Upgrades and New Capabilities of the GFZ SLR Timing System

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Currently the GFZ Potsdam timing system is based on a GPSDO receiver. Here we discuss its supplementation with a cesium standard equipped with a high performance tube. A station 'on time' point is designated to allow for traceability to UTC. Careful measurements have been made to separate the transmit delay from the overall system delay. In addition, software is being developed to monitor clock health, as well as generate timing data relating the station time to the laser pulse crossing of the system invariant point. The software is cross-platform and is designed to process normal ranging data being generated at the station. These improvements and measurements will allow Potsdam to participate in current and future missions that require one way ranging measurements, including T2L2, the ACES mission, and other transponder work.