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Designing NASA's Next Generation SLR stations with the goal of full automation

NASA's Space Geodesy Project's (SGP) next generation network will include newly designed Very Long Baseline Interferometry (VLBI) and Satellite Laser Ranging (SLR) systems. The Space Geodesy Satellite Laser Ranging (SGSLR) systems are the SLR components of this network. The goal of the SGSLR design is to achieve millimeter level accuracy and stability in the ranging measurement and eventual autonomous operation. Full automation is achieved via both hardware and software, and there is virtually no subsystem in SGSLR whose design is not affected by the requirement for automation. We will present the aspects of the SGSLR design driven by these requirements, our plans for fulfilling the requirements, and the phased approach to full automation. In addition, we will discuss the SGP network plans for global monitoring of the stations from a single location as well as present the current status of the SGSLR system builds.