

NASA's Next Generation Space Geodesy Network Typical Core Site Requirements and Layout

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NASA's renewed commitment to the deployment of a new network of "core" geodetic sites requires careful planning and consideration for location selection, instrument and facility layout, and required infrastructure. Following on National Research Council (NRC) recommendations to upgrade U.S. stations with modern SLR, VLBI, and GNSS systems, and make a long-term commitment to maintaining the ITRF (among others), the Space Geodesy Project (SGP) at NASA has been defining the exact requirements and layout for a "typical" geodetic site which includes SLR, VLBI, GNSS, and DORIS stations (French system provided by CNES, France) tied together with a Vector Tie System (VTS). Within programmatic constraints, Core Site (CS) identification follows a systems engineering process where site characteristics are pitched against identified requirements. Taking into consideration site stability, radio-frequency interference, infrastructure, and a host of other requirements this paper will describe the process leading to identification, and will illustrate the generic layout of an idealized CS with unencumbered terrain.