

PBO Mini-Proposal: Spatial Reference Infrastructure for Western North America

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The National Geodetic Survey (NGS) and the California Spatial Reference Center (CSRC) have entered into a partnership to use the continuous GPS sites in California, primarily installed by science-based funding, as a framework for spatial referencing in the state. This partnership will expand the National Spatial Reference System (NSRS), and the California Spatial Reference System (CSRS), maintained by NGS. California's active crustal motions cause unique spatial referencing issues that cannot be addressed by existing national programs. These crustal motion monitoring activities require more timely action which can be done more effectively at the state level. The NGS/CSRC partnership provides an opportunity to develop models for greater technological interfaces between Federal and State agencies, and to stress the need for joint activity on projects of mutual importance that will meet a wide range of user needs.

The CSRC has taken on the following responsibilities:

1. Maintain the California Spatial Reference System (CSRS) database, including GPS-derived horizontal, vertical and velocity observations, obtain and archive Continuously Operating Reference Stations (CORS) observations in California, and produce time-varying International Terrestrial Reference Frame (ITRF) coordinates. CSRC will also maintain supplemental data for the NSRS, other specific GPS reference stations, and NGS geoid models.
2. Work jointly with the NGS to provide seamless links between the databases of the California Spatial Reference Center (CSRC) and the NGS, and to make NSRS data and CSRS data available to users.
3. Work cooperatively with the NGS in the reobservation of selected NSRS stations, including GPS observations, processing, and adjustment of the survey results.
4. Cooperate with the NGS in the preparation and publication of the proposed NAD 2000 and in the production of velocity maps for use in the Horizontal Time Dependent Positioning (HTDP) model.
5. Maintain a secondary archive of the national CORS for NGS, and work cooperatively with NGS to archive CORS data collected in North America (including Canada and Mexico).

We propose the NGS/CSRC model to the PBO project as a significant outreach activity that should make data and data products accessible to the ever-growing wider community of non-scientific GPS users. In turn, this will garner support for the PBO initiative at the Federal, State, and local levels. In any case, we propose that the PBO project plan to incorporate a suitable subset of continuous GPS sites into the national CORS network.