Notes from the Meeting on January 27th, 2025:

Alex Belli:

Alex's presentation explored the correlation between geodetic satellite weekly passes and ITRF2020 station position residuals. He demonstrated that approximately 50 weekly passes are sufficient to achieve optimal residuals. While these findings could serve as a new ILRS recommendation for stations, further analysis is needed to assess the independent impact of each geodetic satellite, as well as the effects on Earth Orientation Parameters (EOP), gravity field coefficients, and other geodetic products such as the TRF scale and origin.

Constructive feedback was provided during the QCB, CB, and NESC meetings, highlighting key areas for further investigation:

- Determining a minimum threshold: While 50 weekly passes serve as an upper boundary, residuals improve by less than 1% beyond this point. Identifying the minimum required number of weekly passes—potentially station-specific—could help optimize performance.
- Station performance recognition: Acknowledging stations that improve their performance could foster engagement and motivation.
- Stability requirements: Maintaining high observational standards is critical for ITRF stability, especially considering the role of GPS as a benchmark for high-precision TRF definition.
- Pass quality vs. quantity: Evaluating normal points instead of raw pass counts may provide deeper insights, potentially revealing that fewer high-quality passes are needed, thereby reducing constraints on stations.
- Tracking progress: Providing stations with weekly statistics could help them monitor and maintain progress over time.

Along with this type of analysis, we also have to take into consideration the inputs that we have received from stations in response to the Station Survey and Plan. We are trying to work with the stations to see if we can encourage them to expand their performance.
There are some stations that have improved overtime, others have not.
This all will feed also into the recommendations for changes to the quarantine procedures if necessary.

Continuity is important. Geographic distribution is important.

Message to stations should emphasize this, and encourage stations that continuously observe to minimize outages.

Peter Dunn:
Discontinuities at an active earthquake station: MOBLAS4 – see presentation.

In ITRF2020-u2023, the SLR station 7110 (MOB4) exhibits non-linear vertical motion between earthquake events.

PSD model discontinuities are introduced only at known earthquake occurrence times for 7110. The vertical displacements at SLR and GNSS(MONP) agree at most earthquake discontinuity times.

MOB4 only detects significant vertical displacement at known earthquake events.

MONP shows vertical displacements at non-geodetic discontinuities which affects long-term accuracy.

The ITRF2020 model shows mild subsidence (assumed linear) for the DORIS station (MOOB) in the two year series preceding the 2010 M7.2 event.

Suggestions to include alternative analysis methods and other measurement techniques in the study will be pursued and results reported at the next available meeting.

Andreja Susnik:
Update on Stanford Counters – see presentation

There are 5 stations so far with large corrections (Herstmonceux-7840, Borowiec-7811, San Fernando-7824, Potsdam-7841, Zimmerwald-7810)

Correction tables for the identified stations were provided for SFEL, ZIMM, POTS, BORO.
For the Zimmerwald station, since 29/05/2002, counter calibration values relative to the Herstmonceux reference are applied to the observations. According to paper/proceeding from Van Hussion, in May 2002, Zimmerwald fixed a 14.5mm range bias error.
Properly ‘handling’ Stanford counter error has subtle effect on the estimated range biases.
RB [m].

Table 1. History Log Voids by Station (2025.02.10)			
Station Location	CDP #	Time Gap(s)*	Last entry
Kiev	1824	000120-080302 080402-110515	141410
Komsomolsk	1868	NO DATA	
Simeiz	1873	NO DATA	
Mendeleevo	1874	NO DATA	
Altay	1879	NO DATA	
Riga	1884		250107
Arkhyz	1886	NO DATA	
Baikonur	1887	NO DATA	
Svetloe	1888	NO DATA	
Zelenchukskaya	1889	NO DATA	
Badary	1890	NO DATA	
Irkutsk	1891	NO DATA	
Katzively	1893	NO DATA	
Yarragadee	7090		240530
Greenbelt	7105		240418
Monument_Peak	7110		241003
Haleakala	7119		240304
Tahiti	7124	020825-080414 130321-191022	230520
Changchun	7237	950101-970802 020714-051002 180410-210106	240417
Beijing	7249	881101-940301 940301-981116 981116-211013	230425
Tsukuba	7306		240919
Sejong	7394	NO DATA	
Wuhan	7396	NO DATA	
Arequipa	7403	920718-951023 951023-981130 981130-010523	200629
San Juan, Argentina	7406	NO DATA	
Brasilia	7407	NO DATA	
Hartebeesthoek_HARL	7501	020409-081105	240710
Hartebeesthoek_HRTL	7503	NO DATA	
Izana	7701		230406
Zimmerwald_532	7810	030905-060203 080715-100901	250205
Borowiec	7811	030329-071227 080205-131218	211005
Kunming	7819		241208
Shanghai_2	7821	140222-170315 170720-190811	231113
San_Fernando	7824	900703-930222 971216-010124 090302-110601 180801-210518	231121
Mount_Stromlo_2	7825		210901
Wettzell_SOSW	7827	140501-160511 160511-190528 200424-230607	240119
Simosato	7838	900701-950810 950810-991007 991019-040701 080401-181212	211209
Graz	7839	150504-190311	241009
Herstmonceux	7840		230427
Potsdam_3	7841	040906-081026 081026-110501 170303-200303	240305
Grasse_MEO	7845	010601-200818	240517
Matera_MLRO	7941	140902-171204 171206-210629	241024
Wettzell	8834	190604	240605
* Assuming at least 2 year data gap			Status 2025.02.11

Next QCB Meeting: March 24th, 2025, 09:00-11:00 AM EDT (13:00 UTC)