

Matera CGS VLBI Analysis Center

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Abstract This paper reports the VLBI data analysis activities at the Space Geodesy Center (CGS) Matera, from January 2013 through December 2013, and the contributions that the CGS intends to provide for the future as an IVS Analysis Center.

1 General Information

The Matera VLBI station became operational at the Space Geodesy Center (CGS) of the Italian Space Agency (ASI) in May 1990. Since then, it has been active in the framework of the most important international programs. The CGS, operated by e-geos (a Telespazio/ASI company) on behalf of ASI, provides full scientific and operational support using the main space geodetic techniques: VLBI, SLR, and GPS.

2 Activities during the Past Year

During 2013, the following activities were performed at CGS:

- Global VLBI Solution cgs2013a
The main VLBI data analysis activities at the CGS in the year 2013 were directed towards the realization of a global VLBI solution, named cgs2013a, using the CALC/SOLVE software (developed at

NASA/GSFC). The main and final characteristics of this solution are:

- Data span:
1984.01.04 - 2012.12.27 (4356 sessions)
- Estimated Parameters:
 - Celestial Frame: Right ascension and declination as global parameters for 845 sources,
 - Terrestrial Frame: Coordinates and velocities for 81 stations as global parameters, and
 - Earth Orientation: Unconstrained X pole, Y pole, UT1, Xp rate, Yp rate, UT1 rate, dpsi, and deps.

- IVS Tropospheric Products
Regular submission of tropospheric parameters (wet and total zenith path delays, and east and north horizontal gradients) for all VLBI stations observing in the IVS R1 and R4 sessions continued during 2013. Currently, 1,205 sessions have been analyzed and submitted, covering the period from 2002 to 2013. The results are available at the IVS products ftp site.
- CGS Contribution to IERS EOP Operational Series
Since 2008, CGS has been delivering IERS R1 and R4 session EOP estimates as a regular contribution to the IERS EOP operational series. The whole cgs2007a solution, available when the contribution started, has been delivered to IERS as a reference series updated by periodic EOP solution submissions.

Centro di Geodesia Spaziale (CGS) - e-geos SpA

CGS Analysis Center

IVS 2013 Annual Report

2.1 Staff at CGS Contributing to the IVS Analysis Center

- Dr. Giuseppe Bianco, responsible for CGS/ASI (primary scientific/technical contact).
- Dr. Rosa Pacione, responsible for scientific activities, e-geos.
- Dr. Roberto Lanotte, geodynamics data analyst, e-geos.

3 Future Plans

- Continue and improve the realization of our global VLBI solution, providing its regular update on time.
- Continue to participate in the IVS analysis projects.
- Start to contribute to the “Daily Solution Files (DSNX)” project of the IVS, providing the datum-free normal equations.