Time Bias Service: latest status, implementation and prediction quality analysis

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The Time Bias Service is now in operation since November 2017 and widely used within the International Laser Ranging Service (ILRS). It allows to monitor satellite orbit prediction quality and provide station operators with an a priori value for the along track offset – here called "time bias". This allows reducing the satellite acquisition time during tracking and thus improves station productivity for relevant targets.

The latest implementation of the service features an improved modeling, website and visualization, as well as a newly added JSON API for a proper integration into an SLR station operation system. The service provides support for a variety of targets (LEO, Lageos, GNSS and Debris) and prediction providers. From direct analysis and comparison, it can be seen when a provider or a mission has issues with prediction quality. This feature has been used to support new missions during their acquisition phase or point out issues of providers and notify them. This allows to initiate a discussion about prediction quality on a profound basis, as it was the case with the Technosat, the SNET, the ICESAT2 or the Lightsail2 mission for example.