



# Minutes of the Fall 2022 (47<sup>th</sup>) ILRS ASC Meeting

Sunday, November 6, 2022, Centro San José, Guadalajara, Spain 9:00 – 13:00

## Operational Products & Re-analysis 2020:

*brief status/progress report from the ACs*

### ASI (AC&CC):

- ASI standard products are running and submitting regularly, both as AC and CC.
- Some remarks about combination products:
  - Some gaps for **daily products** (v170) for **DGFI** between 2021 – 2022.
  - Some gaps for **weekly products** (v70) for **DGFI** and **GFZ** between 2021 – 2022. Starting from 07-08/2022 **BKG, DGFI, GFZ** show anomalous higher values for the **daily&weekly 3D-WRMS**. Situation to be investigated (**AI**)
  - Starting from 10/2022 **BKG, DGFI, ESA** show anomalous values for the **Geocenter (Tx/Yz/Tz)** and for **EOP daily (Xpo-Ypo-LOD)** . Situation to be investigated (**AI**)
  - Starting from 10/2022 **BKG, ESA** show anomalous values for the **daily&weekly Scale**. Situation to be investigated (**AI**)
  - Starting from 09/2022 **NGSF** shows anomalous values for the **daily&weekly Scale**. Situation to be investigated (**AI**)
  - **GFZ** had a greater scatter for LOD from daily solution until 08/2022 and the time series became more aligned with other Analysis Centers after 08/2022.
  - Brief review of SSEM project for RBIAS estimation, new DHF process of generation and application. Impact on the Scale Value from -0.7 ppb value (ITRF2014) to 0.4ppb (ITRF2020), reducing the offset with VLBI scale value to 0.15ppb (about 1mm at the equator).
  - SSEM project has been extended to mid-2022, new draft DHF generated to manage offsets in RBIAS (and Up coordinates) for the last periods (7845 in particular).
  - New 2022 CoM correction file with minor updates (almost all below 1mm differences).
- First analysis from ASI AC using Globk software (MIT) about the possibility to generate a SLR-Only global reference frame. Results are comparable with ITRF2020, analysis will continue to refine the results. The audience expressed appreciation for the generation of this internal SLR-only reference frame and the work to generate an official product will continue.

**BKG:**

- Introduction of ITRF2020 in progress (new Bernese and new HW machine)
- BKG-SLR-2020 based on ITRF2020 reprocessing and modified datum definition with NNR instead of Loose Constraints

**DGFI:**

- Operational products (v170/v70) and Re-analysis products (v230/v40x) submitted regularly
- Multi-satellite daily/weekly combinations products: regular computation (from 2020)
- Analysis for spherical satellites shows best results for LA-1/2 & ET-1/2 w.r.t. to LEOs.
- New Lares-2 implementation and good quality results: 1.27cm of mean SLR RMS
- Analysis of non-spherical satellites (T/P, J-1/2/3): linearly increasing accuracy.
- New Model Updates: *GGFC, ESMGFZ+AOD1B RL6+HSD1B, EOT20, FES2014b.v1*
- New IERS C04 format used at 12h epochs.
- New CRD v2 format used.
- DTRF2020 preliminary solution generated: full SLR history for origin, GNSS subset for NNR conditions for orientation, VLBI and GNSS for scale.
- CRD\_v2 issues:
  - Some records has “na” while it is not explicitly allowed
  - Some integer value are reported as real
  - Passes with header date before midnight but with NPT date after midnight produce errors.

**JCET:** not attending

**NSGF:** nothing to report

**GFZ:** nothing to report

**GRGS:** Daily and weekly Sinex have been submitted since March 2021 on a test folder at EDC: scale, translation and Mt.Stromlo offsets appear aligned with the ones from ACs.

**Center of Mass Table Update:** minor updates, except for 7810 due to a mismodelling for the estimate of the satellite CoM, now corrected and updated.

**Implementation of ITRF2020/SLRF2020 and new products:**

- All ACs must **deliver all of the WEEKLY SINEXs for 2021 & 2022 within December 2022** based on the REPRO models and SLRF2020 and “draft” IERS EOPC04 20, to be combined and sent to IERS RS/PC at USNO for the final release of the IERS EOPC04 20 and Bulletin A. **(AI)**. Since version v41x was used as a test time series to check ITRF2020P, version v415 will be used for this series.
- New products will become operational using SLRF2020 as soon as the bulletin A consistent with ITRF2020 will be available, hopefully in January 2023:
  - v180 daily SINEX series, **(AI)**

- v80 weekly SINEX series with 10 days latency (see example below) **(AI)**. If all the models will be available the first submission could be on January 17 (from the ACs) and 18 January (from CCs) for the data arc 1-7 January 2023.
- v280 weekly SINEX (SSEM-X) with 10 days latency (see example below) **(AI)**

sunday 1	.....	sat 7	sun 8	...	sat 14	sun 15	mon 16	tue 17	wed 18	.....
Data arc from 1 to 7								AC V80 V280 arc 1-7	CC V80V280 arc 1-7	

- **complete reanalysis (v85)** of the 1993-present LAGEOS and Etalon data in WEEKLY arcs, to be performed by all 7 ACs **(AI)** soon after the final release of EOPC04 20 using SLRF2020 and the new updated DH File.
- The reference models for the routine products and reanalysis were presented during the meeting but the final list will be distributed within December 2022 after the release of the updated DHF **(AI)**

**Pilot Projects:**

- The SSEM project (v230 series) must be extended and submitted to the current period. Solutions must then continue to be generated and submitted weekly (at least to cover all 2022). **(AI)**
- **LARES Implementation:** only ASI and DGFI submitted to EDC the One Year test (2017).

## I. SUMMARY of ACTION ITEMS:

AI No.	Responsible Entity	Action Item Description	Deadline
1	DGFI/BKG/GFZ	Daily&Weekly products from 07-08/2022 to be investigated (3D wrms too high)	ASAP
2	DGFI/BKG/ESA	Geocenter and EOP from 10/2022 to be investigated	ASAP
3	BKG/ESA	daily&weekly Scale from 10/2022 to be investigated	ASAP
4	NGSF	daily&weekly Scale from 09/2022 to be investigated	ASAP
5	ALL ACs + CCs	Deliver 2021&2022 weekly solution (v415) (SLRF2020)	31 December 2022
6	ALL ACs + CCs	Implement v180 daily operational products	January 2023 (TBC)
7	ALL ACs + CCs	Implement v80 weekly operational products	January 2023 (TBC)
8	ALL ACs + CCs	Implement v280 weekly operational products then switch-off v230 (date TBD)!	January 2023 (TBC)
9	ALL ACs	Complete Re-Analysis 1993-2022 (SLRF2020, new DHF & IERSEOPC04 20), v85 series	March 2023
10	CCs	Release DHF Update + final list of reference models for the routine products and reanalysis	15 December 2022
11	ALL ACs	Submit v230 to current period and continue to submit weekly v230 solutions	ASAP