



News Items:

- A UAW is being organized by: Rothacher, Herring and Gross, in Pasadena, CA, June 27-28, 2014, following the IGS Workshop.
- Next AWG meeting prior to 19th ILW, final date/location TBA (**AI: ECP**)

AC and CC Reports

ASI: the 1993-2013 solution time series has been submitted. The 1983-1992 will be submitted by mid-May. A few ACs have submitted their solutions for the combination, a first check of the looseness (reference frame uncertainty) has been made. The looseness has the expected values for all the ACs: 5 mas and 10 mas in the X, Y and Z rotation respectively, 0.5 and 1 mm for the X, Y and Z translation respectively and 0.05 ppb for the scale. The DGFI solution was not checked due to some problems in the SINEX files, to be investigated.

BKG: the new models will be implemented and the use of the data before 1993 is still under evaluation. The submission of the 1993-2013 is expected by the end of May.

DGFI: the 1998-2013 delivered, the rest of the time series is done but not checked. As regards the new models, the ocean model FES2004 has been used due to some problems with GOT4.7 and the IERS convention for the mean pole instead of the discrete values distributed to the ACs. The 1993-2013 time series will be submitted by mid-May.

ESA: a preliminary v59 for 1993-2013 has been submitted without the adoption of the new models. A first rough series for 1983-1992 has been done. GGM05S and the time variable gravity will be implemented in the final time series. The mean pole will follow the IERS convention and the ocean pole tide will consider only C21, S21 (higher terms not used). The time series will be submitted by mid-May, as best effort.

GFZ: The solutions are underway: SLRF2008 and data handling file adopted. Open issues: adopting and testing GGM05S, time variable gravity, mean pole, albedo, FES2004 ocean tidal loading. The complete series from 1983 will be delivered by the end of May.

GRGS: The 2008-2013 time series has been delivered to the data centers but the 1993-2013 series is now complete. The 1983-1992 will be completed in a few days. The complete solution set 1983-2013 will be delivered by the end of May.

NSGF: The CoM file for Ajisai has been compiled. SATAN updates: SOFA subroutine for precession/nutation, new mean pole to be adopted, GGM05S, parallelized multi-satellite solutions to be faster. The complete time series will be delivered by the end of May. A work has been carried out to test the weekly solution with TRF and biases estimated together; some results have been presented in terms of estimated range bias and translation/scale time series. With the simultaneous estimation, a scale change is introduced by -0.90 ppb for 2002-2009.0.

JCET: the 1993-2013 solution time series has been submitted but, due to an issue of constraints, it will be submitted again (*submitted on May 6, 2014*). The mean arc residual WRMS is around 7 mm. The difference between the mean pole of the IERS conventions and the mean pole from the estimated EOP was shown, the change of direction at 2005.0 makes the IERS convention not realistic. The 1983-1992 time series will be submitted by the middle of May.

LLR: The LLR NPs have been screened. The data available are not all in CRD format. McDonald and Matera are now tracking at low level, APOLLO reduced its accuracy in 2011-2012 (i.e. cm instead of mm level), Grasse (re-start in 2009) has good performance since end of 2011, Wettzell LLR tracking is still pending. Weighted annual residuals are decreased in the last years to 3-4 cm. A LLR solution has been submitted for ITRF2013 even if it is not compliant with the requirements of ITRF2013. It will be used for comparison. A work has been carried out to check the impact of more LLR data for relativity (\dot{G}/G). The mystery of Lunokhod 2 at Luna 21 position has not been solved yet: data are collected from the array but, considering the pictures from LRO, it should be facing in the wrong direction.

ITRF2013 discussion

Altamimi summarized the status of the Service submissions: IVS will deliver by the end of May, IGS is waiting for other 3 solutions and the combination will be ready by mid June, IDS will have the final by the end of May.

ILRS Combination should be ready by the end of June. A preliminary combination will be sent to IGN as soon as it is ready.

UAW

People from ILRS: Pearlman, Bianco, Luceri, Pavlis, Appleby, (?)

Topics: Systematic errors, updated models, GNSS tracking from SLR.

Harmonization of the AWG analysis procedures and modeling standards:

- Adoption of updated models for the standard products. Test of others gravity models with the time dependent coefficients. The switch will be done by the end of summer, beginning of autumn, in coordination with the new Pilot Project (PP) on low degree harmonic estimation and the inclusion of LARES in the operational products.

- PP on bias and coordinates estimated together to be started after the ITRF2013 submission
- PP on low degree gravity terms. All of the S/W packages used are capable of estimating low degree gravity harmonics. ESA will check if their S/W complies. NSGF is almost ready. Once the estimation is included, LARES data will be used in the operational products. JCET is already routinely using the LARES data (NOT in the official products!).
- The NT atm. loading & gravity implementation will continue as an internal AWG PP to resolve the issues we noticed during the GGFC/ITRS PP.
- The naming convention and the directory structure at the data centers should be revised. It has a lower priority at the moment.
- Orbital products: orbits from the 2014 re-analysis to be submitted by the ACs for combination soon after the ITRF2013 combination is completed.

Announcement

ESOC is organizing a POD conference at Darmstadt in May 2015 (TBD), details to be announced. Topics of the meeting: GNSS, LEO, MEO; GTO, GEO, techniques: GNSS, SLR, DORIS, radar altimetry, algorithms and models, H/W and processing concepts, interaction between different POD stakeholders. (contact person: Werner.Enderle@esa.int)

Next meeting

An AWG clinic for SLR station operators and SLR data users will likely occur during the 19th ILW. The next AWG meeting will take place in the week before the 19th ILW, probably on Friday October 24th or Saturday 25th. Pavlis will send out the announcement.

Action items:

ECP: Test various static gravity models of vintage similar to GGM05S and report to the AWG

ECP: Investigate the availability of a UMBC conference/meeting room for the next AWG meeting

JM: Coordinate with Randy Ricklefs the conversion of all validated LLR NPs into CRD format and submission to ILRS DCs

Model summary:

Models accepted for re-analysis	
Gravity field, static part	GGM05S
Gravity field, time dependent part	$C_{20}, C_{21}, S_{21}, C_{30}, C_{40}, C_{50}, C_{60}$ from CSR/UT
Ocean tides (OT)	GOT4.7, FES2004, FES2012
Atmospheric tides	Ray&Ponte model 2003 Bode and Biancale 2003
Albedo	Any model, e.g. Knocke
A priori reference frame	SLRF2008
Ocean tidal loading (OTL)	GOT4.7, FES2004, FES2012 (<i>depending on adopted OT model!</i>)
Mean pole	Value and rate time series distributed by JCET based on official IERS product
Center of Mass correction	Use ILRS CoM correction tables (using NERC's s/w package)

Participants:**Master List of attendees, AWG @ EGU 2014, April 28,
TUW, Seminar Room 124 3rd floor, 8:30 – 12:30**

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