April 19, 2017

ILRS Quality Control Board (QCB)
Telecon
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Participants: Horst Mueller, Erricos C. Pavlis, and Carey Noll. Alexandre Couhert, Mike Pearlman, Tom Varghese, Toshi Otsubo

Data Bias Pilot Project (Erricos)

The Analysis Centers have submitted their DBPP L1, L2, and L1+L2 solutions including the additional wavelength data (Wetttzell and ARGO), but some used different conventions. This has been made consistent and everything is now loaded up and will be available for comparison. Is it on the website yet? The combination of these solutions will be the basis for discussion on the transition into an operational Station Systematics Data Product at the Vienna ASC Meeting. The question remains whether AC's not participating in this activity can continue on AC status.

Web Based Station Performance Tool (Erricos)

Five ACs currently provide station performance parameters on a pass-by-pass basis on LAGEOS-1 and -2 for consolidation into the ILRS report cards compiled by Mark Torrence. JCET has been developing an on-line tool to digest the pass-by-pass inputs from the AC's and display them in different modes (plots, fits, moving averages, etc.). This tool will provide users with a basis for comparing AC results, making detailed examinations of the data, and making standardized reports that can be interpreted by station personnel and augmented with highlights and recommended actions. The work is still slowed by the need to import the numbers by hand. Mike will ask Mark T. if he can provide the daily numbers in text files. In addition to LAGEOS ½ files, the new QC Report now includes (1) Jason SLR data relative to DORIS/GPS orbits (provided by CNES) and (2) SLR data on GNSS satellites relative to GNSS determined orbits (provided by CODE). All of the QC files are up to date. The beta version of this tool is ready for testing (http://geodesy.jcet.umbc.edu/QC/).

Erricos says that the new QC web tool combined with fast communications should be able to provide a data-screening tool to alert the stations promptly to pass discontinuities in the time series. This is going to be a tradeoff between communication and issues of false alarms. We will need to determine what would be meaningful and how we ascribe a confidence level to those criteria.

Erricos also reported that the have completed a history from 2008 to the present on L1, L2, and LARES data distribution and some other data parameters.

Site Logs

Some site log format issues have been corrected.

David and others are looking into the current process to suggest how we might standardize and document the Site Log procedure.

A team including Horst, Matt, and Randy Ricklefs are working on efforts to update the Site Logs to include more historical information and more detail on some areas.

Range Dependent Errors

Horst has been looking at data on the geodetic satellites (from Starlette to Etalon) for any evidence of systematic trends in range bias. He has seen nothing to date, but he hopes to have something soon. At the Etalon level, system noise may be masking any trend information.

Horst will continue working on the range dependent error analysis.

Full-Rate Data

In response to a request from Pierre Exertier and Frank Lemoine, all stations have been asked to submit all of their Jason FR data to EDC or CDDIS. Additional data has started flowing.

Normal Point Tests

Horst has been trying to validate that normal point calculations done at the station are done in a consistent manner by computing NP's from FR data and comparing them with the station provided NP's. Matt is also working on this.

Low Elevation Data Modeling

Horst is looking at the available low elevation (below 20 degrees) data on LARES to see the influence on station height and pass bias. A few stations (MOBLAS-5, MOBLAS-5, Changchun, Matera, and Graz) can track down to 10 degrees.

Horst will continue working the low elevation data analysis

Data Population on LAGEOS and Other Satellite Passes

Toshi has developed some charts to show station pass parameters (#NP's per segment, # segments per pass, and pass length) for a suite of satellites from LEO to Etalon (see

attached plots). There is a wide diversity, but there is also an inconsistency in whether or not stations are interleaving satellites and how they aggregate their data. Some submit their data in pass segments and some combine segments into passes. To the analysts, it makes no difference, but it can lead to inconsistencies in the formulation of data yield.

The next step will be to look at the GNSS Satellites.

Carey will send a message to the stations asking about their data submission procedure.

The Changchun Station had been noted as taking too small a NP sample on Lageos passes, in particular. In response to our inquiry, they appear to have improved their coverage.

Toshi and Horst will see if they can quantify the improvement.

The ILRS has formed a Study Group to recommend new criteria for evaluating (and rewarding) station performance than just pass numbers and estimated biases. Mark Torrence is the Study Committee lead; they are targeting a recommendation by the Riga Workshop.

Toshi will forward a copy of his charts to the Study Group.

Station Tools

We need to define tools/procedures/suggestions to help the stations detect system problems on-site, and to address issues when diagnostics are received from the QC process. Matt has started discussion on this within the Networks and Engineering Standing Committee; input from the stations on practices that they use might be useful.

Matt has established the on-line forum tool. It currently has about 70 members. Some messages have already been posted. Take a look.

Other Topics

In our 1 mm long-term interest, it probably is a good idea to do a rigorous component-by-component examination of the SLR systems, trying to understand all error sources in measurements. We should discuss this with Ivan Prochazka.

Next meeting: Thursday, May 17 at 13:00 UTC, 09:00 EDT, 14:00 in UK; 15:00 in Central Europe; 22:00 in Japan.

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