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## ITRS 2020 realization: the new situation for scale realization

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For the ITRS realization 2020 input data series of high quality from SLR, VLBI, GNSS and DORIS will be provided by the respective Technique Services ILRS, IVS, IGS and IDS. The observation data are currently reprocessed applying agreed state-of-the-art models. Between ITRF2014 and the ITRS realization 2020, many model changes had to be implemented for the individual techniques which nearly all have an impact on the realized scale. To mention the most important ones: (i) For SLR, estimated mean range biases will be introduced for each station and satellite. (ii) In VLBI analysis, the gravitational deformation of the telescopes will be considered for some stations. (iii) In GNSS analysis, highly-precise Galileo satellite phase center calibrations allow for the realization of the scale from Galileo observations. Calibrating GPS phase center corrections accordingly might even allow for a scale realization from the complete GNSS time series history. (iv) In case of DORIS, which was not involved in the ITRS scale realization up to now (as wasn't GNSS), a new antenna type and changes in elevation cut-off and observation down-weighting will also have an impact on the scale.

It is a fact, that many of the model changes are not analyzed in detail with respect to their impact on the ITRF scale, and neither is the combination of model changes. The situation is even more complex since the ITRS realizations 2014, ITRF2014 on the one hand and DTRF2014 and JTRF2014 on the other hand, differ significantly with respect to the realized scale.

The poster summarizes and categorizes the various model changes and their impact on the scale. It critically discusses the new situation, which is a challenge for ITRS 2020 scale realization and will lead to significant differences between ITRF2020 and its predecessor ITRF2014.