ILRS Governing Board Meeting

Koetzting, Germany
October 29, 2003

Attendees: Ben Greene, Georg Kirchner, Pippo Bianco, Graham Appleby, Ulli Schreiber, Werner Gurtner, Hiroo Kunimori, Wolfgang Seemueller, and Mike Pearlman

Station Performance:

As noted several times in the Workshop Sessions, a few of the stations are producing the bulk of the SLR data. About a third are producing little or no data and are having no impact on the analysis. The Station Qualification process to begin formally in January will relegate the latter stations to Associate category.

Resolution: In recognition that the initial Station Qualification criteria is quite lenient and that requirements for the SLR network will continue to grow in terms of both data quantity and quality, the GB plans to increase the qualifying performance criteria over time to meet the evolving needs of the user community. The CB will inform the stations.

It might also be wise to look for ways for the stronger stations to help those weaker stations that have some chance of enhancing the global network.

Dynamic Priorities:

At the Workshop, a scheme was recommended for Dynamic Priorities. Rather than a separate priority for each satellite, the satellites would be distributed among four categories, with the satellites in each category having equal priority. In each category, stations would be asked to equalize the number of passes on each satellite over the course of a few days. If a station has had many passes on one satellite in Category 1 and few passes on another, a little greater stress should be placed on the satellite with weaker tracking to try to increase its data yield.

The Central Bureau would provide a daily index (+1/-1) to raise/lower the priority within each category of satellites that need more/less attention. The indices would be based on a minimum number of passes that we anticipate every 2 -3 days.

The priority table with the CB issued indices would be posted daily on the AIUB server, to be available when stations access their prediction updates. The GB approved this scheme for allocating dynamic priorities.

Action: The CB will inform the community of the Dynamic Priority policy.

Normal Point Content:

Last year the GB approved minimum-data criteria for normal points. Six data points were required in daylight; three were required at night. Some of the single photoelectron systems readily adopted these criteria. Some of the multi-photoelectron systems did not. They argued that since their thresholds were already set at several photoelectrons, a single data point would have the equivalent significance.

At the Analysis Working Group Meeting prior to the Workshop, several analysts voiced the opinion that they did not want to lose any data and that the minimum criteria should be dropped. Their position was reinforced by analyses that showed that for most stations, in particular the multi-photoelectron stations, the low yield data points were predominantly acceptable. Mitigating for the minimum criteria was the need to streamline the data processing procedure and the desire to have the best value product in the database.

At the Workshop we could not come to agreement on standard minimum criteria, but we did agree that stations could use some minimum criteria if they felt that it strengthened their data set. The GB agreed that stations could

exercise their own discretion in setting minimum criteria, but their choice needs to be documented as a comment in their Site Logs.

Action: The CB will inform the stations of the revised normal point content policy.

Refraction:

The Refraction Study Group reported that the Ciddor-Mendes refraction model shows improvement over the Marini-Murray model, particularly at low elevations and recommends that the new model be implemented as the ILRS standard. They also requested that the stations provide more low elevation data to test the models.

Action: The CB will request that the Analysis Working Group and the Refraction Study Group draft an implementation plan for the Ciddor-Mendes model.

Action: The CB will urge the stations to provide more low-altitude data and to explore the relaxation of low altitude restrictions.

The Refraction Study Group also pointed out that inadequately understood non-linear absorption effects could place a severe limitation on our ability to exploit two-wavelength ranging. The ILRS needs to find a laboratory that can determine the refraction constants for our wavelengths.

Action: The Refraction Study Group will draft a letter and suggest some laboratories that the CB might approach to provide the refraction constants.

Mission Items:

Laretc: The GB approved the 6-month tracking campaign that has been requested on the Laretc Satellite by the IPIE.

Action: The CB will inform the community. We need to get the center-of-mass correction settled.

ADEOS-II: The ADEOS-II satellite failed in October. All SLR tracking has ceased.

ALOS: The ALOS satellite is planned for launch in June 2004. Like ADEOS_II, it will require selective tracking to avoid sensor damage. Data will be requested from the full SLR network.

Action: JAXA should organize a preparatory campaign, perhaps on Ajisai, to test tracking safety procedures.

ICESat: ICESat is back in operation, with tracking limited to only a few carefully monitored stations.

Gravity Probe B: GP-B is scheduled for launch in December.

GALILEO An informal approach from ESA system engineers had been made regarding the technical details of the laser arrays to be placed on each of the test satellites that are to be launched during 2004/05. It was agreed that such approaches that implied the need for ILRS tracking support should be made in conjunction with the CB.

Station Items:

Mt. Stromlo: Ben Greene reported that the new Mt. Stromlo system is being rebuilt and will be ready for operation in early 2004.

Hartebeesthoek: Surveyors from the IGN and NASA completed the ground survey at the Hartebeesthoek station.

Meetings:

Analysis Working Group Meeting: The Analysis Working Group will meet for two days prior to the EGU meeting in Nice in April.

Fourteenth International Workshop on Laser Ranging: The Organizing Committee met on October 28 and developed material for the meeting agenda. Mike Pearlman will draft an agenda and circulate it to the committee for comment. The ROA is developing a website for the meeting. Paper titles and abstracts are requested by 1 April.

GB Meeting: The next Governing Board meeting will be held in San Fernando in June in conjunction with the Workshop.

Reports:

The proceedings of the Thirteenth International Workshop on Laser Ranging is headed for printing and should be mailed out in November. The material is now available on the ILRS website.

The ILRS Annual Report for 2002 is in final editing and should go to printing in November.

Previous Action Items

1. All Operational stations should have GPS receivers and be IGS Global Stations, following IGS Standards with continuous data delivery (CB will check TOR and submit for GB approval);

   Closed: This requirement has been added to the TOR and will be enforced as of July 1, 2004.

2. Secure IERS written support for SLR and LLR (Noomen and Shelus)

   No action yet. Getting stale.

3. Check all old SLR stations (back through Merit) for DOMES Numbers (CB);

   Closed: All sites with Lageos data, except a few of the HTLRS sites now have Domes Numbers. Van Husson and Zuheir Altimimi will finish this out.

4. Check availability and interpretability of early data at least as far back as Lageos I (CB);

   Closed: All of the Lageos era data is in the CDDIS and can be read.

   Search continues for earlier data on GEOS-1, -2, and -3; DIADEM-1C and DIADEM-1D; Beacon-B and early Beacon-C; and Peole. Mark Torrence has made contact with a couple of groups that have some of the old data.

5. Activate stations to track down to 0 degrees on LAGEOS, Jason, Envisat, CHAMP, and GRACE to support refraction studies (CB);

   The CB has compiled a table of elevation limitation information provided by the stations. A couple of stations can range down below 20 degrees and are already providing data down to 15 and 10 degrees. The GSFC station has received permission to range down to 10 degrees. System modifications are being planned to implement this change. Permission is being sought for the other NASA stations.

6. Develop proposal on Dynamic Priorities, considering suggestions from the AWG (CB);

   Closed. A scheme for Dynamic Priorities was presented at a session at the Workshop and approved by the GB. The CB will inform the community.

7. Resolve data resupply and storage issue (Data Centers, CB);

   We had agreed that erroneous data could be replaced in the Data Centers within 30 days of acquisition. Carey Noll and Wolfgang Seemueller need to develop a procedure.

The data structure at CDDIS and EDC are not the same. CDDIS and EDC need to decide if the differences should persist and, if not, how to make them uniform.

8. Develop signal strength and detection reporting scheme by stations (SP W/G);

   Action by the Signal Processing WG

9. Contact delinquent stations on Minimum Normal Point data content issue (CB);

   Closed. See above.

10. Query stations on available site engineering information (NE W/G);

    CB will work with the NE WG as necessary.

11. Encourage stations to use real-time Prediction Update System (Gurtner/CB);

    Closed. CB sent out several notifications.

12. Expedite data flow from stations to NERC for more rapid prediction updates; aim for 5 minute cycle intervals (DF&P W/G);

    The Data Centers will work to implement a 15-minute turn around cycle. The stations must be urged to expedite data submissions directly to the Data Centers. In particular, present prediction and application needs are pressing toward complete data throughput on an hourly basis. The CB will inform both.

13. Set up Survey Working Group Meeting in Matera in October (CB, ISGN team and IERS);

    Closed. Meeting report given at the Workshop.

14. Develop whole protocol and organization for the Survey Working Group (ISGN and IERS);

    Action deferred to IERS.

15. Include time bias for "yesterday's" prediction orbit on Real Time Prediction Update System (NERC);

    Closed

16. Organize sessions for Koetzing/Wettzell meeting (Working Groups/CB);

    Closed

17. Announce Station Qualification Policy as approved by the GB (CB);

    Closed

18. Examine alternative analysis strategies for improving data products (Analysis Working Group, CB);

    Session organized at the Workshop

19. The stations should be queried if they have a ground marker for the station survey reference; if not, it should be strongly recommended (Survey Team and CB)

    This data is available from the reference logs and the Site Logs.