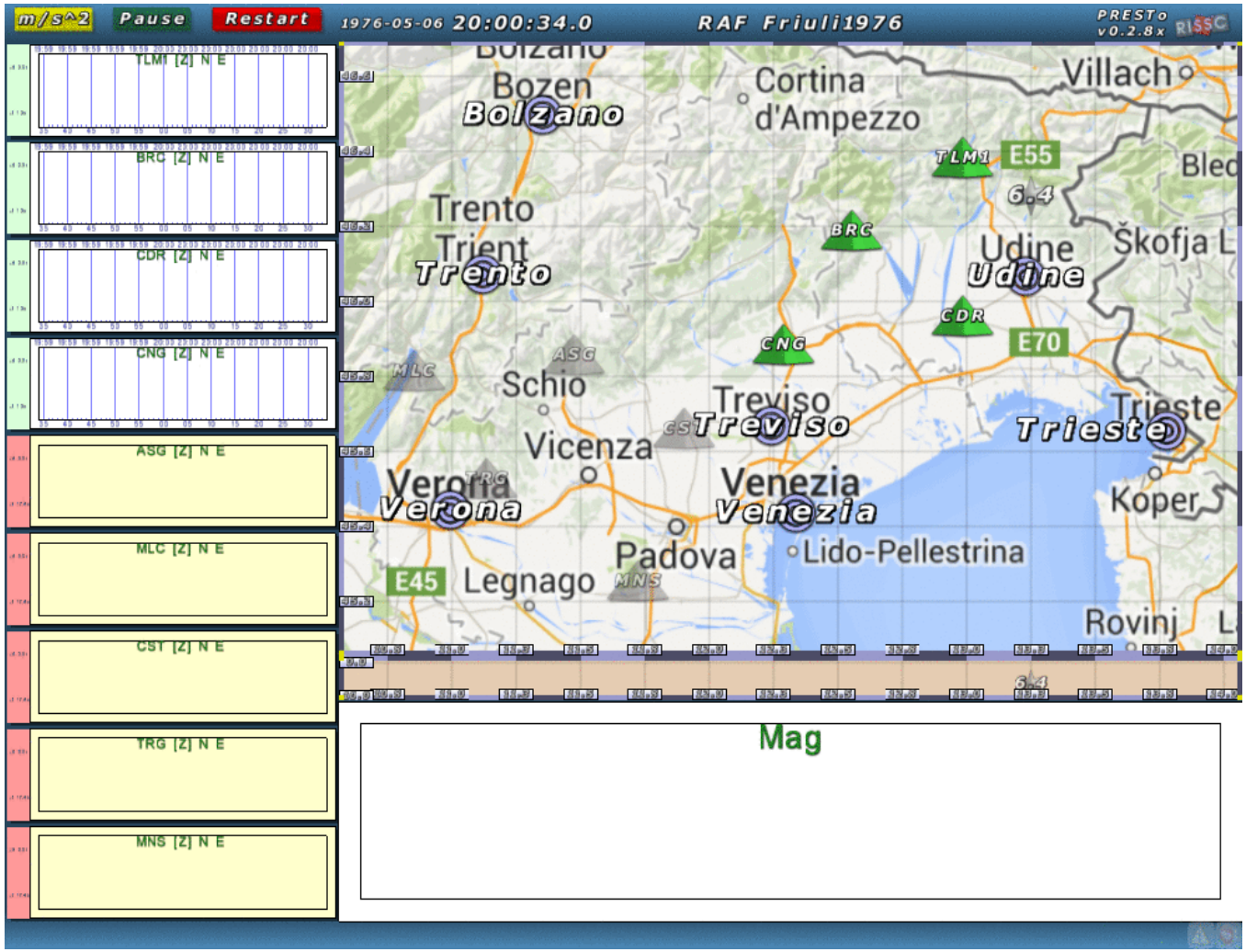
PRESTo@CE³RN



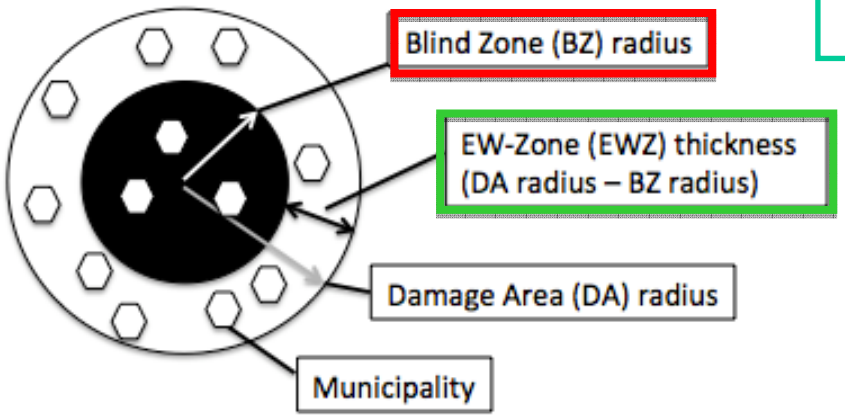


- started in 2014
- initially 20 accelerometers, now 43 stations from OGS (Italy), ARSO (Slovenia) and ZAMG (Austria)
- quick and reliable:
  - Picozzi et al., Adv. Geosci., 40, 51-61, 2015
- alarms via email

PRESTo@CE³RN: Friuli 76



Would today a EEWS be useful?

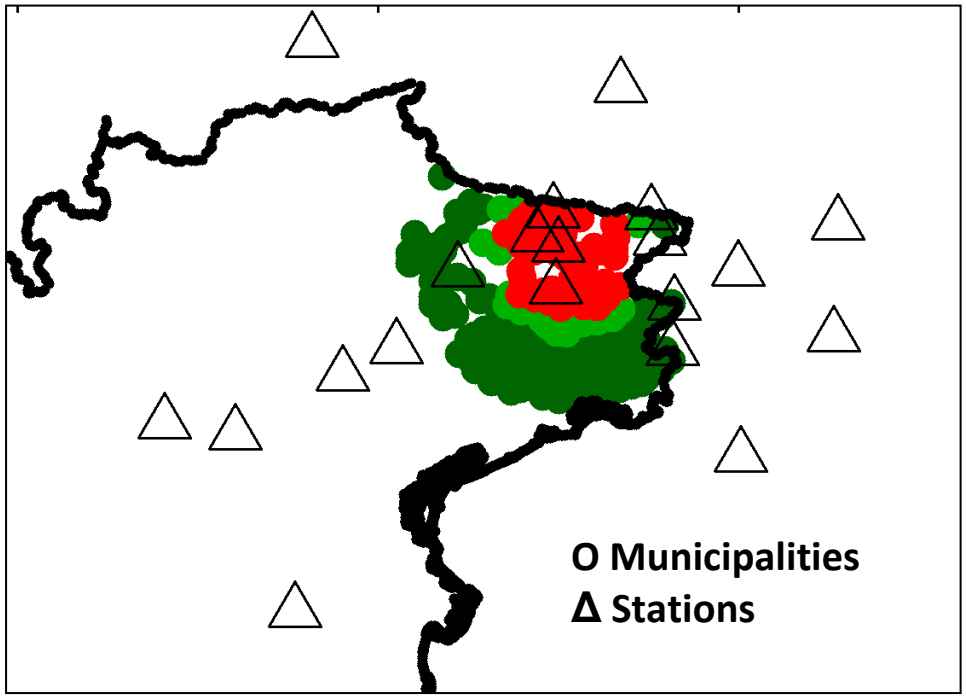


DM: PGV → Int. Class VII from Faccioli & Cauzzi (2006)

Example of Actions that might be taken with 10 seconds warning (by Goltz 2002)

Emergency Services:
-turn off computer
-send alert to fire department command center
-warn community
-make sure everyone is out of elevators
-start moving equipment out of building
-activate backup
-alert field workers
-shut down equipment
-evacuate bottom floor
-stop hazardous work
-secure equipment

1976 Friuli EQ. Mw 6.5 scenario + CE3RN stations



Region	Blind Zone (km)	EW Zone (km)	Lead-Time (s)	N. Mun. BZ	N. Mun. SZ
Friuli	28.3	9.6 - 39.6	3 - 13	60	87-176

27 Municipalities within the EW Zone might benefit of a lead-time > 10 s

References

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- Picozzi, M., Elia, L., Pesaresi, D., Zollo, A., Mucciarelli, M., Gosar, A., Lenhardt, W., and Živčić, M.: Transnational Earthquake Early Warning (EEW) in Northeastern Italy, Slovenia and Austria: first experience with PRESTo at the CE^{3}R Network, Adv. Geosci., 40, 51-61, doi:10.5194/adgeo-40-51-2015, 2015.

THANK YOU

(Especially to the LOC
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Mihaela Popa, etc..)

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