



CSRC Director's Report



Yehuda Bock

Scripps Orbit and Permanent Array Center (SOPAC)

California Spatial Reference Center (CSRC)

Scripps Institution of Oceanography

La Jolla

Presented by Greg Helmer

CSRC Coordinating Council Spring Meeting

Santa Clara Valley Water District

May 8, 2008

SOPAC/CSRC Staff: Onsite



- Director: Yehuda Bock
- Coordinator: Maria Turingan
- Analysis: Peng Fang, Linette Prawirodirdjo, Paul Jamason
- Web Administrator and Programmer: Paul Jamason
- System Administrator: George Wadsworth
- Programmer Analysts: Ruey-Juin Chang, Mindy Squibb
- GIS Programmer: Ian MacLeod
- SCIGN and CRTN Field Support Staff: Glen Offield, Ed Perez
- PGM Technician: Ryan Sapinoso

CSRC Consultants



- CSRC Executive Manager: John Canas, PLS
- Geodetic Consultant: Cecilia Whitaker, PLS
- Project Support: Larry Fenske PLS

CSRC Contractors

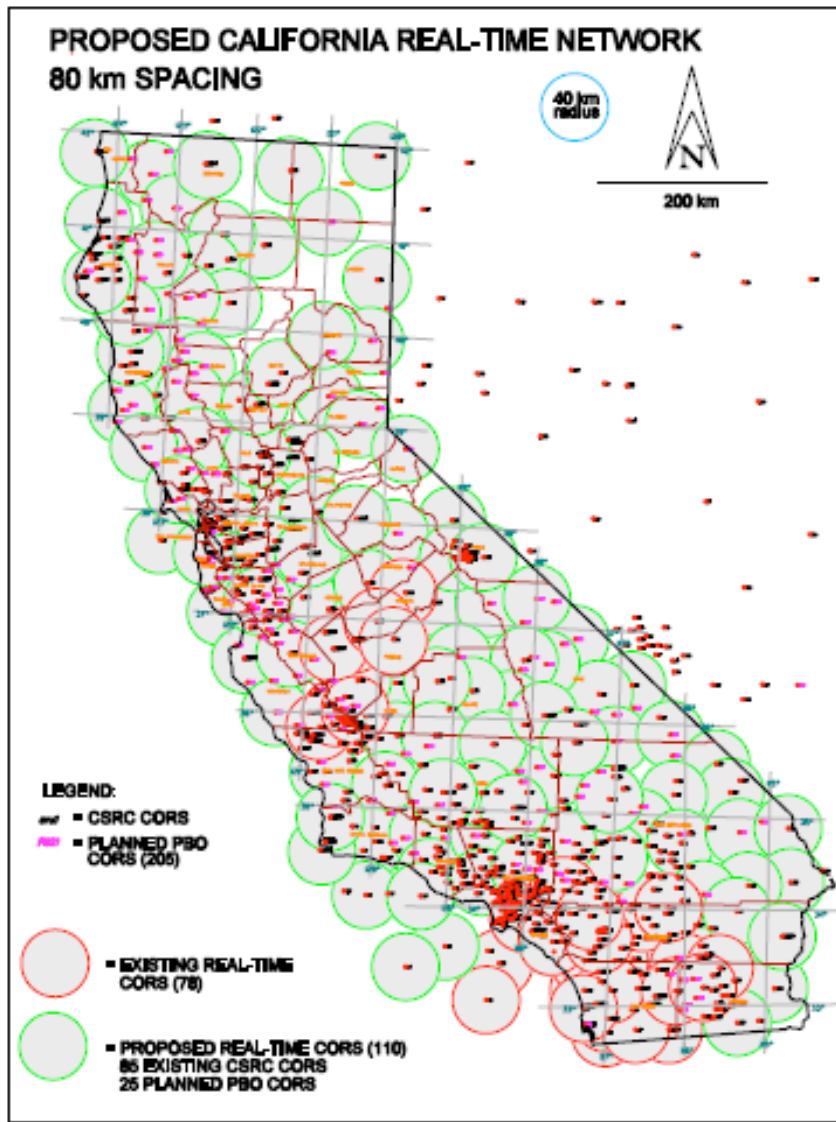


- Northern San Joaquin Valley Project 2006:
Johnson-Frank & Associates (Roger & Alan Frank)
- Southern California Height Mod Project 2006:
PSOMAS (Kari Launen)
- Central Coast Height Mod Project 2007:
Towill (John Bloodgood, Trevor Greening)
- On-Call Contractors (4 contract areas), 2007-
(Towill, PSOMAS, RBF, Penfield Smith)

Highlights

- Severe reduction in FY2008 funding from NGS & SIO government relations efforts for FY09 funding (Maria will review)
- CRTN White Paper (draft distributed to EC)
- PGM upgrades
- Evaluation of HTDP 3.0 for NGS
- Central Coast Project
- North San Joaquin 2006 ortho adjustment (John Canas will review)
- Reference Frame Issues (ITRF2005 vs ITRF2000)

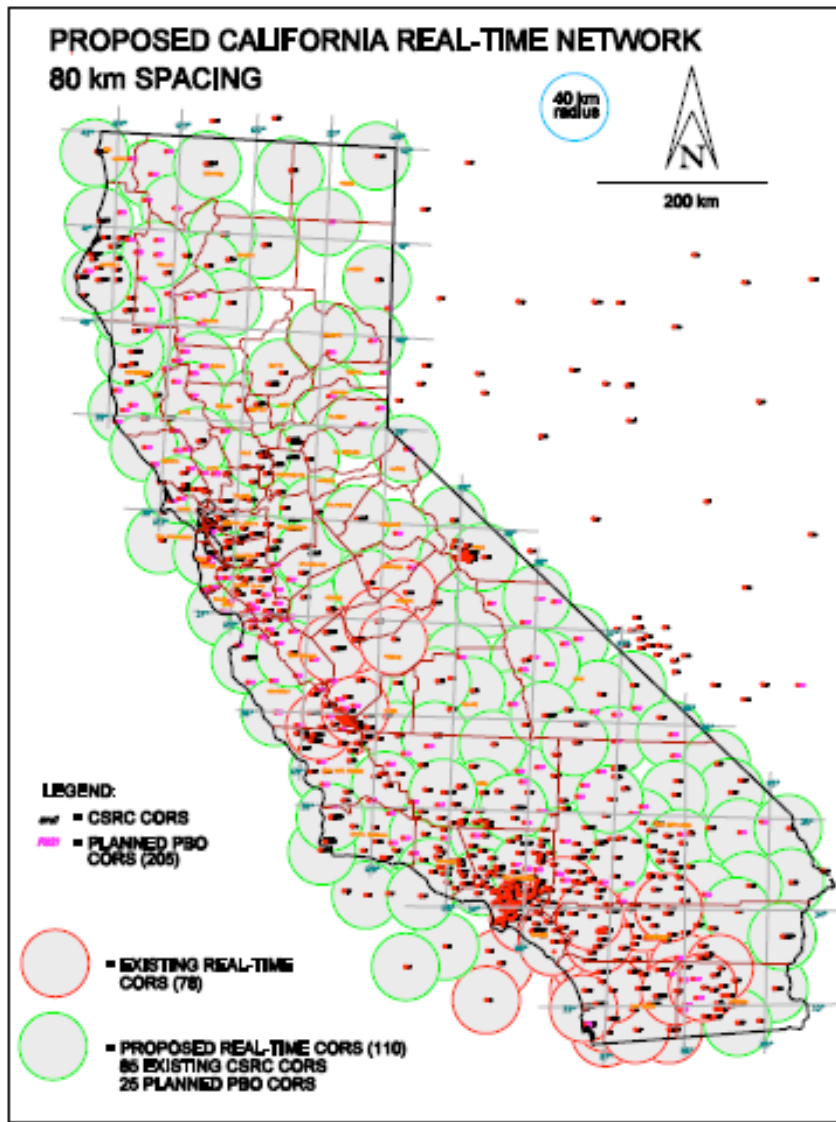
Proposed Statewide Expansion of CRTN



Two related problems & solution:

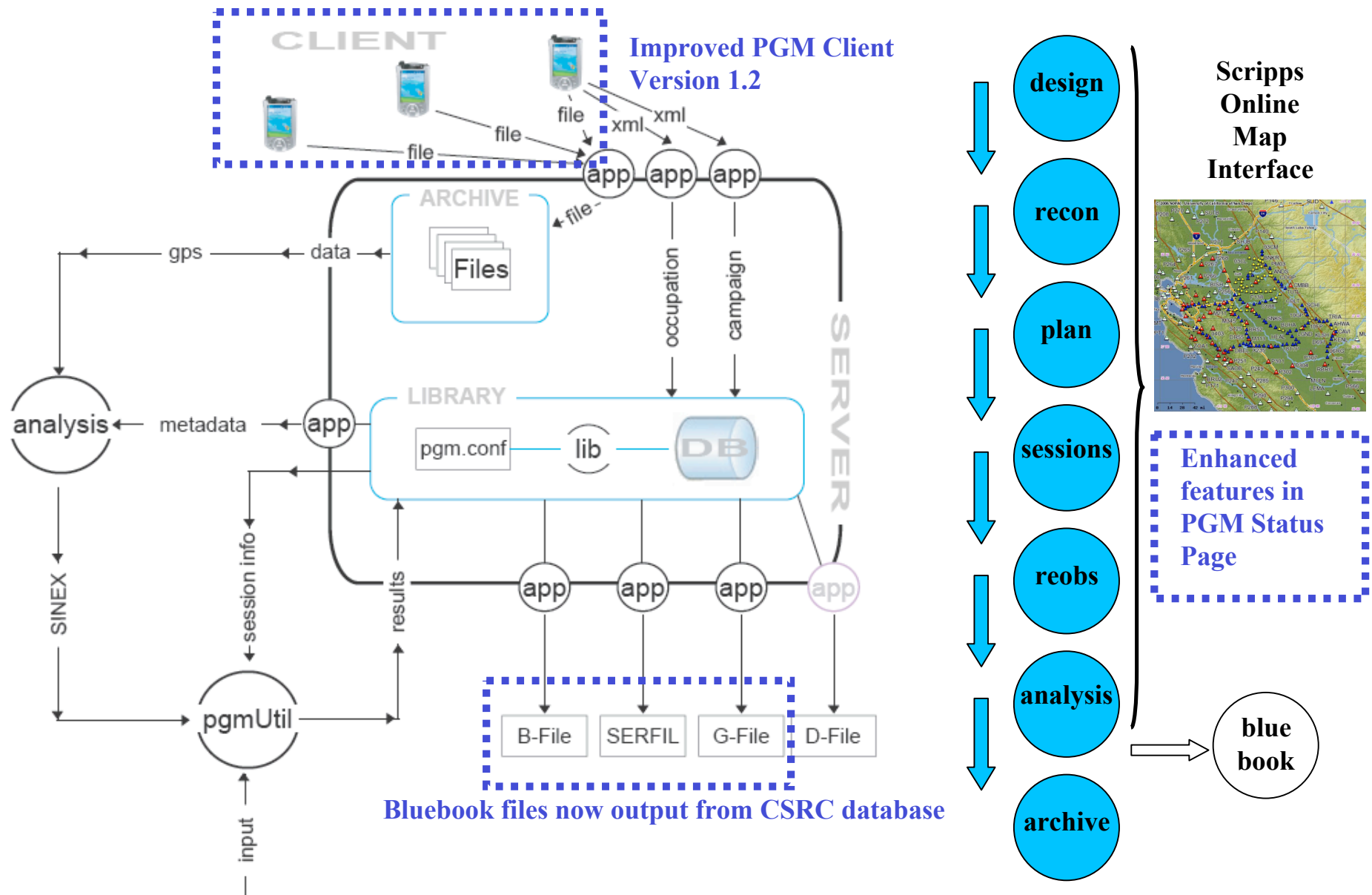
- The lack of an open, uniform and seamless statewide real-time network in California. Our State with its size, population, unique spatial referencing environment, and despite the tremendous resources at its disposal is far behind in providing a real-time solution for precise spatial referencing, a requirement for increased economic productivity and innovation in private and public sectors for a growing number of interrelated applications.
- The crisis in Federal funding of the California Spatial Reference Center (CSRC), the absence of State support and funding, and a lack of a clear vision for the future. We are still guided by the CSRC's Master Plan for a Spatial Reference Network in California ("Master Plan") published in 2002, which needs to be updated to account for technological advances, infrastructure enhancements, and societal priorities.
- The premise of the white paper is that a slightly modified model of the existing California Real Time Network (CRTN) and its expansion throughout the State will provide a needed public utility, realign CSRC priorities, enlarge our constituency, and enhance funding opportunities for CSRC.

Proposed Statewide Expansion of CRTN



- Uses existing CGPS stations built for high-accuracy, longevity, and geophysical stability
- Requires a partnership with existing geophysical networks (SCIGN, PBO) - discussions initiated with UNAVCO
- Uses only CGPS stations that are part of the California Spatial Reference Network (CSRN)
- Is directly tied to the California Spatial Reference System (CSRS) and National Spatial Reference System (NSRS) through SECTOR vector model and HTDP crustal motion model, providing seamless epoch-date conversions
- Is able to recover from large seismic events by instantaneous monitoring of changing site positions, followed by rapid geophysical modeling and updates to SECTOR and HTDP models
- Contributes to and uses national real-time atmospheric propagation models (troposphere and ionosphere)
- Has a 20-80 km spacing, with 24/7 coverage and latency of 1 second
- Supports both kinematic and dynamic applications using inverse (server-side) network positioning, rather than a client-intensive approach
- Provides on-the-fly geodetic coordinates, and orthometric heights through national geoid models supplemented with local corrections
- Provides open access to CRTN network solution through public protocol using standard GNSS formats (RTCM, NMEA)
- Is managed and operated by the CSRC
- Requires no user fees but is subsidized by CSRC in-state partners

PGM Upgrades



PGM Client Version 1.2

- PGM Client 1.2 has been released:

http://troy.ucsd.edu/ubbcgi/ultimatebb.cgi?ubb=get_topic;f=35;t=000005

- Download site is:

<ftp://geopub.ucsd.edu/pub/public/PGM/2008/>

- Four versions:

PGMClient-MM-20080428-Installer.exe - manager version for desktop/laptop

PGMClient-TM-20080428-Installer.exe - technician version for desktop/laptop

PGMClient-PDA-MM-20080428.CAB - manager version for PDA

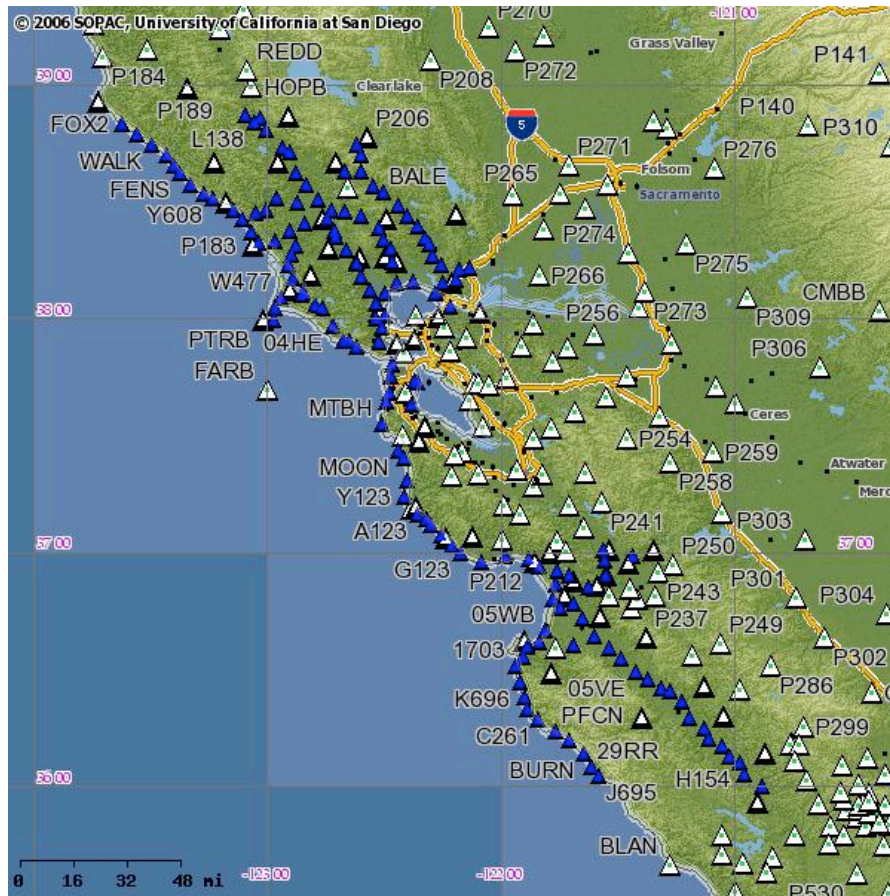
PGMClient-PDA-TM-20080428.CAB - technician version for PDA

Evaluation of HTDP 3.0 for NGS



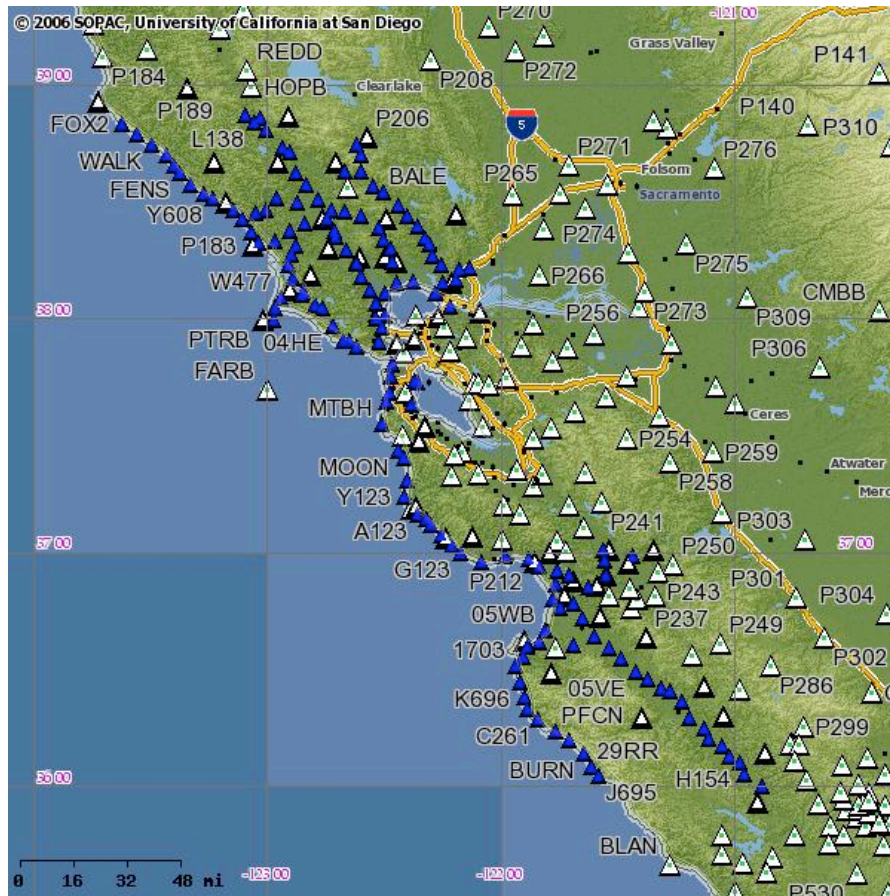
- Compared HTDP 3.0 values to SECTOR computed velocities (see mm/yr differences in figure)
- Good agreement throughout State – exceptions at short-lived PBO sites and
- Endorsed by CSRC
- Will be adopted by CSRC and improved in cooperation with NGS

Status of Central Coast Project 2007



- Towill Contractor
- M. Ikehara (Proj. Manager)
- Contribution by Steve Sarsfield & colleagues
- Evaluating CSRC GPS analysis
- Evaluating CSRC-output B-file, G-file & SERFIL
- Performing orthometric adjustment
- Submit project to NGS and CSRC

Reference Frame Issues



- CSRC Epoch 2007.0 output in ITRF2005, not ITRF2000 as posted.
- Feedback from Mike Potterfield and others
- NGS notified
- CSRC web pages will be modified accordingly
- Differences at the 5-10 mm level per coordinate component