[Draft]Minutes of the 2023 ILRS ASC meeting

Wednesday, April 26th, 2023, TU Vienna, 14:00 – 18:00 CEST
Seminarraum A (SEM A), Freihaus, yellow area, 2nd floor, Wiedner Hauptstrasse 8-10, 1040 Vienna

On-site Participants:

Mathis Bloßfeld, Cinzia Luceri, Alexander Kehm, Daniel König, Daniela Thaller, Margarita Vei, Anton Reinhold, Patrick Schreiner, Sergei Rudenko, Ulrich Meyer, Adrian Banos-Garcia, Guiseppe Bianco, Simone Dell'Angello, Zajdel Radoslaw, Joanna Najder, Krzysztof Sosnica, Grzegorz Bury, Florent Deleflie, Andreja Susnik

Online participants:

Graham Appleby, Antonio Basoni, Liliane Biskupek, Claudia Carabajal, Ingrid Fausk, Peter Van Husson, Magda Kuzmicz-Cieslak, Frank Lemoine, Lorenza Mauro, Erricos Pavlis, Dmitry Pavlov, Mike Pearlman, Luca Porcelli, Franck Reinquin, José Rodríguez, David Sarrocco, Manuela Seitz, Tim Springer, Christian Schwatke, Eleonora Ivanovna Yagudina

1) Last meeting + open Action Items (CL, MB)

- AIs 2, 3, 5, and 10: finished
- AI 11: nearly finished
- AIs 6, 7, and 8: ongoing
- AI 9: will be started soon
- AI1 and 4: status unknown

2) Report from the IERS Directing Board (MB)

- IDS, IVS and IGS turn 20, 25, and 30 this year. ILRS was founded officially on Sep. 22nd, 1998 → 25 years this year!
- Proposal on ITRF updates by ITRS Centre (slides presented by Z. Altamimi, ITRS Centre)

3) AC reports (+status of 2 new French ACs) (all)

Reports given by (details on slides):

SLR ACs:
- ASI (AC & CC report)
  - Issues reported for scale, geocenter and EOP for BKG and ESA due to lack of data (CRD2 format not properly managed)
  - DGFI shows larger 3D WRMS w.r.t. SLRF2014 for core sites than any other AC; in addition, the Etalon-1/-2 orbits of DGFI-TUM are of not optimal quality; reason: unknown (**AI already opened at the last ASC meeting**).
  - Larger 3D WRMS values w.r.t. DLRF2014 also found for GFZ and BKG; reason: unknown (**AI already opened at the last ASC meeting**).
  - Slight positive scale offset of NSGF w.r.t. other ACs and ILRS-A; reason: unknown (**AI already opened at the last ASC meeting**)
  - Larger scatter of GFZ LOD w.r.t. USNO; reason: unknown (**new AI for GFZ**)
  - Large 3D WRMS of BKG, DGFI-TUM and NSGF v415 solution compared to other ACs
- BKG: cf. slides
- DGFI: cf. slides
- ESA: cf. slides
- GFZ: cf. slides

- JCET (AC & CC report)
    - ACs should fill breaks in weekly submission time series
    - Differences in the 3D WRMS time series (after transformation of daily/weekly AC solutions to SLRF2014 based on core sites) between the CCs for BKG, DGFI and GFZ should be investigated (**new AI for ASI/JCET/DGFI**)
- NSGF: cf. slides

New SLR ACs:
- CNES + GRGS: cf. slides

LLR ACs:
- IAA: cf. slides
- IFE: cf. slides
- LNF: cf. slides

Other important news:
- NSGF performed check of the DHF: current version does not take into account the Stanford Counter correction for Herstmonceaux station. The investigation by NSGF of other stations that used Stanford counters is ongoing. A correction table for the Stanford counter effect was distributed in SLR-Mail 0891 (2002-01-30; https://edc.dgfi.tum.de/en/mailing_lists/slr_mail/no0891/). Any other documentation is missing so that new ACs might not be aware of the correction. Implementation of the Stanford Correction within the analysis software should be verified by all ACs (**new AI for all ACs**). DGFI-TUM agreed to compile a kind of analysis webpage with information on models, setups and additional information to be used for the official ASC products and any other analysis of SLR observations (**new AI for DGFI-TUM**).

4) CC reports (CL, EP)

CC reports had been given by ASI and JCET AC (cf. previous section)

5) SLRF2020 + new ILRS DHF + target signature model (CL, EP)

- Indication of RB correction for non-LAGEOS/Etalon satellites should be added to the DH file (**new AI for JCET/ASI**).
- RBs reported in the DHF may change retrospectively – consequences for the applicability of the SLRF2020?
- Discussion of strategy for DHF updates: it was agreed that the DHF should not be changed frequently! Minor TS changes should be handled by bias adjustments directly, not through a total reanalysis! Then a new version of the DHF can be assigned.
- ILRS Webpage update (models) is complicated to implement. Therefore, an Analysis website will be maintained by DGFI-TUM at EDC
- José will look up the contents at the ILRS webpage (**new AI for José**).

6) Transition to new official ILRS ASC products (CL, MB)

- Some ACs do already provide the new (v80, v180 and v280) and old solutions (v70, v170 and v230) in parallel (some are still missing)
- It was agreed that the parallel submission of all ACs should last at least several weeks (e.g., until the summer break)
- IERS 20C04 is now ready, new Bulletin A will be published in June
- As agreed during the ASC meeting in Yebes, the complete reanalysis (v85) of the 1993-present LAGEOS and Etalon data in WEEKLY arcs, can be performed by all 7 ACs (**AI already**

opened at the last ASC meeting). They can start soon after the provision of the new products (v80, v180 and v280).

- Important: it was discussed that a new strategy for processing the arcs before 1993 should lead to better scale (Stanford Counter issue, etc.); new strategy to be defined (**new AI for Cinzia and Mathis**)
- Models to be used for the v180, v80, v280 (and v85 repro) products:
  - ILRS eccentricity file (UNE/XYZ): version 230314
  - SLRF2020 SINEX file: version 230322
  - ILRS DHF: version 230328
  - TS model: version 220915
  - Sub-daily EOP model: Desai and Sibois, 2016
  - Daly EOP model: IERS 20 C04 EOP time series
- Latencies of official products:
  - v180: 1 day
  - v80/v280: 9 days
  - v80 orbit products according to v80

7) SSEM-X status (CL)

- DHF used for ITRF2020 was the version 210416, comprising data from Jan 1993 to Dec 2020
- All ACs to the current date (230419) are delivering the v230 product routinely to EDC
- ASI used extended time series to update the DHF → current release of DHF: 230328

8) LARES-2 incorporation into official products (CL, MB)

- JCET provided an overview on the performance of LARES-2 in the SLR analysis; satellite metadata used can be found at the JCET slides)
- After a discussion, the following procedure was accepted:
- a) all ACs start processing LARES-2 arcs with LAGEOS setup but with fixed TS of 174 mm and bias adjustment for all stations. The test solution will be named v320: weekly 5-sat. solution (SSEM-X style): LA-1/-2 + ET-1/-2 + LR2 (LARES-2)
- b) José should compute new TS model for LARES-2 as soon as possible (**new AI for José**); after its adoption, the ACs are requested to reanalyse all reprocessed arcs using the new TS
- c) once the model is available, all ACs should process LA-1/-2, ET-1/-2, and LARES-2 for:
  - v290: weekly 5-sat. solution (SSEM-X style): LA-1/-2 + ET-1/-2 + LR2 (LARES-2), operational, official solution
  - v190: daily 5-sat. solution: LA-1/-2 + ET-1/-2 + LR2 (LARES-2), operational, official solution
  - v90: weekly 5-sat. solution: LA-1/-2 + ET-1/-2 + LR2 (LARES-2), operational, official solution

9) LARES-PP (MB)

- ACs should provide datum-free NEQs with spherical harmonics as soon as possible
- Mathis will provide link to submission folder by email (together with an SINEX NEQ example which contains SH coefficients; **new AI for Mathis**)

10) Any other business (MB)

- Discussion of DOIs: CDDIS already hosts some DOI landing pages, e.g., for the ILRS ITRF2020 contribution; up to now, it is unclear how these DOIs will be incorporated into the operational ILRS ASC products in the future (cf. DOI working group)
- Publication on ILRS contribution to ITRF2020 (**new AI for Erricos**)

New/old AIs

# AI	NEW ACTIONS	
	Description	**AC/person**
1_apr2023	Large scatter of LOD w.r.t. USNO	**GFZ**
2_apr2023	LARES-2 target signature model	**José Rodriguez**
3_apr2023	Publication on ILRS contribution to ITRF2020	**Erricos Pavlis**
4_apr2023	LARES-PP submission folder and SINEX NEQ example	**Mathis Bloßfeld**
5_apr2023	New strategy for the processing of arcs before 1993	**Cinzia Luceri, Mathis Bloßfeld**
6_apr2023	Differences in the WRMS time series between the CCs for BKG, DGFI and GFZ	**ASI/JCET/DGFI**

# AI	OLD OPEN ACTIONS	
	Description	**AC**
1_nov2022	Daily&Weekly products from 07-08/2022 to be investigated (3D wrms too high)	**DGFI/BKG/GFZ**
4_nov2022	daily&weekly Scale from 09/2022 to be investigated	**NGSF**
6_nov2022	Implement v180 daily operational products	**BKG/ESA/GFZ/JCET**
7_nov2022	Implement v80 weekly operational products	**BKG/ESA/GFZ/JCET**
8_nov2022	Implement v280 weekly operational products then switch-off v230 (date TBD)!	**BKG/DGFI/ESA/GFZ/JCET**
9_nov2022	Complete Re-Analysis 1993-2022 (SLRF2020, new DHF & IERSEOPC04 20), v85 series	**ALL ACs**