Abstract: The NASA Space Geodetic Satellite Laser Ranging (SGSLR) system design plans for fully automated SLR operations. Automating the systems will require a phased approach as NASA develops, builds and deploys the first three SGSLR systems for the next generation NASA Network. The SGSLR Computer and Software (C&S) subsystem will control command, monitor all aspects of the system during every mode of operation, and will be capable of joint processing and delivering all science and housekeeping data to the NASA Integrated Geodetic Site Operations Center (IGSOC). The C&S subsystem will provide SGSLR the capability for local and remote operations, as well as the capability to operate 24 hours a day, 7 days a week with no human intervention (except for periodic routine maintenance and occasional repairs). This work describes the computer and software subsystem design and interface to the SGSLR subsystems providing the framework for the first phase of SGSLR automation development.

Image courtesy of Cobham PLC

Image courtesy of Photonics Industries

Image courtesy of Honeywell Technology Solutions, Inc., Lanham, MD 20706 USA | ©NASA Goddard Space Flight Center, Greenbelt, MD

Sigma Space Corp.

Image courtesy of Honeywell Technology Solutions Inc.

Image courtesy of Cobham PLC

Image courtesy of Honeywell Technology Solutions, Inc., Lanham, MD 20706 USA | ©NASA Goddard Space Flight Center, Greenbelt, MD

Sigma Space Corp.

Image courtesy of Honeywell Technology Solutions Inc.

Image courtesy of Honeywell Technology Solutions, Inc., Lanham, MD 20706 USA | ©NASA Goddard Space Flight Center, Greenbelt, MD

Sigma Space Corp.

Image courtesy of Honeywell Technology Solutions Inc.