Recent Progress and Plans for Improvement of ILRS Infrastructure and Data Product Delivery

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The International Laser Ranging Service (ILRS) is improving its services through network expansion and continuous upgrades of its modeling and analysis approaches. New ground stations are being deployed with higher repetition rate systems, more efficient detection, and increased automation; new technologies are also being adopted at some of its legacy stations. In addition, the roster of tracking missions is rapidly expanding. The top priority for the Service continues to be its contribution to the reference frame development, but of increasing importance is also the tracking of GNSS satellites, including the anticipated deployment of the new GPS III constellation over this decade. These requirements are being reflected in new system designs and updates. Stations are also being adapted to accommodate ground and space-time synchronization. A few stations continue with their lunar laser ranging activities while several others have begun testing their ability to do lunar ranging in the future. About a dozen stations are active in space-debris tracking for studies of orbital dynamics and reentry predictions. New tools and procedures have been implemented to improve the quality of SLR data and derived products, and to expedite the resolution of engineering issues. Work also continues on the design and building of improved retroreflector targets to maximize data quality and quantity.

This paper will give an overview of activities underway within the Service, paths forward and presently envisioned, and current issues and challenges.