ILRS Quality Control Board (QCB)
Telecon
December 20, 2017

Next meeting: Wednesday, January 24 at 13:00 UTC, 09:00 EST, 14:00 in UK; 15:00 in Central Europe; 23:00 in Japan.

Participants: Frank Lemoine, Horst Mueller, Carey Noll, Toshi Otsubo, Erricos Pavlis, Mike Pearlman, Matt Wilkinson

Station Systematic Errors Pilot Project – SSE PP (Erricos)

NERC has submitted its SSE PP contribution. The combination process to estimate the aggregated station biases will begin in January. If other centers submit their contributions later, they can be added. An operational version of the Data Systematics operational tools is planned for release by the 2018 EGU.

Web Based Station Performance Tool (Erricos)

The beta version of this tool is ready for testing (http://geodesy.jcet.umbc.edu/QC/). JCET, DGFI, HITU, and SHAO have submitted compliant data sets in ITRF 2014 for at least one year prior to June 15, 2017. The replacement data set from the Russians is still outstanding.

DGFI contribution will cease in early 2018 due to lack of manpower.
Erricos is writing a memo on the use of this tool.

ACTION Erricos: Check with the Russians on what they have done in this transfer to ITRF 2014.

Site Logs (Carey)

Local time has been added to the new site log format. Christian is working on the web based editing process and the transfer of current site log information into the new format. Randy will manage the implementation. He will work with Carey and Christian to update the related ILRS webpages.

We have agreed to give the stations 90 days (from completion of set up) to update their site logs.

Tom Varghese was going to give us an update on status of the site logs for the NASA stations.

Range Dependent Errors

Horst has not seen any significant range dependence biases, but system noise and errors on center of mass correction might be hiding some effect. This topic will wait for the new center of mass corrections and will be left to the systems bias activity. This work will need the updated satellites' CoM corrections.

Full-Rate Data and NP testing

Matt is preparing software to evaluate the stations' NP formulation process from FR data. Many of the stations are already submitting FR data, so Matt can start with those stations. First priority should be the spherical geodetic satellites. It has been agreed that FR data would be a good tool for diagnostic work, and will also help us diagnose timing issues using the Jason 2 satellite and follow-on missions. Carey circulated a list of those stations are presently submitting FR data (see attached list).

It was noted that some recent passes from Changchun showed significant time biases that were not detected at the station.

Matt has verified that the FR data from the KHz systems will not overburden the communication or data storage capability at the Operations Centers, if stations stick to the 1000-point rule. It is not necessary that the NP tests be done for the same time period.

ACTION CB: Request that all stations submit their FR data on all satellites with their routine data submission. At some point, we may also request historical data especially on LAGEOS and LARES.

Low Elevation Data Modeling

Low elevation studies have not yielded much. Some data is available from a few stations (MOBLAS-5, MOBLAS-5, Changchun, Matera, and Graz). DGFI has shown that there is a slight improvement in the separation between height and range bias, but the data has been very sparse. Any studies that continue should refer to the JCET catalogues and focus on the spherical satellites. Anybody interested?

Data Population on LAGEOS and Other Satellite Passes

Efforts are underway at CDDIS to express all data in terms of passes (not pass segments). The issue of synchronous satellites is not resolved.

The Study Group tasked with recommending new criteria for evaluating (and rewarding) station performance (rather than just number of passes) is still thinking. Any recommendation needs to be reasonably easy to apply and interpret. Forward any ideas to Mark Torrence. One thought is to weigh each pass by the number of NP's to recognize the degree of pass coverage. The CB should also issue a document of best practices for tracking operations including pass coverage and time separation of calibrations.

Station Tools

Matt has started discussion on this within the Networks and Engineering Standing Committee and on the forum on stations tools and practices that might be useful.

The station forum has attracted some interest; especially when general attention is called to a special topic. The Forum has about 70 members. If you have not tried, you are encouraged to do so. 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.

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Telecon info:
Passcode: 317382

USA (toll free)	1-844-467-4685		Italy (toll free)	0 800 977 597
Austria (toll free)	0 800 006 089		Italy, Rome	+39 06 452 366 22
Austria, Vienna	+43 (0) 1 25301 0163		Japan (toll free)	0 066 3386 1015
France (national)	0 811 655 211		Japan, Osaka	+81 (0) 6 4560 2100
France (toll free)	0 800 949 765		Japan, Tokyo	+81 (0) 3 4560 1264
France (toll free)	0 805 101 207		UK (national)	0 845 355 5040
France, Paris	+33 (0) 1 70 37 14 61		UK (toll free)	0 800 358 8173
Germany (national)	0 1801 003 798		UK (toll free)	0 800 279 4867
Germany (toll free)	0 800 320 2291		UK London	+44 (0) 20 7154 2976
Germany (toll free)	0 800 589 1850			
Germany, Frankfurt	+49 (0)69 66777 5747			
Germany, Munich	+49 (0) 89 7104 24681			

Stations producing FR data, November 01-30, 2017 (as of December 19, 2017)

Site Name	Sta.	NPT Data		FR Data	
		No. Sats.	No. Pass*	No. Sats.	No. Pass*
Altay	1879	50	282		
Arequipa	7403	21	213	21	213
Arkhyz	1886	5	9		
Badary	1890	30	353	30	355
Baikonur	1887	32	90		
Beijing	7249	56	293		
Borowiec	7811	5	6	5	6
Brasilia	7407	21	31		
Changchun	7237	80	1870	80	1868
Grasse	7845	12	105	7	64
Graz	7839	62	330		
Greenbelt	7105	46	701	46	712
Haleakala	7119	23	292	23	292
Hartebeesthoek	7501	39	255	39	254
Herstmonceux	7840	73	750	72	903
Irkutsk	1891	39	258		
Katzively	1893	17	115	17	115
Kiev	1824	7	20	7	20
Komsomolsk	1868	46	368		
Kunming	7819	46	467		
Matera	7941	40	399	40	403
McDonald	7080	14	49	14	49
Mendeleevo	1874	22	48		
Monument Peak	7110	44	603	44	602
Mount Stromlo	7825	72	1215	72	1116
Potsdam	7841	54	408	4	41
Sejong	7394	9	37	9	36
Shanghai	7821	71	366		
Simeiz	1873	20	83	20	83
Simosato	7838	15	223	15	223
Tahiti	7124	31	139	31	139
Wettzell	7827	59	191		
Wettzell	8834	58	278	3	44
Yarragadee	7090	74	3613	74	3612
Zelenchukskaya	1889	35	100	36	105
Zimmerwald	7810	64	585	3	44
Totals:		36 sta.		24 sta.	

*Pass/pass segment totals

Summary by Network (RF vs. Total)

Network	#NPT Sta.	#FR Sta.
Chinese Network	4	1
NASA Network	8	8
Russian Network	9	2
All Others	15	13
Totals:	36	24