

National Report of Italy



Euref 2014 Symposium - Vilnius

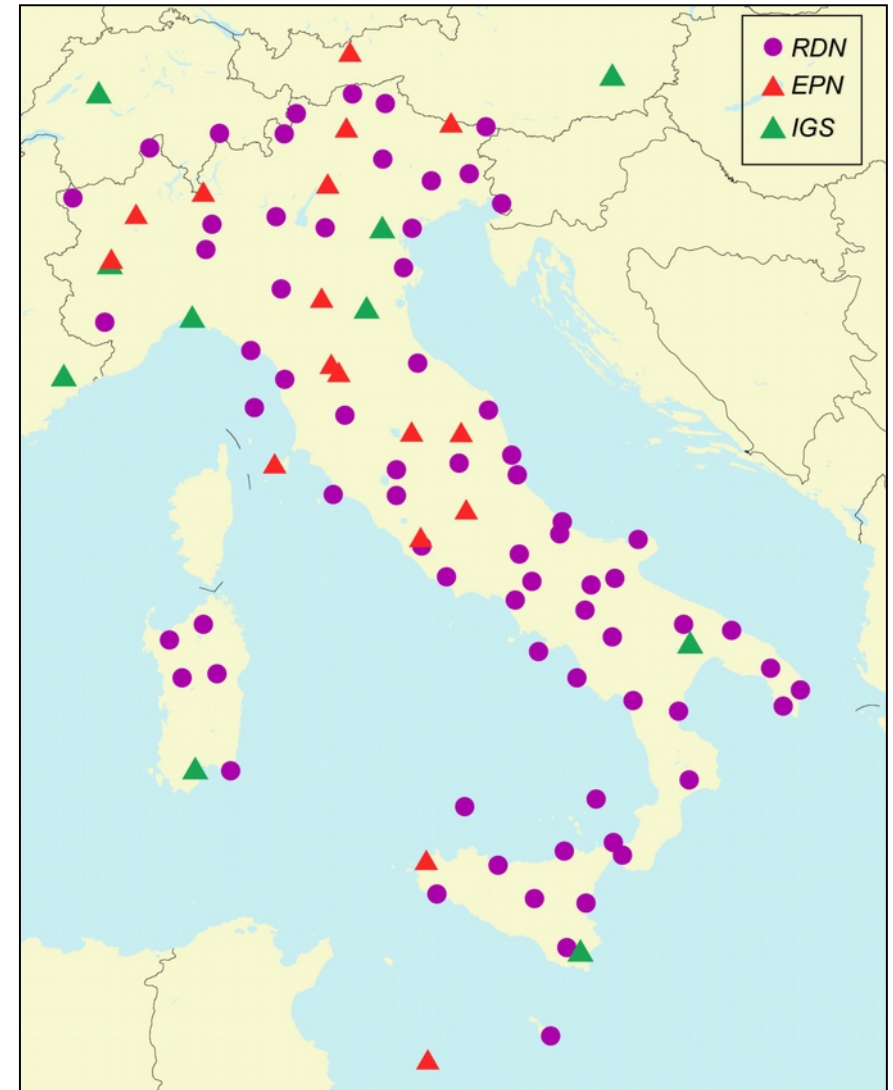
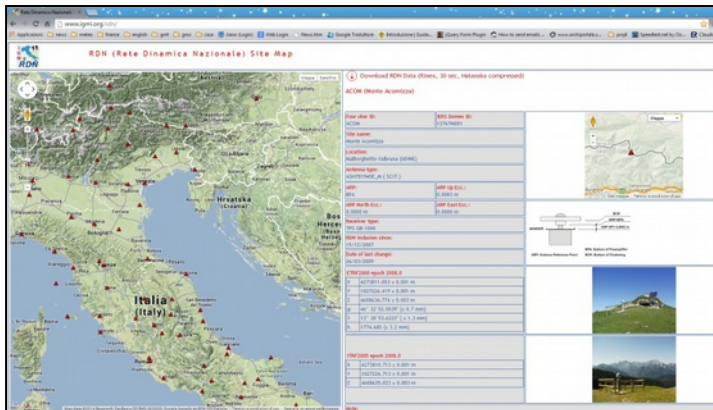




National geodetic infrastructure: RDN

- It consists of 99 stations covering Italian territory
- It works since 01/01/2008, from 2009 it is the realization of ETRF2000 (2008.0) in Italy
- Data and products are published in

www.igmi.org/rdn





RDN monitoring

- Velocity field in ETRF2000 from 5 years time series in IGbo8 (RDN repro)
- Horizontal deformations up to ≈ 6 mm/year for south regions of Italy
- It is necessary to update the ETRF2000 (epoch 2008.0) coordinates





RDN monitoring



- 10 % stations are out of order
- 6 % stations have faulty behaviour or show local instability



RDN₂

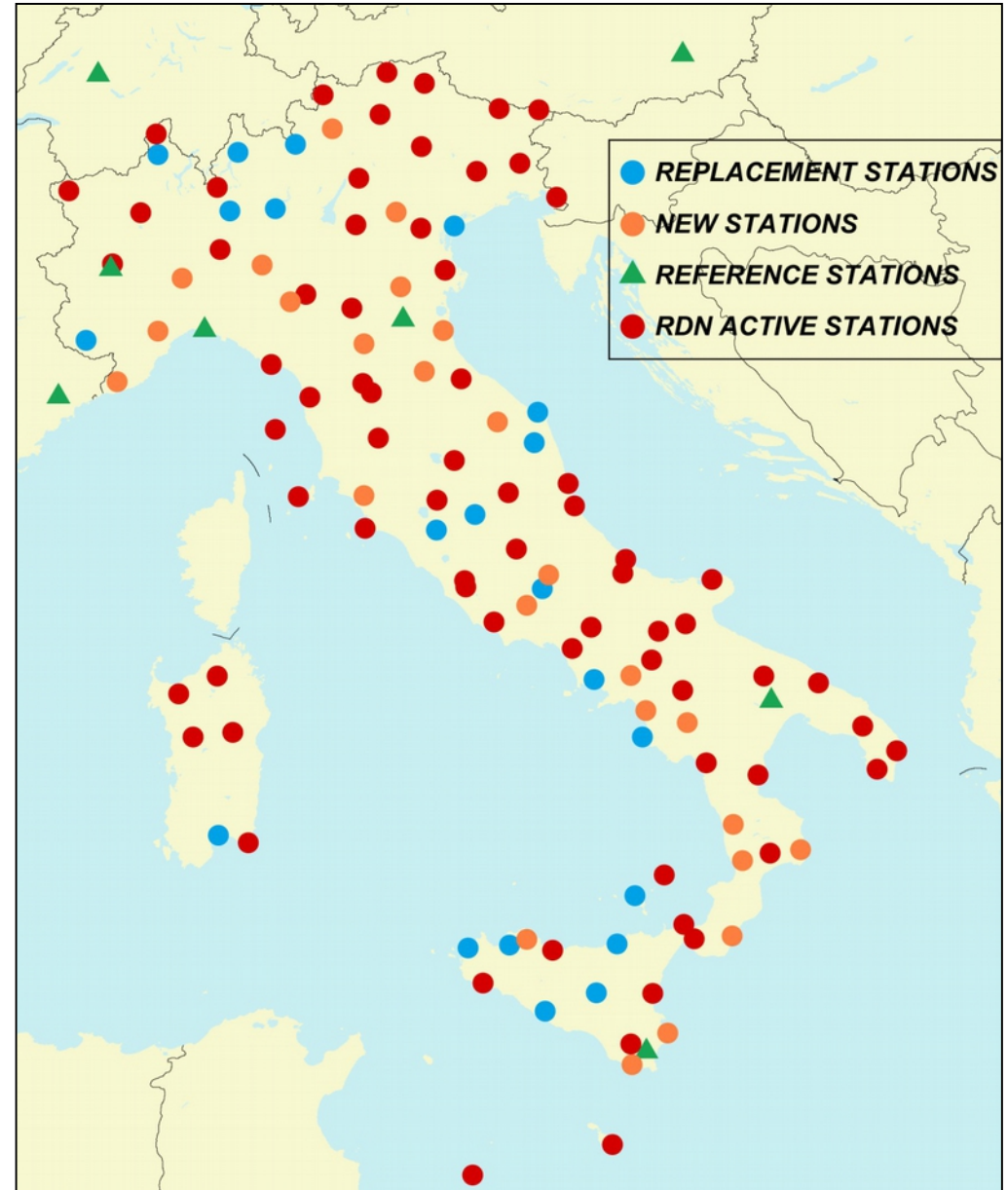
— **80** RDN stations

— **19** stations to replace inactive or faulty receivers

— **27** stations to densify areas with peculiar geodynamic

126 stations

— Updating of official ETRF2000 coordinates to epoch 2014.5

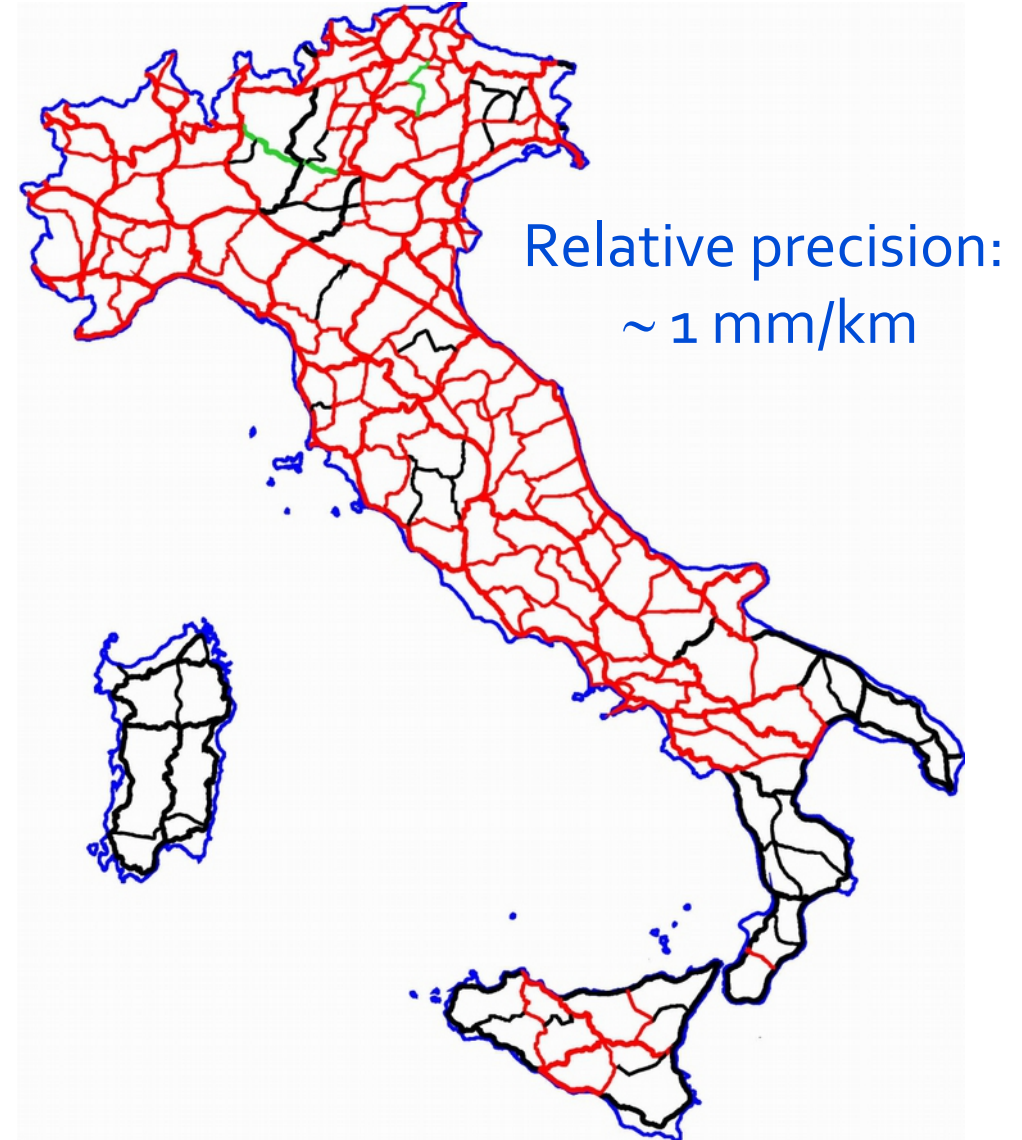




High precision Leveling Network

Ongoing densification and
remeasurement (1996-2014)
up to 22.000 km

-  Old levelling lines set up
from 1950 to 1971
-  Densification and
remeasurement from
1996 to 2013
-  Ongoing densification
2014





Estimation of Geopotential numbers

- On going estimation of geopotential numbers along closed polygons of leveling network



computed



on going computation



need new measurements

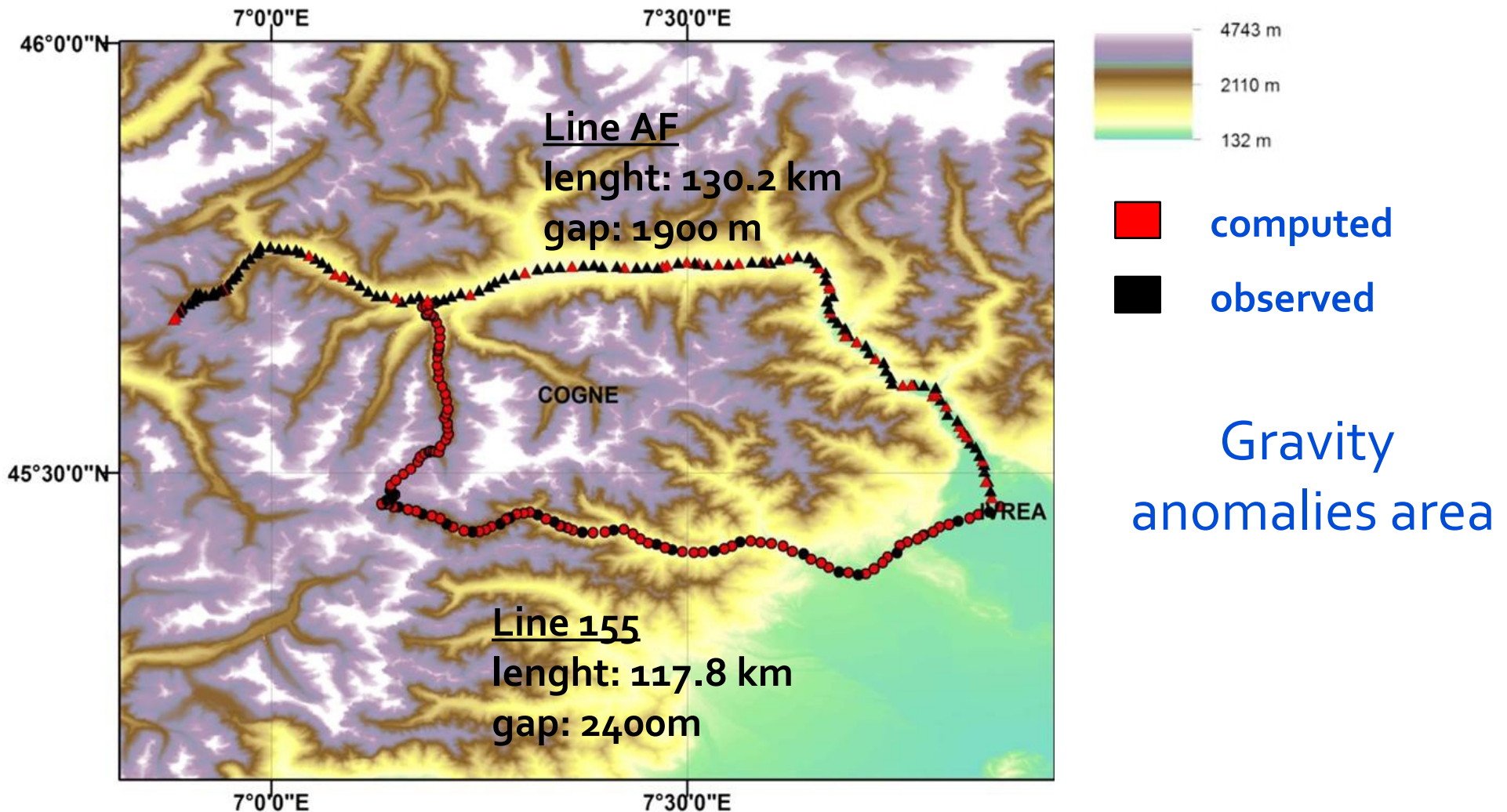
- Gravity values are computed by interpolation from national gravity database





Estimation of Geopotential numbers

This study confirmed the goodness of the model for the gravity values estimation necessary to height correction





Maintenance of state boundaries

- Maintenance of national boundaries can be difficult since boundary lines are located mostly in the alpine regions.
- All boundary marks are being recalculated in ETRF2000



Gran Mesule 3479 m



Maintenance of state boundaries

- Maintenance of national boundaries can be difficult since boundary lines are located mostly in the alpine regions.
- All boundary marks are being recalculated in ETRF2000
- In order to compute rototraslational parameters, many *ad hoc* measurements have been taken

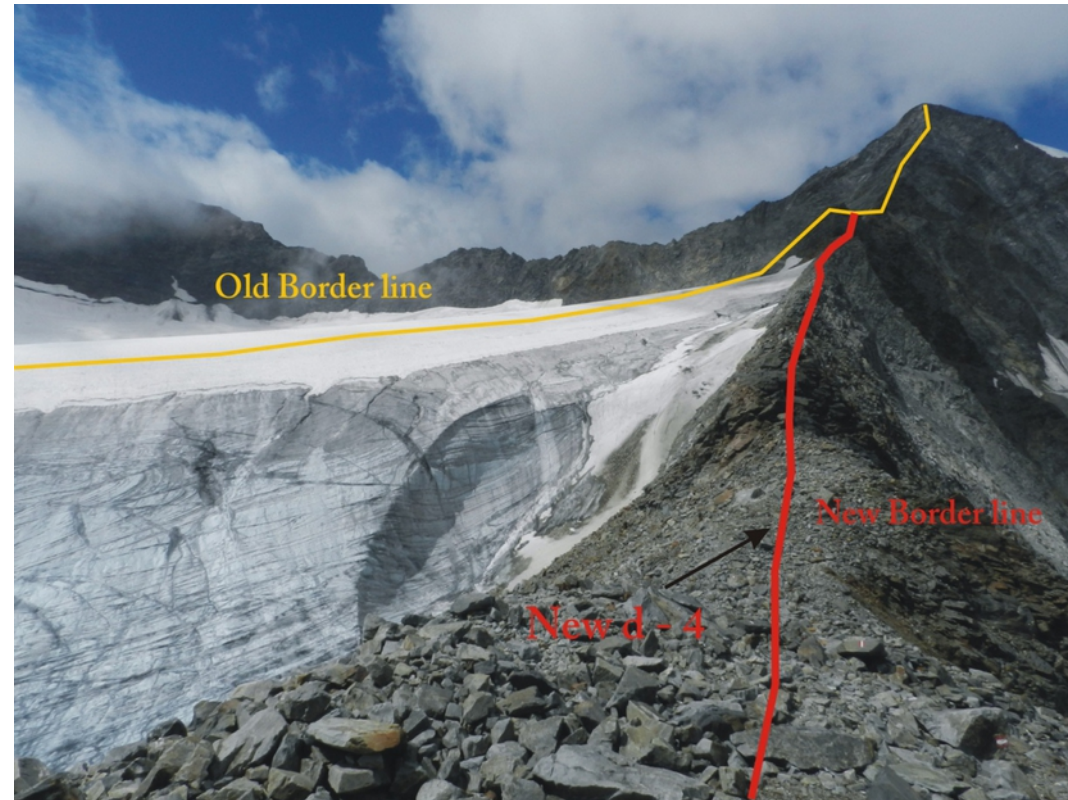


Valle Aurina 2880 m



Maintenance of state boundaries

- During 2013 IGM has completed the acquisition of boundary lines in digital format.
- Boundary lines are derived from:
 - digitization from official maps
 - photogrammetric survey
 - field measurements (e.g. Moving boundary on glaciers)



Thank you for your attention!