



## ILRS analysis activities after the adoption of ITRF2020

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The contribution of the International Laser Ranging Service (ILRS) to the most recent realization of the International Terrestrial Reference System (ITRS) was the result of an analysis strategy with two major modifications compared to the operational products: a modeling for stations long-term systematic errors (biases reported in the ILRS Data Handling File) and an updated model of the target signature error (satellite Centre of Mass model). Both refined models were used as input information for the ILRS contribution to the ITRF2020 (International Terrestrial Reference Frame 2020).

Thereafter, the ILRS Analysis Standing Committee (ASC) focused its effort on implementing the new reference frame in its operational products, define a strategy to improve the ongoing monitoring of the systematic errors, compute the ILRS contribution to the planned ITRF2020 update, and to include LARES-2 among the considered satellites for the operational products.

The ILRS ASC implemented the ITRF2020/SLRF2020 into all its official operational products (TRF, Earth Orientation Parameters, predicted and combined satellite orbits) and its impact was evaluated. The operational products benefit from the continuous monitoring of the station systematic errors and the frequent updates of the Data Handling File whenever a significant change in the station systematic error is observed. In the future, a change-point detection algorithm, jointly estimating the times and the number of discontinuities, will be implemented to detect potential new discontinuities in the range bias series.

The inclusion of LARES-2 among the satellites whose data are operationally analyzed will furtherly increase the robustness of the estimated parameters. Finally, the ILRS ASC activities include the benchmarking of a new analysis center (CNES) which will formally begin its own contribution in 2024.