

# Recent Activities at the LAC UPA

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# Outlook

- Subnetwork activity
  - Subnetwork
  - SW
  - solutions
  - reprocessing
- National realization of ETRS89
- National Network maintenance and Geophysical application
- Proposed Cost Action

# Subnetwork activity

- UPA LAC active since week 0995 (Jan 31., 1999)
- Present subnetwork 45 stations, BSW 5.0
- October 2010: moved from Windows to Linux
- Added: daily processing with IGS rapid orbits (to be submitted to BKG)
- Reprocessing of 2006: 45 + 8 (now inactive) stations considered



# Support to the national NMA IGMI for the RDN realization of ETRS89 (ETRF2000 at 2008.0)

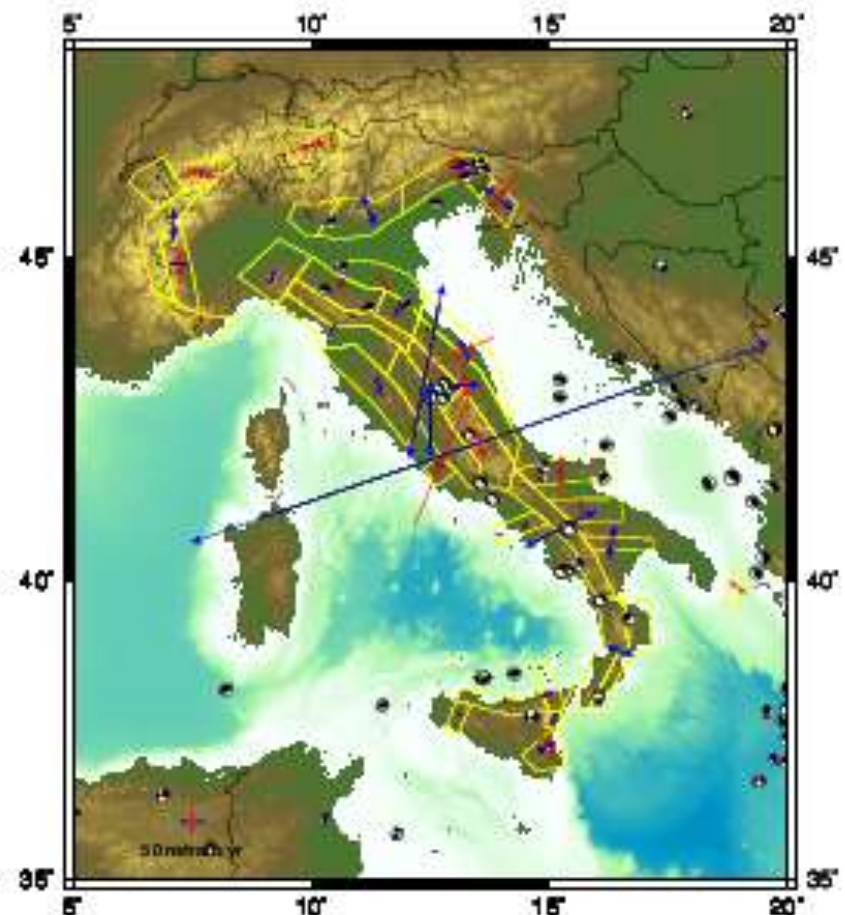
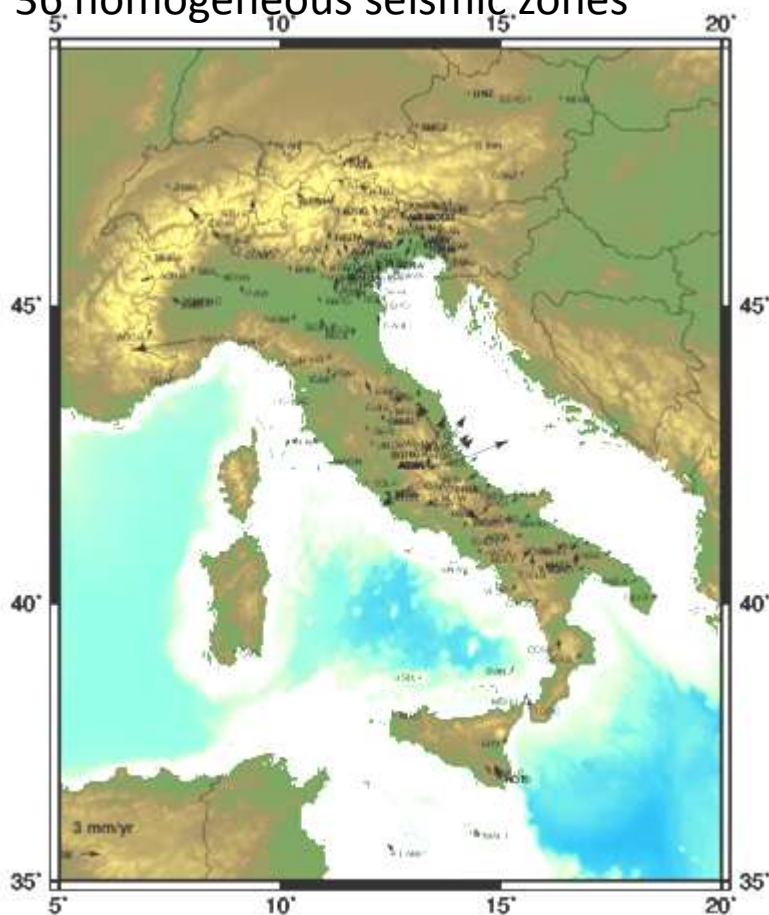
- total of 99 stations processed for 4 weeks centered at 2008.0
- BSW50, EPN Processing Standards
- Approved as ETRS89 ETRF2000 national network at the 2009 EUREF Symposium .



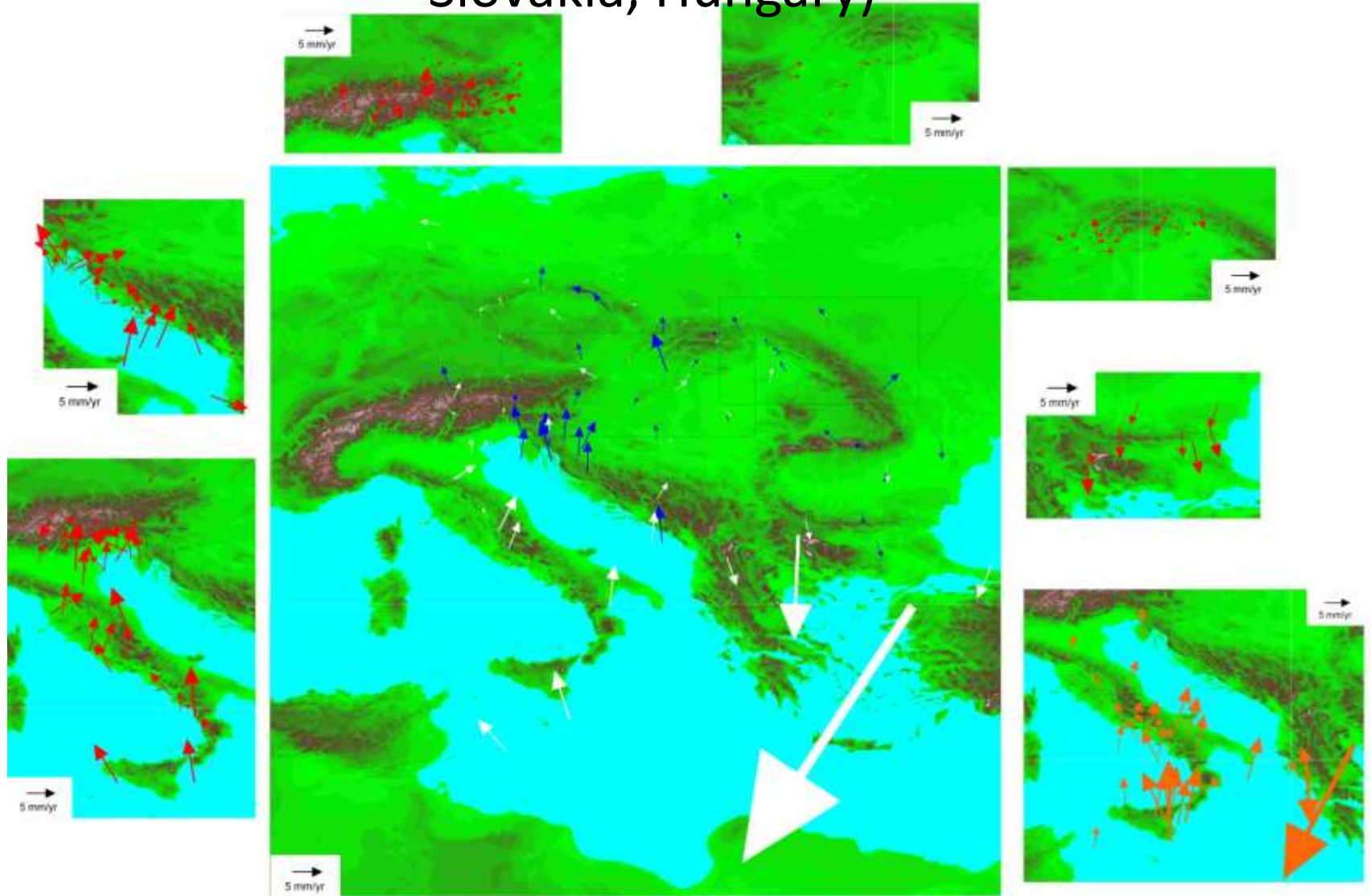


# Velocities, Horizontal deformation

- Velocities from NEQ stacking, ITRF2005 constraints, reduced for ETRF2000 Eurasian pole
- Strain rate computed by LSQ collocation,  $d_0=50$  km, interpolated at the center of 36 homogeneous seismic zones



# Combination of multiyear SINEX files in XV space: Central Europe (CEGRN, EPN, Italy, Crodyn, Austria, Slovakia, Hungary)



# Proposed COST Action

## TEGO – Towards an European GNSS Observatory

- Rationale
  - Request from the geophysical/geodynamical community to know in detail the 3D velocities in Europe and surroundings
  - PBO in the US is an important example
  - Several independent and overlapping solutions exist (EPN, CEGRN, national solutions), yet they have not been combined into one
  - Combination could lead the way to widespread introduction and maintenance of ETRS89 in several countries (INSPIRE directive)



# COST

- COST Action: 4 year program intended to support meetings among people addressing the same scientific topic; it does not support the research itself
- COST initiatives in the GNSS field:
  - 716 Exploitation of Ground-based GPS for Climate and Numerical Weather Prediction Applications (End date: March 2004)
  - ES0701 Improved Constraints on Models of Glacial Isostatic Adjustment (End Date: April 2012)
- A new action must be proposed by 5 to 10 different COST countries, at specific deadlines

# TEGO objectives

- Coordinate the action of European Research Groups in space geodesy in view of a single sustainable, permanent observational infrastructure
- Promote discussion on options of computation of precise coordinates and velocities of permanent GNSS stations, using GPS and GLONASS data
- Coordinate the smooth integration of the forthcoming European Galileo GNSS and its products for geodynamics and reference frame applications
- Define optimal strategies of combination for all available GNSS data and solution types of continuous or epoch sites
- Identify ways to integrate the geodetic monitoring networks into geophysical monitoring networks (e.g. seismic networks), local observatories (e.g. volcano observatories) and experimental laboratories in Europe and adjacent regions and the cooperation with EPOS.
- Contribute to lay out a road map towards an e-infrastructure capable to provide open access to distributed geodetic data and modelling tools, enabling a step change in multidisciplinary scientific research into natural hazards and environmental change
- Establish the international framework and cooperation with US (UNAVCO), African and Asian initiatives
- Promote cross-disciplinary approaches to challenging scientific and technological GMES issues through links with other space borne missions (e.g. InSAR GOCE) and concepts (e.g. ECGN, GGOS).

# List of proponents

**Participants interested in network (max 10, from up to 10 different COST Countries:**

- 1-. Zuheir Altamimi, Institut Geographique Nationale IGN , FR
- 2-. Luisa Bastos, University of Porto, PT
- 3-. Matthias Becker, TU Darmstadt, DE
- 4-. Richard M. Bingley, University of Nottingham, UK
- 5-. Carine Bruyninx, Royal Belgian Observatory, BE
- 6-. Alessandro Caporali, University of Padova, IT
- 7-. Tonie van Dam, University of Luxembourg, LU
- 8-. Ambrus Kenyeres, FOMI Satellite Geodetic Observatory, HU
- 9-. Markku Poutanen, Finnish Geodetic Institute, FI
- 10-. Guenter Stangl, Austrian Academy of Sciences, AT

# Tentative list of TEGO Study Groups

- SG1: Combination of network solutions
- SG2: Standardization of data and processing centers
- SG3: Quality criteria and coordination of permanent GNSS station deployment
- SG4: Integration of the Dense Velocity Field into the Global Velocity Field
- SG5: Liaison/Interface to EPOS, Topoeurope and other EU and global programs


# Current status (Nov. 9)

The screenshot shows the COST Office Open Call Proposer Area website. The page title is "COST OFFICE Open Call". The status of the proposal is "Preliminary Proposal under assessment". The proposal is titled "Earth System Science and Environmental Management" and was submitted on 20/08/2010. The assessment process is shown in a table below.


Reference: oc-2010-2-7709 **Status: Preliminary Proposal under assessment**

Color code: [Reset step\(s\)](#) [In process](#) [Final](#) [Aborted](#)

Preliminary proposal

 **Earth System Science and Environmental Management**

Title: TEGO - Towards an European GNSS Observatory  
Proposer: Prof. Alessandro CAPORALI  
Institution: University of Padova Dept. of Geosciences (Italy)

	Online Submission	OC Allocation	Assessment	Selection for Full Proposals
 pdf version	Submitted on 20/08/2010 Collection date: 24 Dec, 2010, 3:00 pm Brussels time	11/10/2010	15/11/2010	17/11/2010

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Tuesday, 9 November 2010, 17:00:10

# What happens if the full proposal is approved

- MoU + Technical Annex (background, objectives and benefits, scientific programme, organisation and timetable, economic dimension and dissemination plan) to be signed by at least 5 COST Countries and by CSO (COST Committee of Senior Officials)
- The MoU remains open for 12 months for acceptance to any COST member Country
- The new Action can start