



- **ILRS News and announcement of the ILRS Technical Workshop, Metsovo, Greece, Sept. 14-19**
- **BRIEF AC and CC Reports on the reanalysis for ITRF2008**
 - ASI – AC & CC:
 - delivery of the 1983-2008 v20 time series,
 - station qualification – analysis of Golosiiv and Altay data. The data quality of the two stations is acceptable and can be inserted in the routine analysis. There are discontinuities in the Golosiiv data acquisition. The site coordinates have been estimated using all the data available and ASI will distribute the values at epoch 2000.0.
 - CRD format: check of the McDonald CRD data. Datafiles contain a different numbers of data: some passes or points missing in one of the two format and some points have different epochs. When epochs are identical, the residual differences are below the millimeter: higher differences are generally due to range differences. Estimated coordinate differences smaller than half a millimeter.
 - Assessment of Herstmonceux corrections. The corrections received by Appleby, and applied in the latest re-analysis, don't completely solve the discontinuities in the Up component time series.
 - BKG: a new s/w will be soon used for the BKG analysis. It is an upgrade of Bernese and will substitute Utopia. The solutions for the benchmark test will be sent by next September.
 - DGFI – AC & CC::
 - delivery of the 1983-2008 v20 time series – a problem exists in the orbital fit before 2000 and in the estimated LOD. For the latter one, the solution has been probably found, a new s/w version is ready and tests will be done in a couple of weeks.
 - Daily solutions not delivered because of the LOD problem
 - The weekly SP3 orbits are still in the SLRF2005 reference frame, not loose
 - Station qualification for Golosiiv and Altay (see presentation)
 - CRD format check done (see presentation)
 - GA: not attending, no report
 - GFZ:
 - time series 1983-2008 submitted, 2003-2006 resubmitted due to a problem in the bias application for Zimmerwald. The 2007 Lageos-2 data were lost and not

considered in the final product (10% of data). The solutions for 2007 will be submitted again in the first week of May

- CRD format check will be ready by the end of April
- **GRGS/OCA:**
 - time series 1993-2008 submitted
 - operational submission of the daily product implemented
 - CRD format check to be done by end of next summer
 - Station qualification made for Golosiiv. Altay will be checked by next week (see presentation)
 - Resurvey of the Grasse site for all systems in September
- **JCET:**
 - time series 1976-2008 submitted, 2003-2006 resubmitted due to erroneous application of the bias for Zimmerwald. 1983-1992 resubmitted (v21) with additional restrictions on bias adjustments.
 - CRD validation check implemented and applied to MLRS (7080). Additional checks will be implemented to identify and flag cases of missing NPs and entire passes as identified by the checks done by ASI and DGFI.
 - Report from NEOS on the DAILY and WEEKLY products comparison to USNO finals over the past year. The two products are converging as more ACs are contributing to the DAILY process.
- **NSGF:**
 - time series 1983-2008 submitted. The wrms of the residual site coordinates is very high.
 - NSGF recognizes that there is perhaps a s/w migration problem that caused the abnormal WRMS of their recent submissions and will work to resolve it ASAP
 - Stanford counter corrections: after several attempts to use engineering predictions failed, it is recommended that for the periods clearly identified between counter swaps, the analysis-derived long-term biases be used.
- Report from LLR group: Still working on a LLR AC acceptance test.
- **Reports from candidate ACs (AIUB, ESOC, MCC, CAS, etc.):**
 - ESOC - Pavlis reported on the benchmarking process status. ESOC submitted a long time series but they are not yet following the ILRS bias policy. Their intention is the routine contribution.
 - MCC asked to start the benchmark process. Glotov was invited to attend the AWG meeting but no one from MCC showed up.
 - CAS/SHAO: Xiaoya Wang presented the status of the SHAO analysis as ILRS Associate Analysis Center: QC, SLR post-processing, SLR long time series. The first analysis for the benchmark process will be submitted after the end of this year, as soon as their s/w can handle multiple satellites.
 - NCL – still interested but not sure to be able to routinely contribute.

Pavlis announced that the new candidate AC benchmark procedures have changed (simplified) and the candidates should consult the ILRS web page for details.

□ **Specific data analysis issues identified from the reanalysis:** 1983 – present

ASI CC reported on the ILRSA product. The combination process took a great effort mostly due to the ACs' inattention in following the AWG guidelines for biases and edits. A detailed report will be sent (was already done on April 29, 2009 12:57:55 PM EDT, see

email from Cecilia with subject matter: “**Comments/remarks on contributing solutions to ILRS combination**”), to the ACs to avoid similar problems in the future reanalysis with major examples presented. DGFI CC reported briefly on the ILRSB product and corroborated the findings of the ASI CC and their conclusions. A missing at the time presentation was subsequently sent to the chair and it is included in the attachment with all other presentations.

The discontinuities found by Zuheir for Zimmerwald and Haleakala were due to the non-application of AWG identified biases by some ACs and they will disappear in the next combination version. The discontinuity for Herstmonceux cannot be avoided without a change in the applied corrections: **Graham Appleby asked the AWG to re-analyse the 1993-2006 data using the corrections estimated in the multi-year solution. The request was accepted even if that implies a delay in the ILRS submission to IERS (new deadline May 30, ACs must deliver the 1993-2006 reanalyzed series to the CCs as soon as possible and no later than May 20!!!).**

□ **New/Returning station qualification process:** ASI, DGFI and GRGS analysis for Altay and Golosiiv (see earlier reporting above)

□ **Other products from Pilot Projects, Modeling issues, etc.:**

- SP3c Orbit files: The process is in standstill and will be resumed soon after the completion of the re-analysis for ITRF2008
- New data format use & testing (CRD): Test for McDonald made by ASI, DGFI and JCET. The ACs involved in the process (ASI, DGFI, GRGS and JCET) will exchange the results obtained for McDonald as a test case and then will share the tests to be done on the sites available for testing: one AC testing one site.
- Low-degree harmonics of the gravity field from SLR (degree/order 2): many ACs are ready to distribute them (next deadline July 15th 2009)

□ **Other topics ???,**

- T2L2 experiment. Pierre Exertier reported on the project: 200-300 passes available per month, not all in CRD format. The best stations are able to reach 300-400 ps in time stability (e.g. MLRO, Grasse, Wettzell). Three types of stations have been identified, based on their time stability:

1. less than 1 ns
2. between 1 and 20 ns
3. larger than 20 ns

A campaign will be soon organized to calibrate the time system in Europe. An experiment of time transfer between Europe and USA is under consideration.

□ **ILRS Project & Products Status** – Peter Dunn reported on some new/modified pages on the ILRS web site

Action Items:

- CC report to ACs on their errors (DONE)
- ACs to resubmit new solutions no later than May 20, 2009
- ACs to pick-up the Orbit file (SP3c) PP in June, try to move into operational phase “soon”
- ACs & CCs to work on 2nd degree gravity terms in our products in July

- Position papers to be presented at the September workshop: assignments will go out “soon” (ECP)
- Plan on contributions to the JoG special ILRS issue, call will come out “soon” (ECP)

PDF of all presentation material will be available shortly at:

http://ilrs.gsfc.nasa.gov/working_groups/awg/awg_activities

New bias assessment from our Vienna results and after additional discussions and tests following the discussions in Vienna

ALL of the new biases identified below will appear in the new release of the “Data Handling” and “Data discontinuities” files, so this presentation below is only given for explanatory purposes.

- There is one thing that we decided in Wien 2008 and probably never explicitly told to the CC:

Beijing 7249 should NOT be considered a core station.

- After discussions on the Zimmerwald biases and additional tests that Cinzia performed with the ASI series, it is decided that we SPLIT the currently applied bias:

7810 020529 041228 -20

to **two** biases, so it becomes:

7810 020529 030311 -15

7810 030311 041228 -22

- A jump has been identified in the Quincy 7109 height time series and after discussions we have decided that it is best to adopt a 10 mm bias from the beginning of 7109 operations to 1988:347, to be subtracted from 1-way ranges as usual.

This is supported from the system change log file:

71090806 1 1988347 Baseline configuration

New sites' coordinates to be adopted by ALL AC/AAC and CC for use in official ILRS products:

Over the past few months, a new Russian station at Altay and a returning system in Golosiiv are producing and delivering SLR data to ILRS. After careful examination of their recent data by ASI and DGFI, and given the tracking record of the two sites to date, we have decided that these stations can now contribute to the ILRS official products (WEEKLY and DAILY). The data from these sites will be released by the two DCs (CDDIS and EDC) to the usual directories and should be picked up and included in the analyses by all. These sites do not have SLRF2005 coordinates, so please use the following coordinates for Golosiiv and Altay propagated at 2000.0 when analyzing the data from these sites. The coordinates were derived by ASI on the basis of several months of recent tracking as it was presented at our last AWG meeting.

	coordinates	estimated at		propagated at	
		8/1/2008		1/1/2000	
1824	STAX	3512989.1350	m	3512989.3014	m
1824	STAY	2068968.8850	m	2068968.7636	m
1824	STAZ	4888817.4050	m	4888817.3334	m
1824	VELX	-0.0194	m/y		
1824	VELY	0.0141	m/y		
1824	VELZ	0.0083	m/y		

Velocities from GPS GLSV

		10/1/2008		1/1/2000	
1879	STAX	543405.8633	m	543405.8851	m
1879	STAY	3955302.3010	m	3955302.4864	m
1879	STAZ	4957821.0120	m	4957820.8627	m
1879	VELX	-0.0025	m/y		
1879	VELY	-0.0212	m/y		
1879	VELZ	0.0170	m/y		

velocities from Nuvel1-A (Unavco Plate Motion calculator)

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