

FIG WORKING WEEK 2012
May 6-10 2012
Rome, Italy



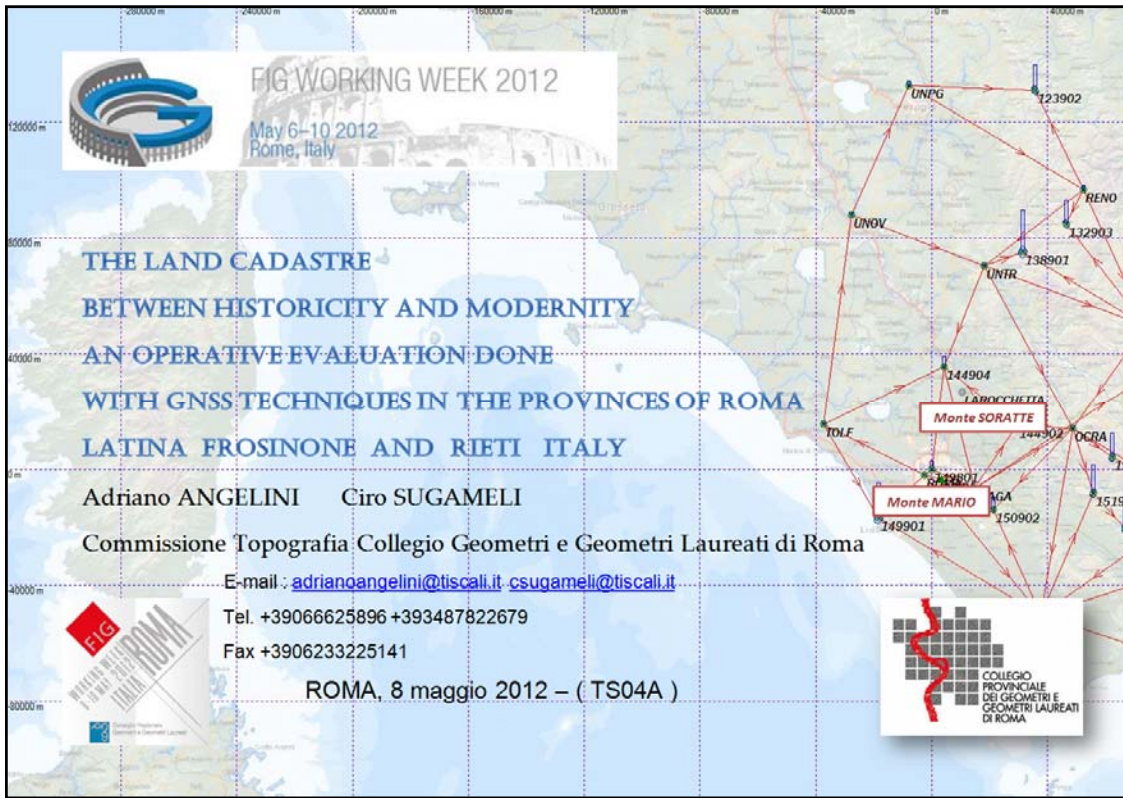
**THE LAND CADASTRE
BETWEEN HISTORICITY AND MODERNITY
AN OPERATIVE EVALUATION DONE
WITH GNSS TECHNIQUES IN THE PROVINCES OF ROMA
LATINA FROSINONE AND RIETI ITALY**

Adriano ANGELINI Ciro SUGAMELI

Commissione Topografia Collegio Geometri e Geometri Laureati di Roma

E-mail : adrianoangelini@tiscali.it csugameli@tiscali.it
Tel. +39066625896 +393487822679
Fax +3906233225141

ROMA, 8 maggio 2012 – (TS04A)



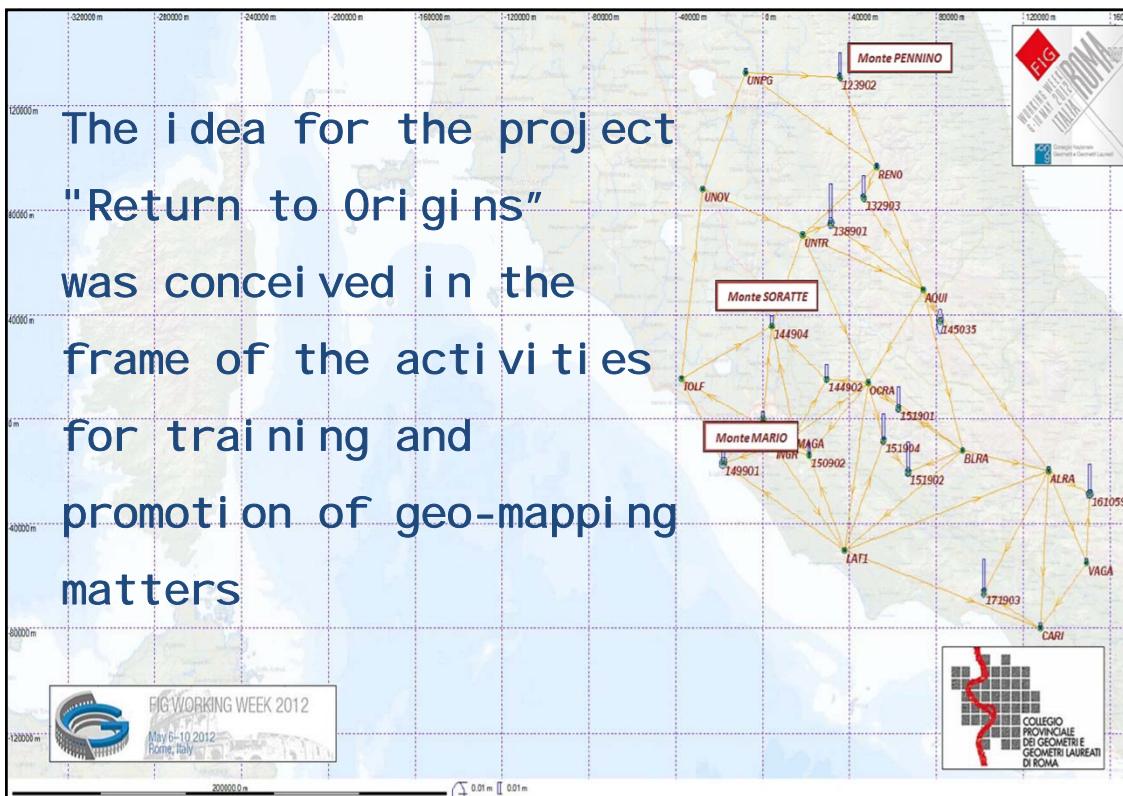
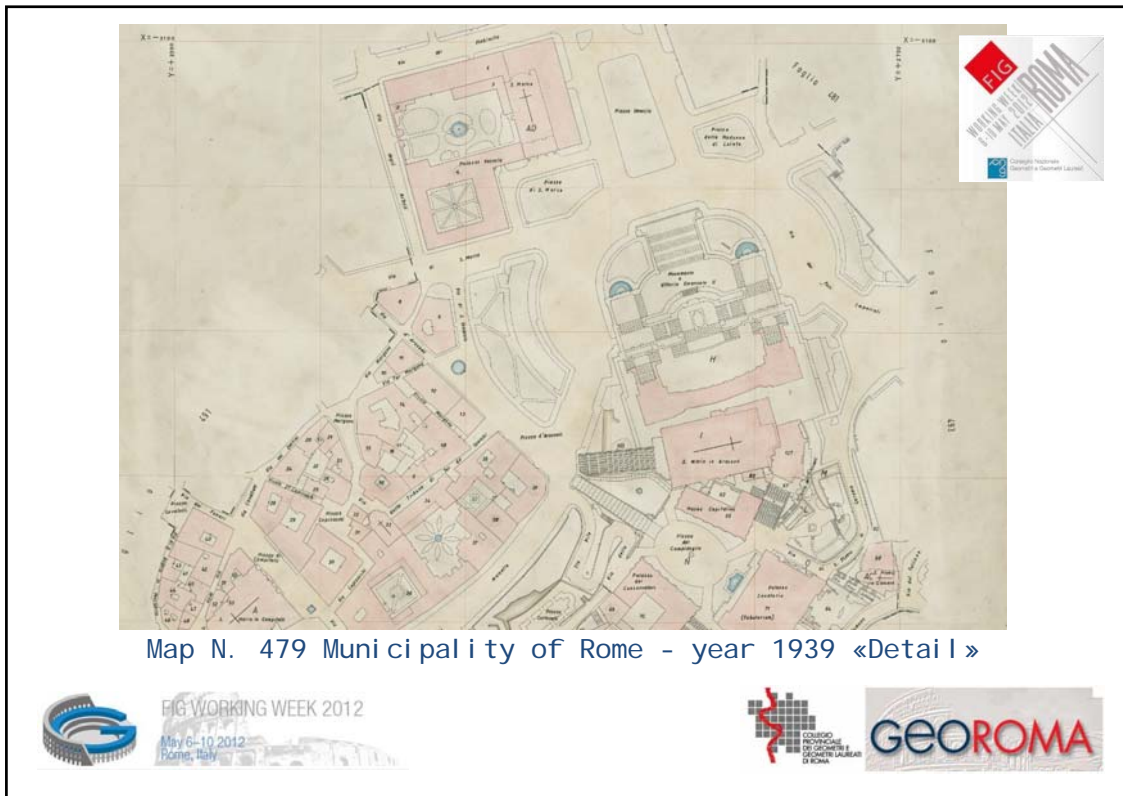
Map N. 479 Municipality of Rome - year 1939

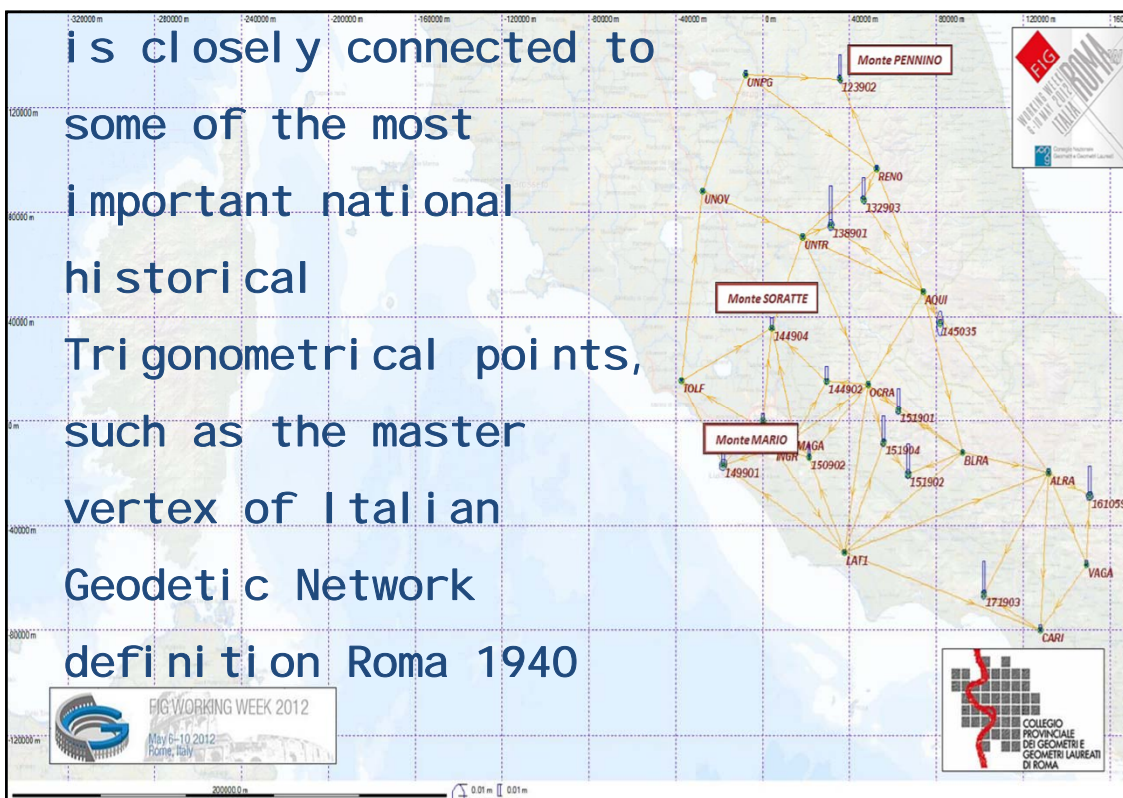
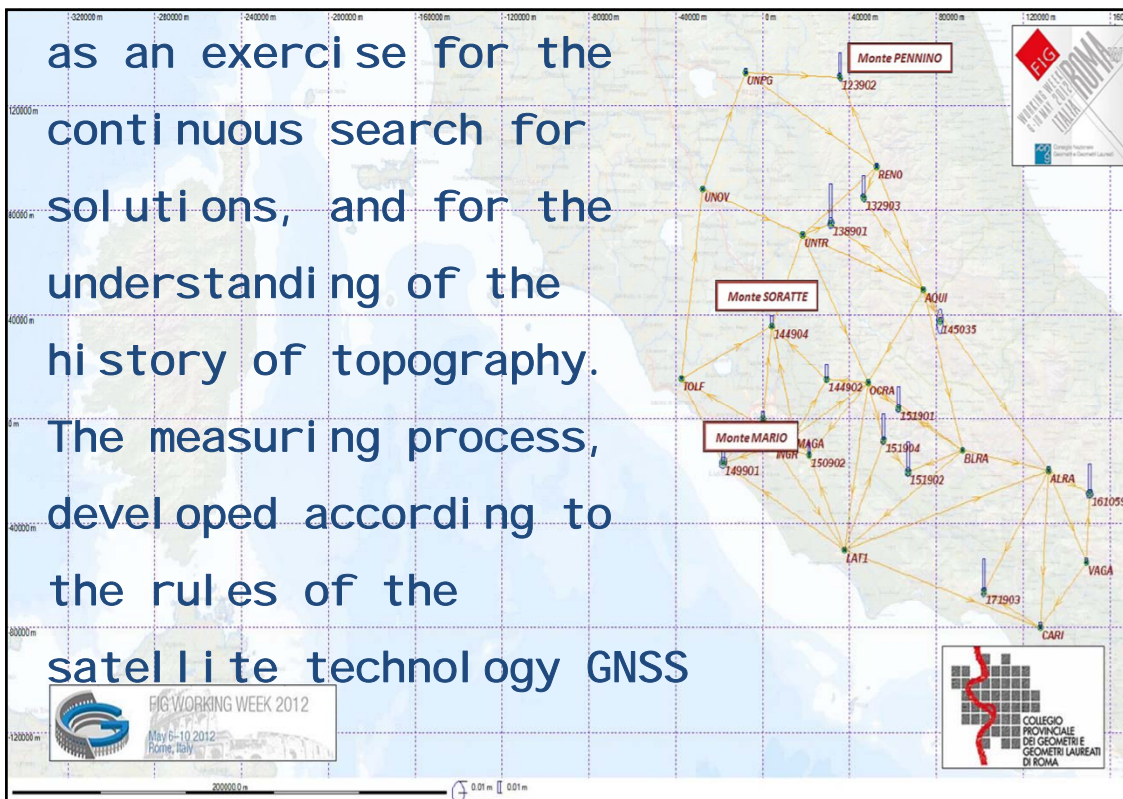


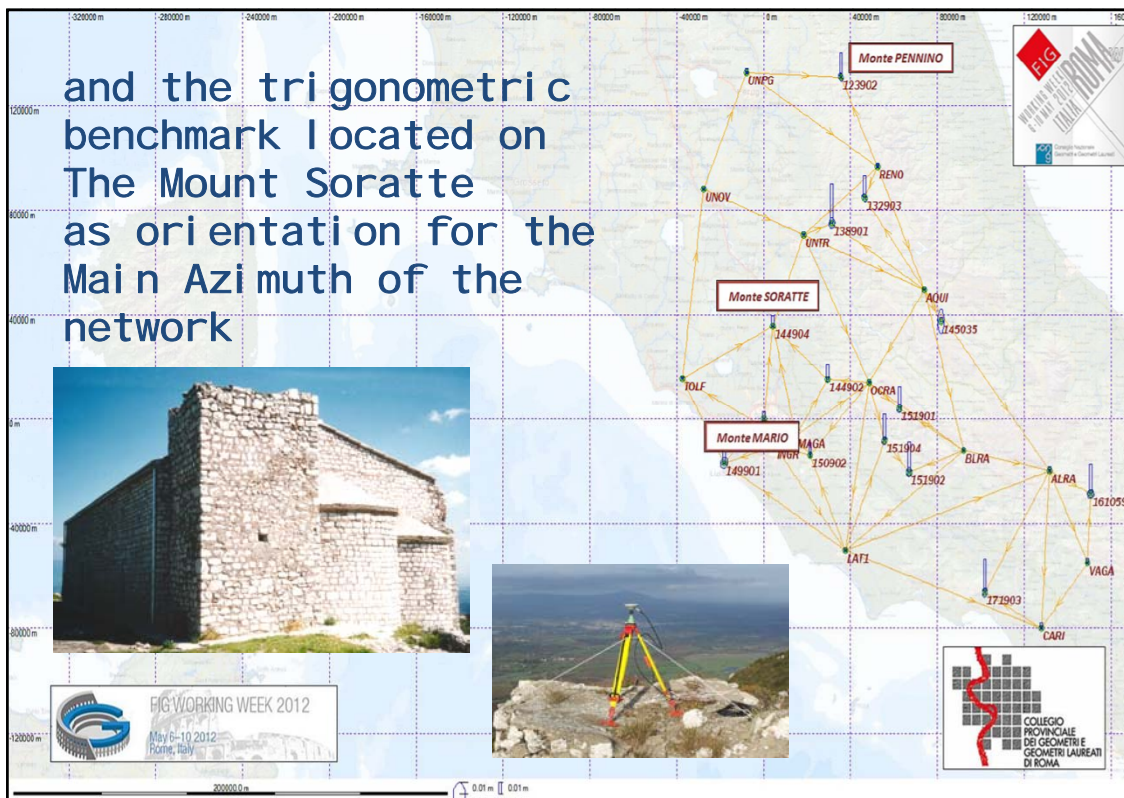
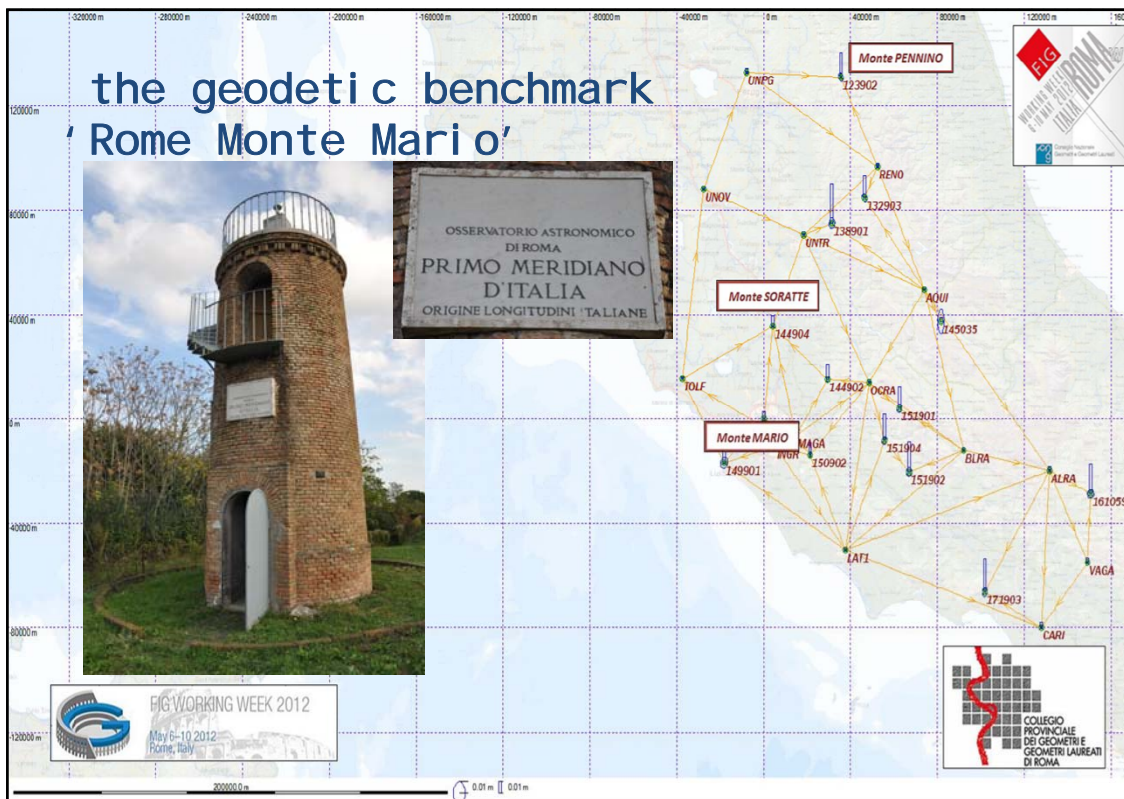
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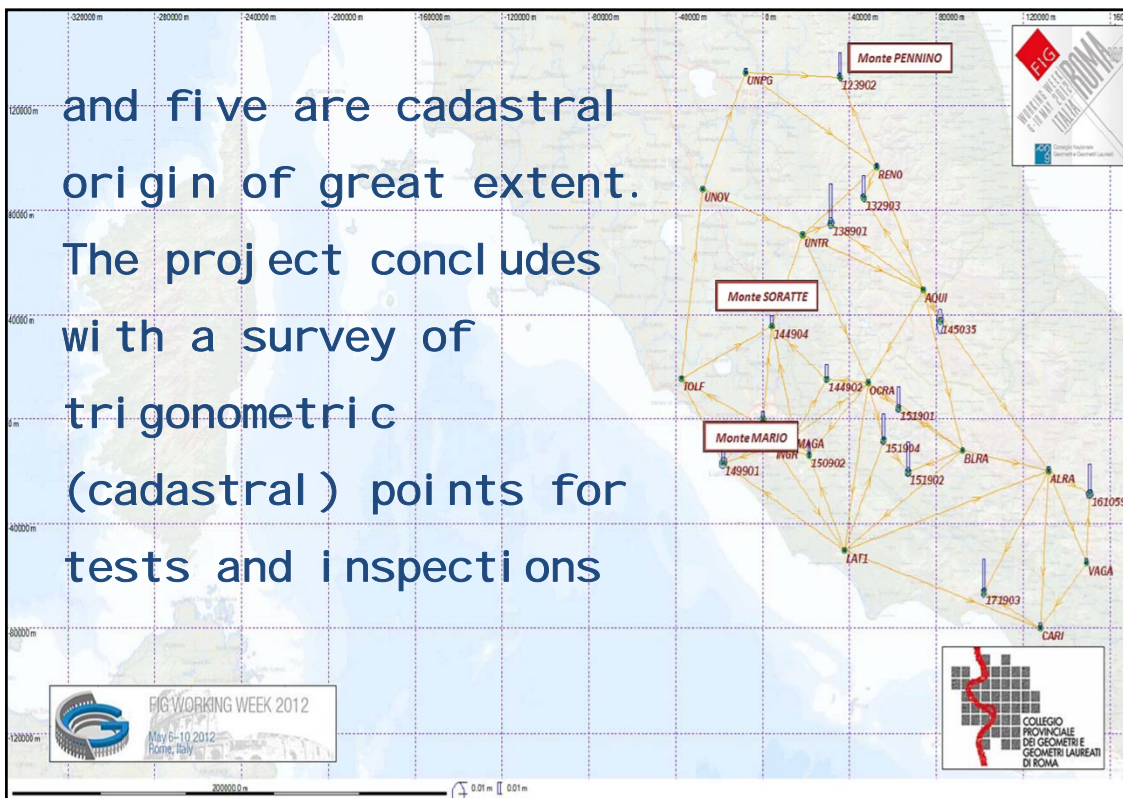
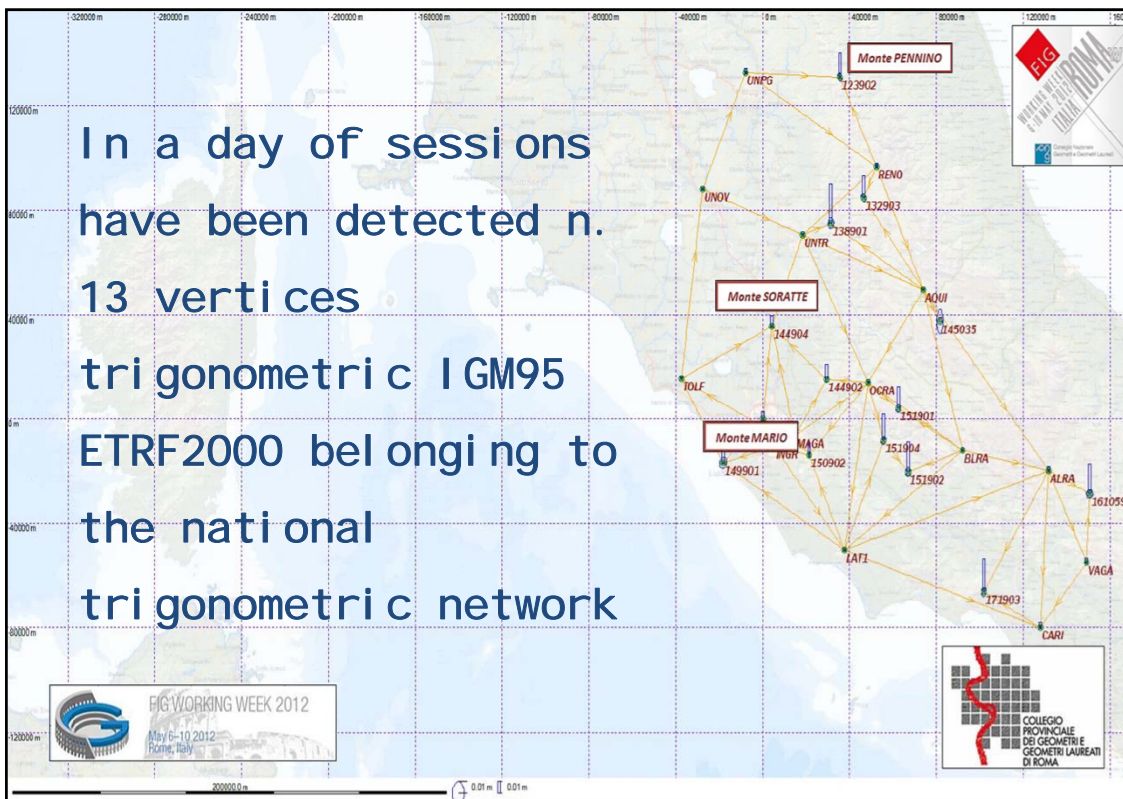


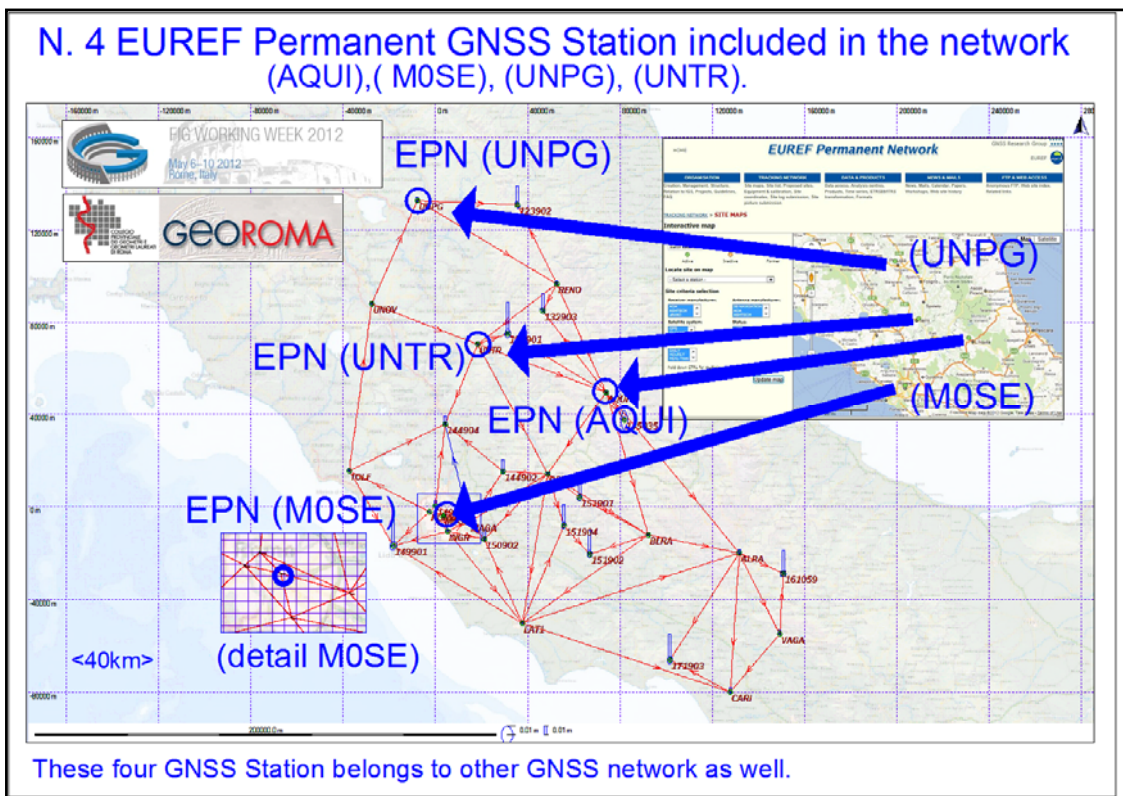
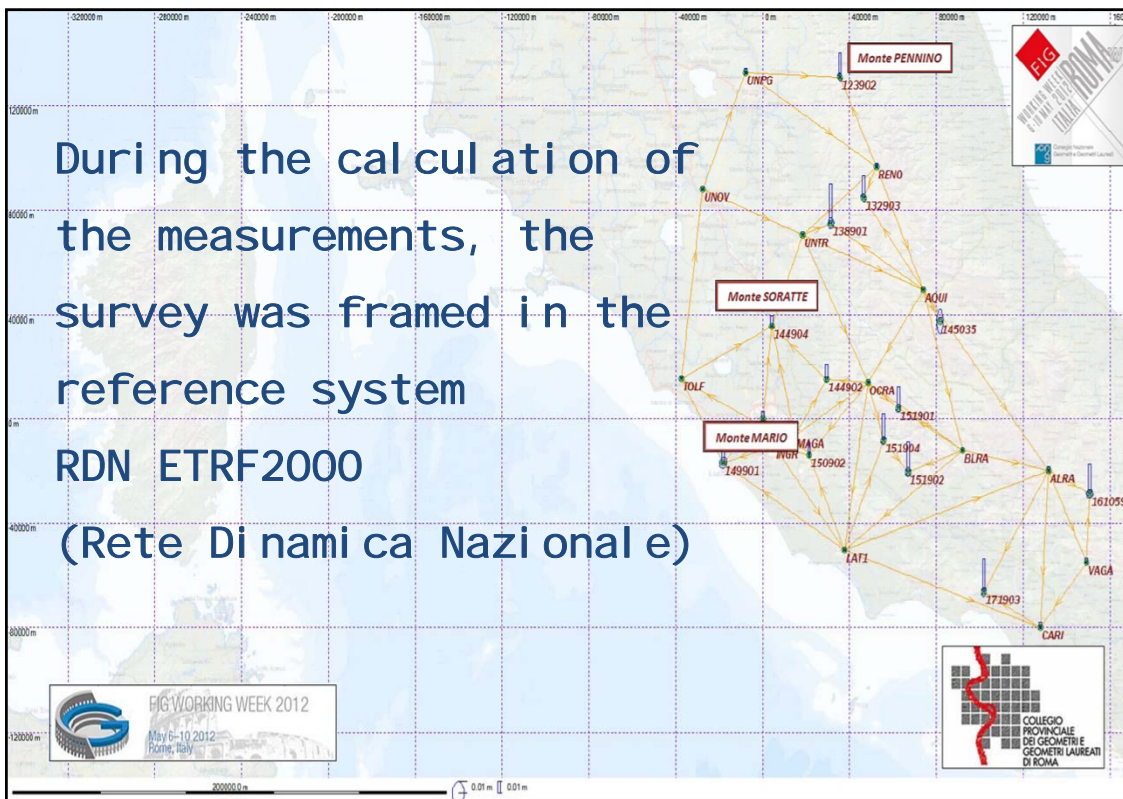
GEOROMA

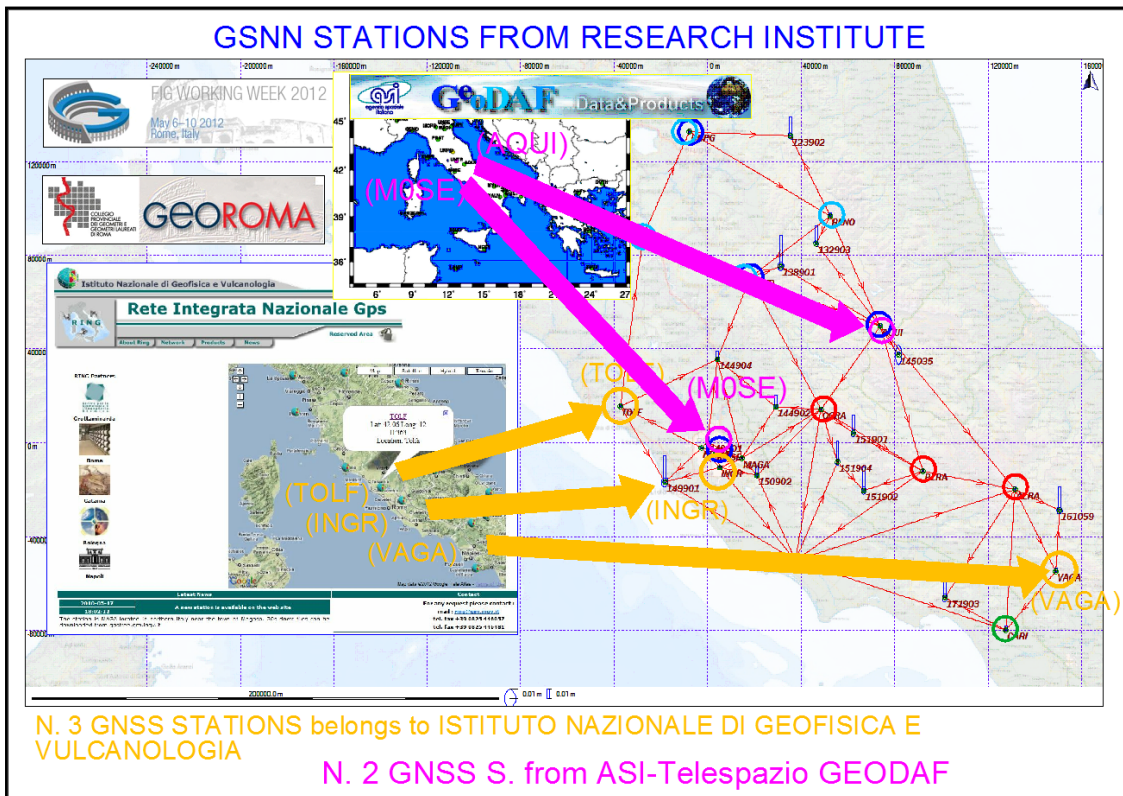
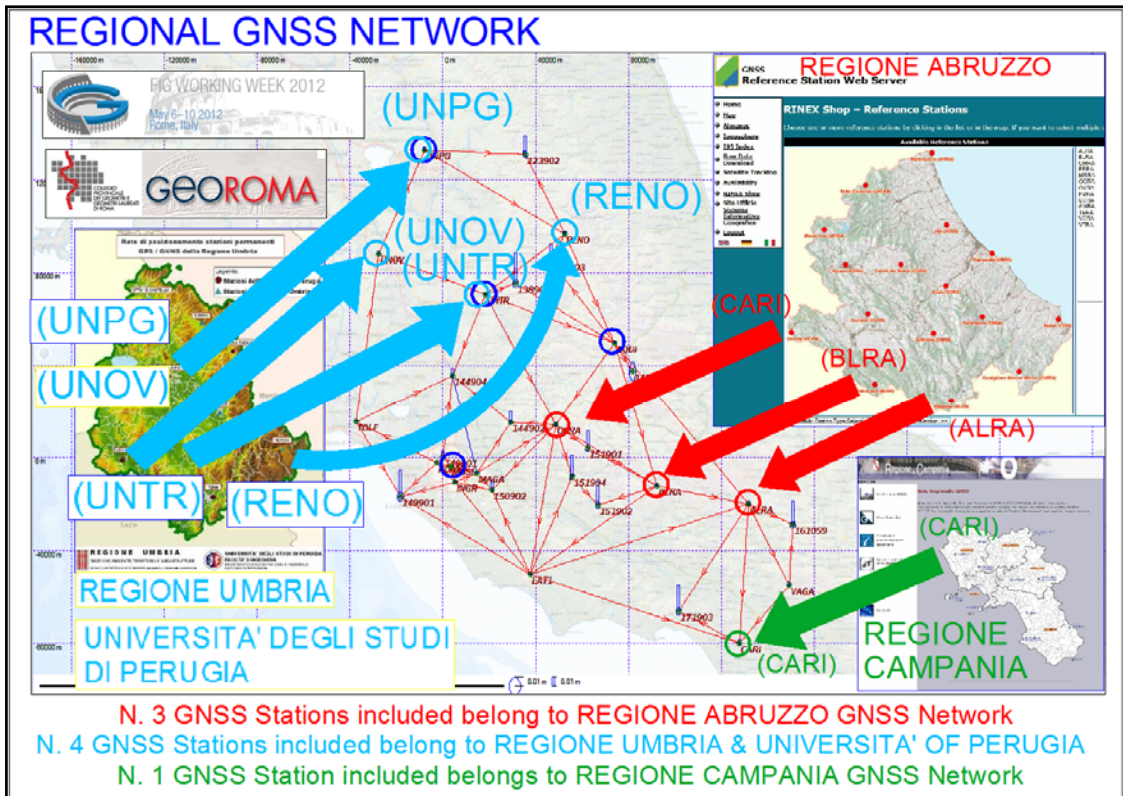


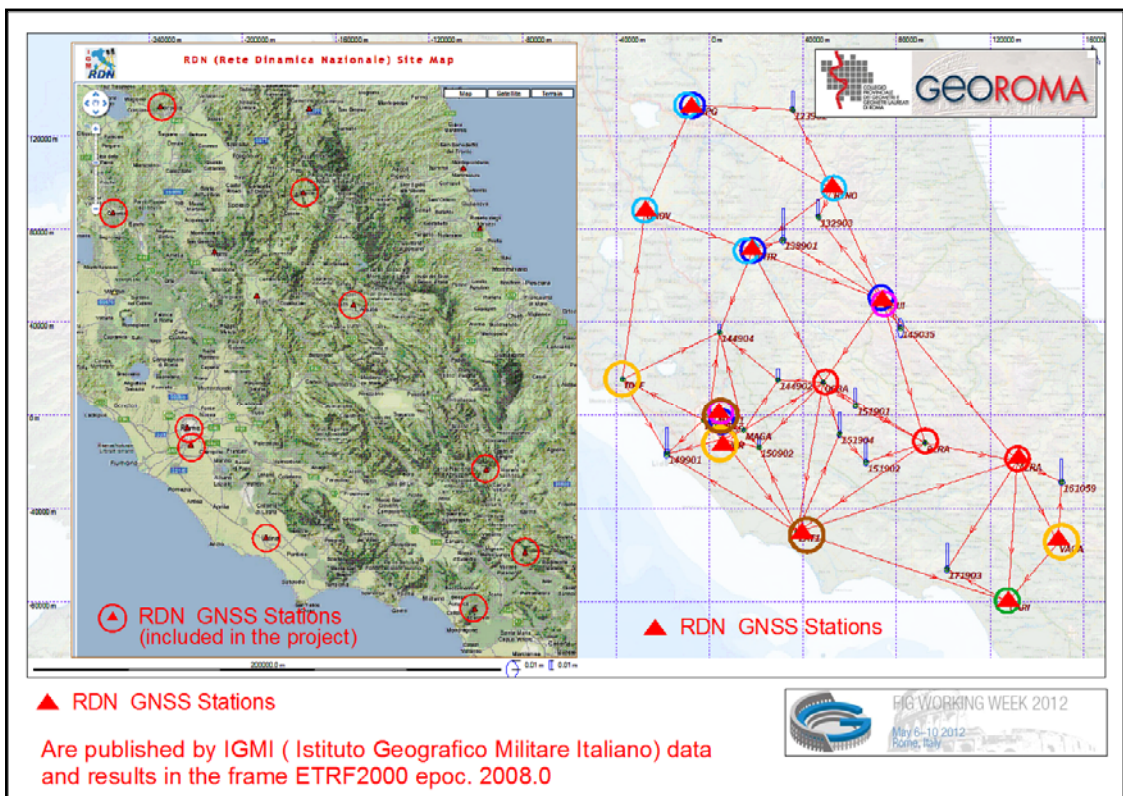
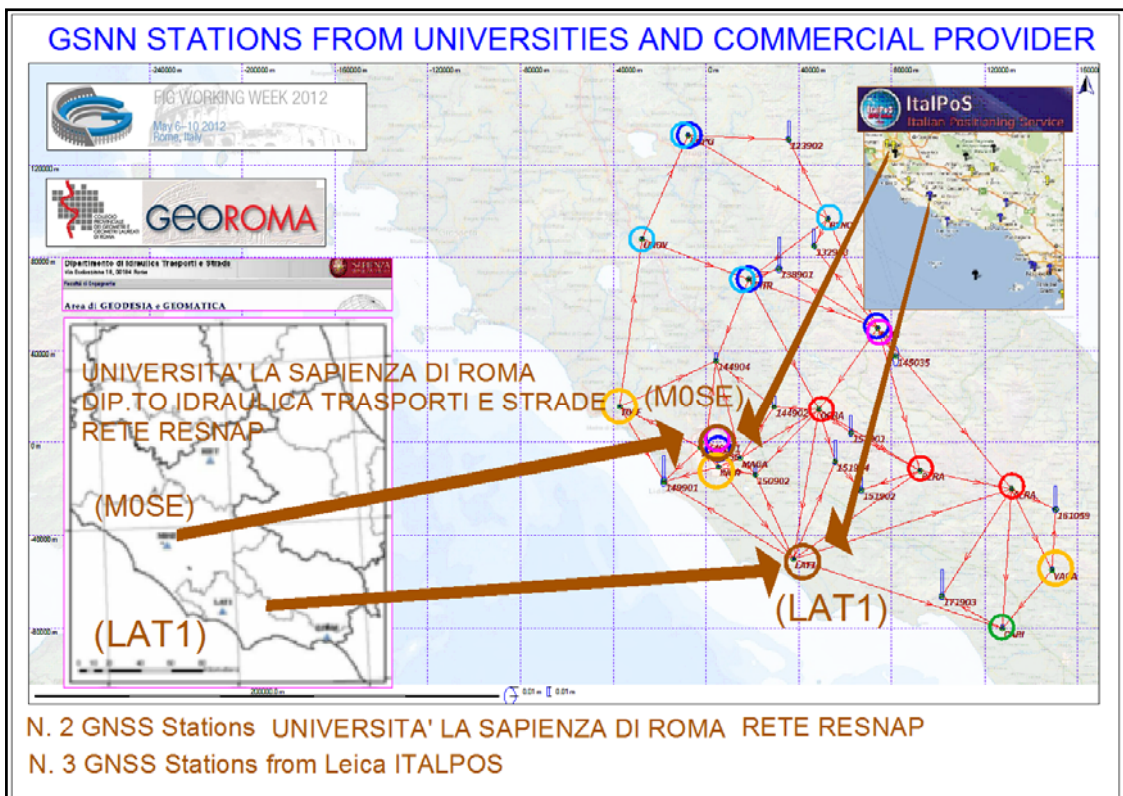


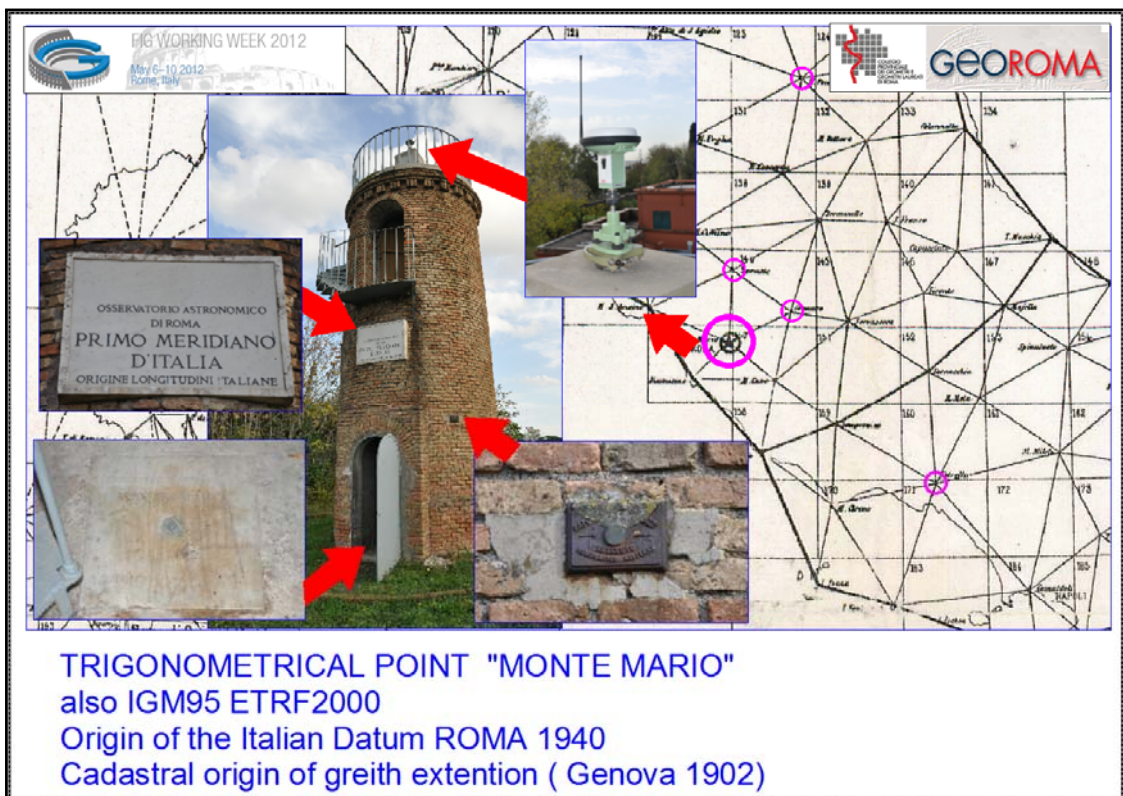
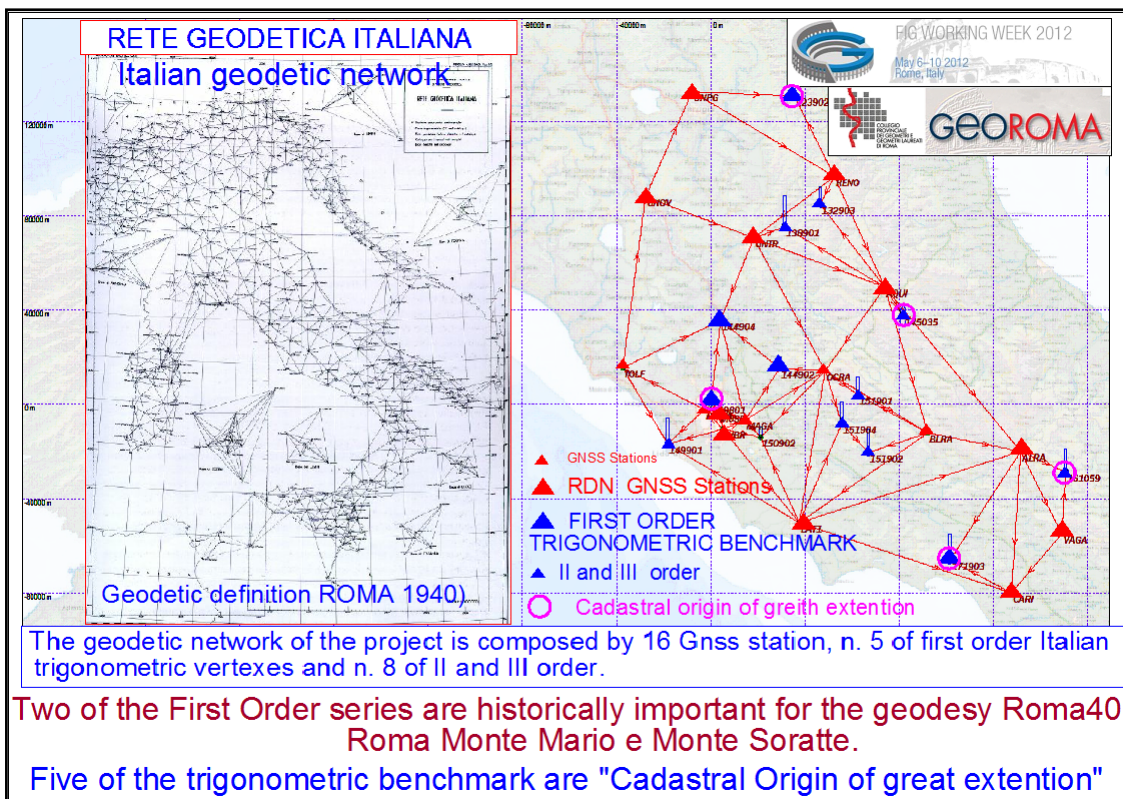












M. SORATTE
IGM95 ETRF2000 N° 144904
ROMA 1940 N° 144065

M. PENNINO
IGM95 ETRF2000 N° 123902
ROMA 1940 N° 123129
Cadastral Origin of Greith Extention

M. PETRELLA
IGM95 ETRF2000 N° 171903
ROMA 1940 N° 171903

M. GENNARO (already ZAPPI)
IGM95 ETRF2000 N° 144902
ROMA 1940 N° 171903

FIRST ORDER TRIGONOMETRICAL POINT

M. SORATTE
IGM95 ETRF2000 N° 144904
ROMA 1940 N° 144065

M. PETRELLA
IGM95 ETRF2000 N° 171903
ROMA 1940 N° 171903

M. GENNARO (already ZAPPI)
IGM95 ETRF2000 N° 144902
ROMA 1940 N° 171903

N. PENNINO IGM95 ETRF2000 N. 123902 ROMA 1940 N. 123129 Cadastral Origin Genova 1902

Stations
N. partly known st. 1 (MOSE)
N. Unknown st. 29
Observation
1281 (427 baselines)
Degrees of freedom
1194

Loops n. 31,
Lenght
13 to 250 km
Mi sclosures
0.0 to 0.2 ppm

Absolute Error Ellipses
(2D - 39.4% 1D - 68.3%)

Station	A [m]	B [m]	A/B	Phi	Sd Hgt [m]
123902	0.0039	0.0026	1.5	-22°	0.0207
123903	0.0034	0.0023	1.4	-31°	0.0195
138901	0.0047	0.0032	1.5	4°	0.0337
144902	0.002	0.0015	1.4	25°	0.0124
144904	0.0014	0.001	1.3	25°	0.0084
145035	0.0029	0.0024	1.2	-8°	0.0206
149801	0.0013	0.001	1.3	25°	0.007
149901	0.005	0.0034	1.5	18°	0.0288
150902	0.0017	0.0012	1.5	14°	0.0104
151901	0.0035	0.0026	1.4	12°	0.0194
151902	0.0039	0.0028	1.4	9°	0.0259
151904	0.0035	0.0025	1.4	13°	0.0235
161059	0.0037	0.0032	1.2	-1°	0.0255
171903	0.0042	0.003	1.4	3°	0.0284
ALRA	0.0006	0.0005	1.2	7°	0.0032
AQUI	0.0005	0.0004	1.3	7°	0.003
BLRA	0.0005	0.0004	1.2	7°	0.0028
CARI	0.0008	0.0007	1.2	8°	0.0048
INGR	0.0003	0.0003	1.2	5°	0.0017
LATI	0.0005	0.0004	1.2	5°	0.0024
MOSE	0	0	1	90°	0
MAGA	0.0004	0.0003	1.2	4°	0.0023
OCRA	0.0005	0.0004	1.2	6°	0.0026
RENO	0.0006	0.0005	1.3	7°	0.0033
ROMA	0.0003	0.0002	1.2	7°	0.0013
TOLF	0.0005	0.0004	1.2	6°	0.0027
UNOV	0.0006	0.0004	1.3	5°	0.003
UNPG	0.0006	0.0005	1.3	6°	0.0033
UNTR	0.0005	0.0004	1.3	6°	0.0029
VAGA	0.0007	0.0006	1.2	4°	0.0041

Redundancy

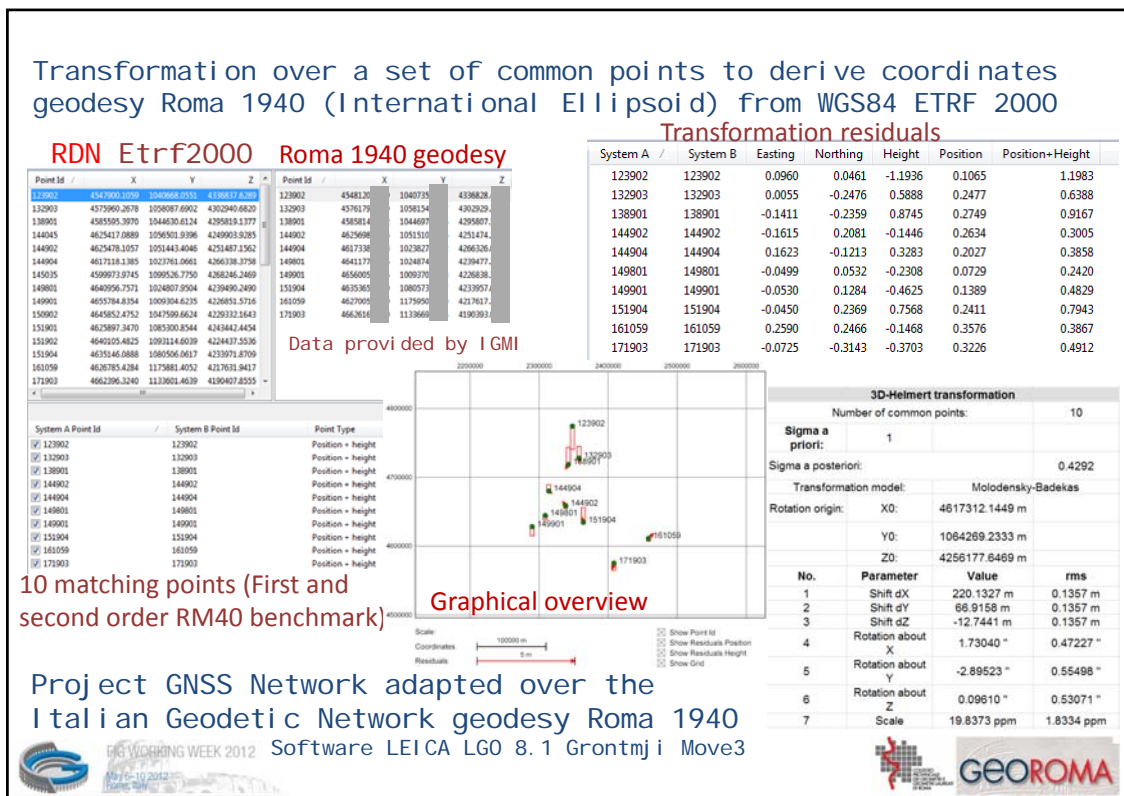
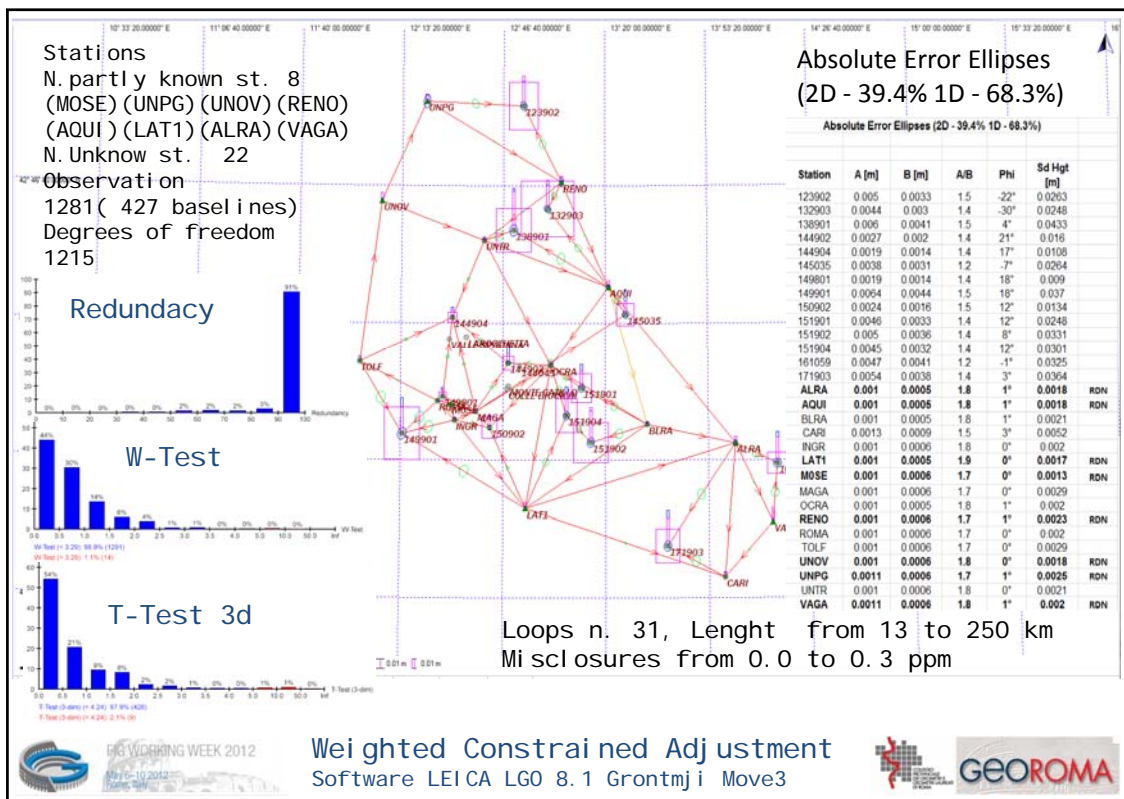
W-Test

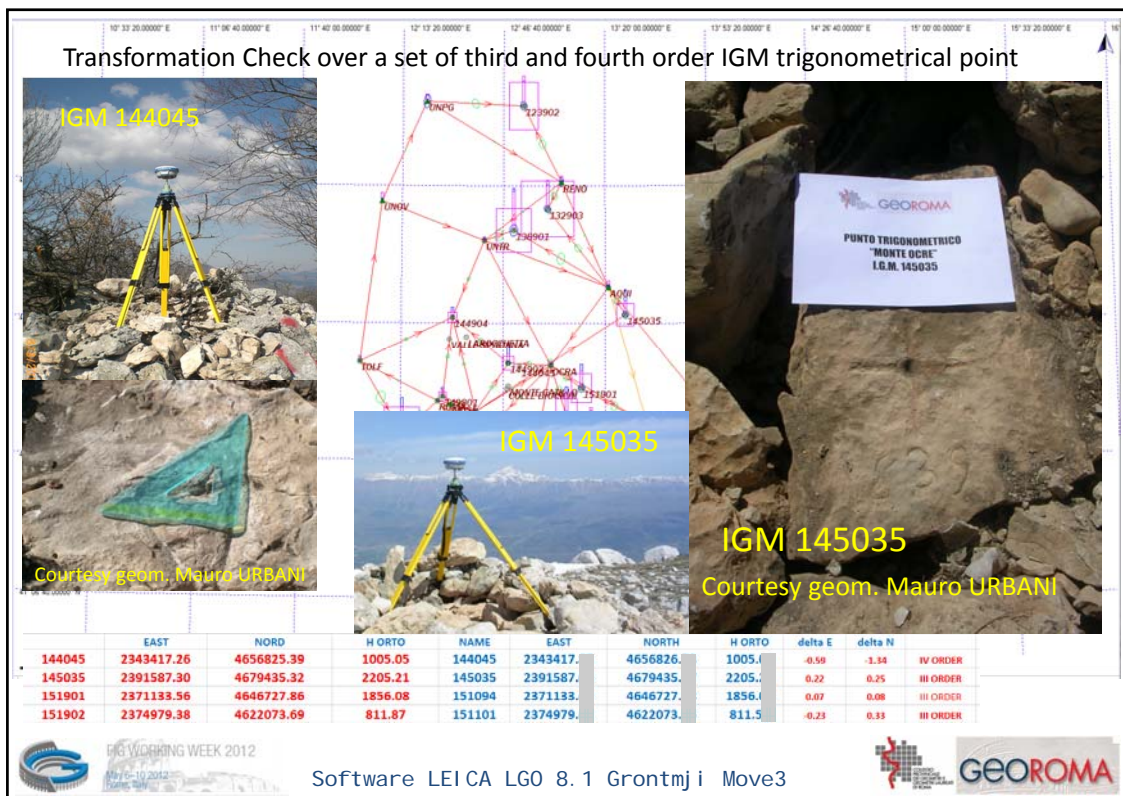
Differences VS RDN Coordinates

System A	System B	Easting	Northing	Height
ALRA	ALRA	0.0127	0.0064	-0.0071
AQUI	AQUI	0.0010	-0.0023	-0.0070
LATI	LATI	-0.0067	-0.0040	0.0057
MOSE	MOSE	-0.0068	-0.0033	-0.0116
RENO	RENO	0.0008	0.0066	0.0000
UNOV	UNOV	0.0017	-0.0018	0.0070
UNPG	UNPG	0.0046	-0.0047	0.0029
VAGA	VAGA	-0.0073	0.0031	0.0101

T-Test 3d

Mi ni mal I y Constrai ned Adjusment
Software LEICA LGO 8.1 Grontm j i Move3





Conclusions

We felt an obligation, as Professional Surveyors, at work in our territory, to follow the path opened by our predecessors, to whom we think with our utmost respect and profound esteem.

We will continue in this direction, believing that this project could be a line of faith for further development of the profession of surveyor, in all areas of work, tied to the past, within an historical cartographic evolution or even, in a modern way, related to engineering works.



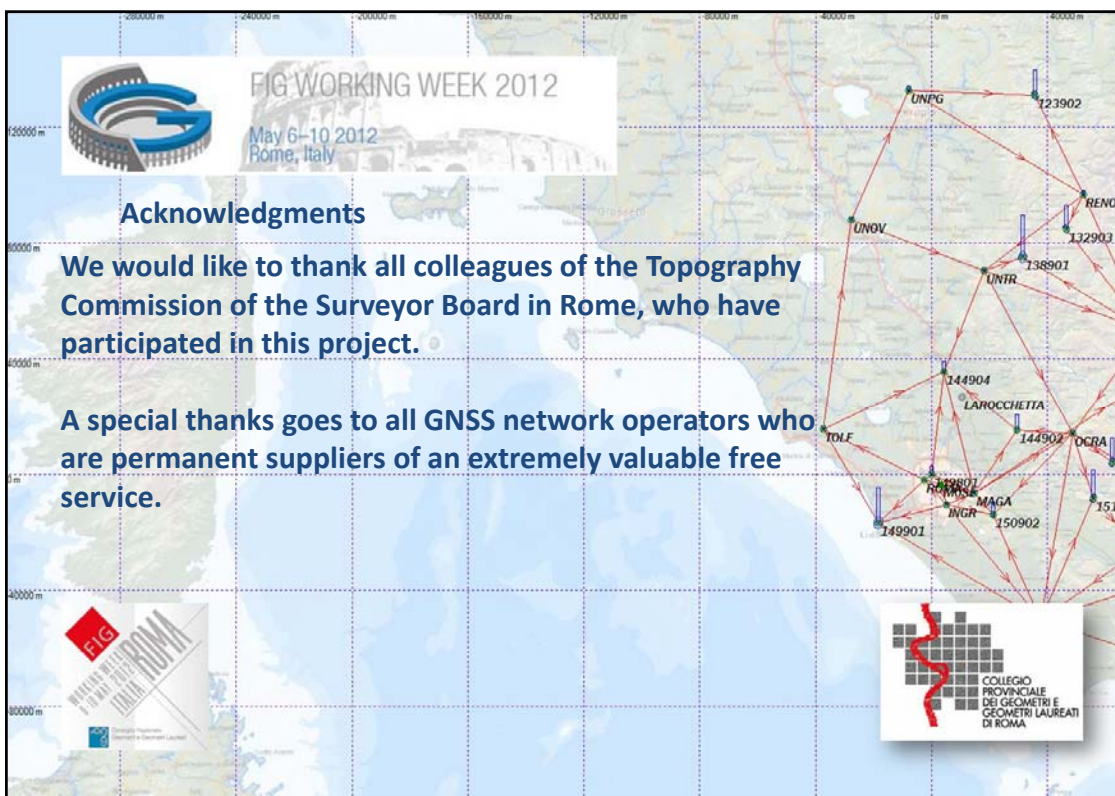


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Acknowledgments

We would like to thank all colleagues of the Topography Commission of the Surveyor Board in Rome, who have participated in this project.

A special thanks goes to all GNSS network operators who are permanent suppliers of an extremely valuable free service.

FIG
FEDERAZIONE ITALIANA GEOMETRI
UNIONE ITALIANA PERITI CIVILI

COLLEGIO PROVINCIALE DEI GEOMETRI E GEOMETRI LAUREATI DI ROMA



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THANK YOU FOR YOUR ATTENTION

Adriano ANGELINI Ciro SUGAMELI
Commissione Topografia
Collegio Geometri e Geometri Laureati di Roma
E-mail : adrianoangelini@tiscali.it csugameli@tiscali.it
Tel. +39066625896 +393487822679
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GEOROMA

