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A Status Report on the ILRS Contribution to ITRF2020

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The International Laser Ranging Service (ILRS) Analysis Standing Committee (ASC) plans to complete the re-analysis of the SLR data since 1983 to end of this year by early 2021. This will ensure that the ILRS contribution to ITRF2020 will be available to ITRS by February 2021, as agreed by all space geodetic techniques answering its call. In preparation for the development of this contribution, the ILRS completed the re-analysis of all data (1983 to present), based on an improved modeling of the data and a novel approach that ensures the results are free of systematic errors in the underlying data. The new approach was developed after the completion of ITRF2014, the ILRS ASC devoting almost entirely its efforts on this task. A Pilot Project initially demonstrated the robust estimation of persistent systematic errors at the millimeter level, leading us to adopt a consistent set of a priori corrections for data collected in past years. The initial reanalysis used these corrections, leading to improved results for the TRF attributes, reflected in the resulting new time series of the TRF origin and scale. The ILRS ASC will now use the new approach in the development of its operational products and as a tool to monitor station performance, extending the history of systematics for each system that will be used in future re-analysis. The new operational products form a seamless extension of the re-analysis series, providing a continuous product based on our best knowledge of the ground system behavior and performance, without any dependence whatsoever on a priori knowledge of systematic errors (although information provided by the stations from their own engineering investigations are always welcome and taken into consideration). The presentation will demonstrate the level of improvement with respect to the previous ILRS product series and give a glimpse of what is to be expected from the development of a preliminary version of the ITRF2020.