

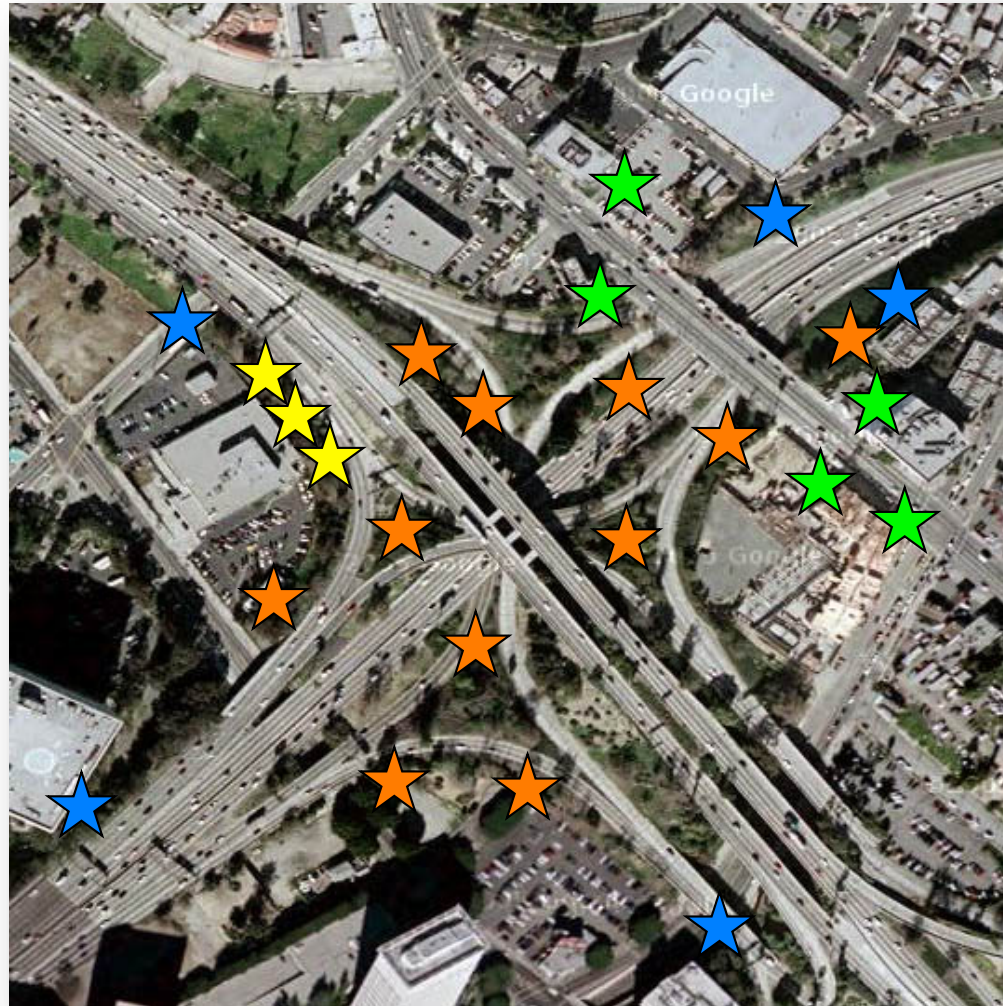


GEOTECHNICAL VIRTUAL DATA CENTER (GVDC)

**PEER Annual Meeting
October 26th, 2012**

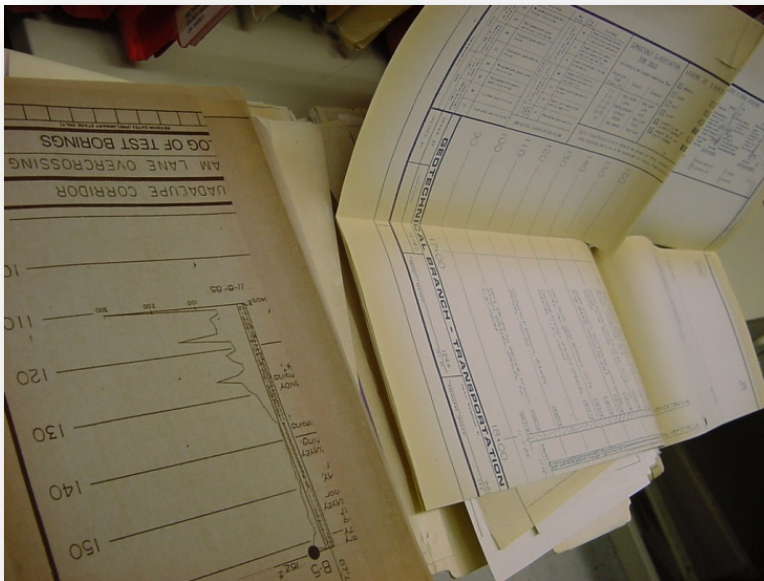
Loren Turner
Cliff Roblee
Tom Shantz

The dream: *data sharing*



The reality...

- A large paper legacy
- Difficult to access information
- Information scanned but no data structure



Managing the legacy: Caltrans GeoDOG

Search - Mozilla Firefox
 http://10.160.173.158/search_projects.php

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GeoDOG
beta v1.1

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00000195.PDF (application/pdf Object) - Mozilla Firefox
 http://10.160.173.158/Data/04/SOL/S05_S.69_23-0164_ALLENDALE-ROAD-UC/00000195.PDF

1 / 1 | 75%

B-1

114.5

7.1/2

32.1/2

63.1/2

29.1/2

39.1/2

34.1/2

27.1/2

24.1/2

46.8/2

8-25-66

B-2

116.5

7.1/2

32.1/2

63.1/2

29.1/2

39.1/2

34.1/2

27.1/2

24.1/2

46.8/2

8-25-66

B-3

113.2

300/2

8-26-66

100

200

300

Appro

Brown gravel.
Brown, medium to very coarse sand.
Soft brown, silty clay with scattered coarse sand.

Very stiff and compact light brown, interbedded sandy clay, clayey gravel and silty medium to coarse sand.

Dense, brown, coarse to very coarse sand and gravel with clay binder.

Very stiff, olive buff, silty clay with clayey fine sand and gravel sedins.
Hard, olive buff clay.

Compact, olive buff, clayey silt.

Dense, olive buff, clayey silt.

Compact, tan and olive fine sandy silt.

Dense, coarse to very coarse sand and pea gravel.

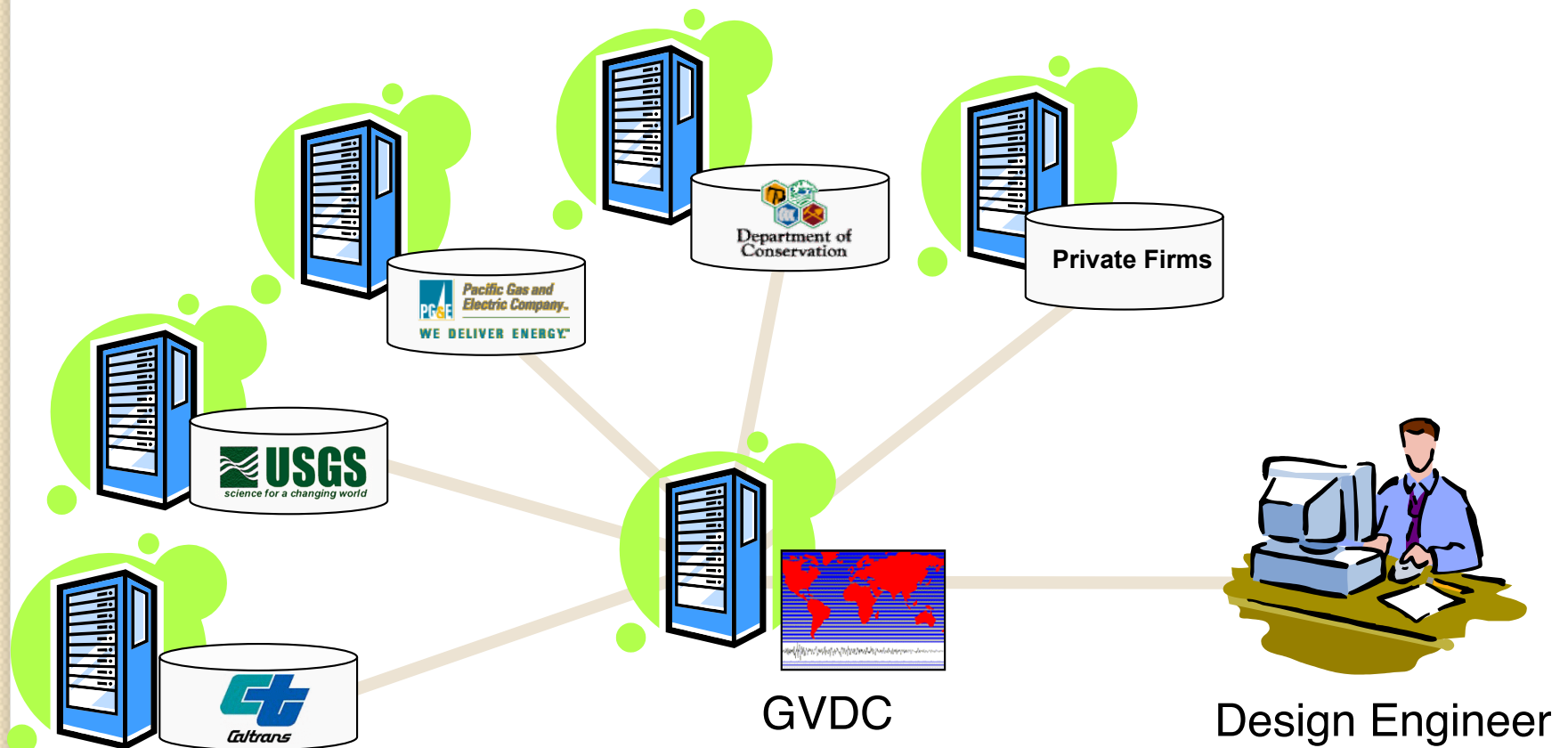
GWS 29.2
8-25-66

8-25-66
36.25 x 22.52 in

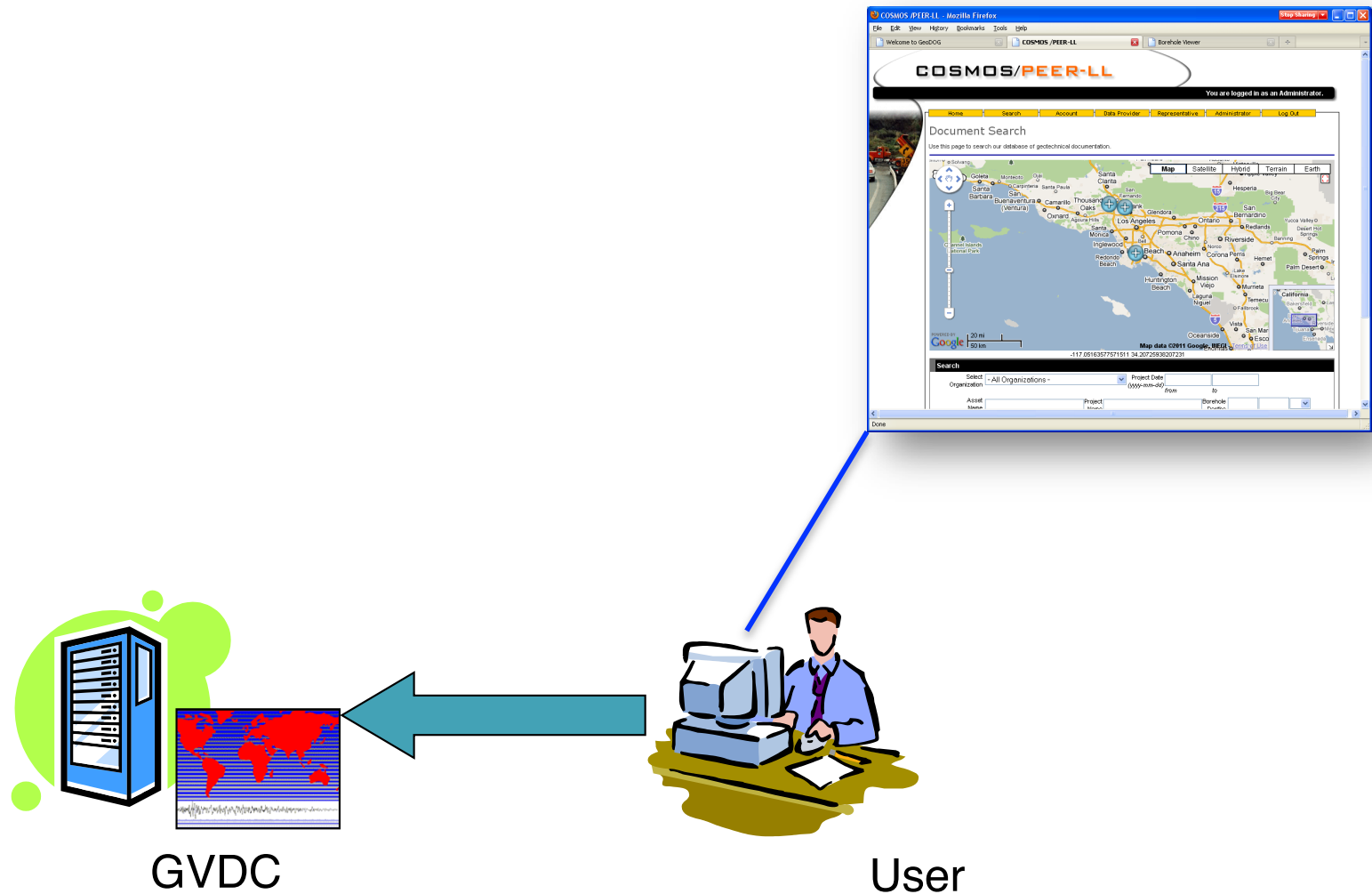
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GVDC – Making sharing easy

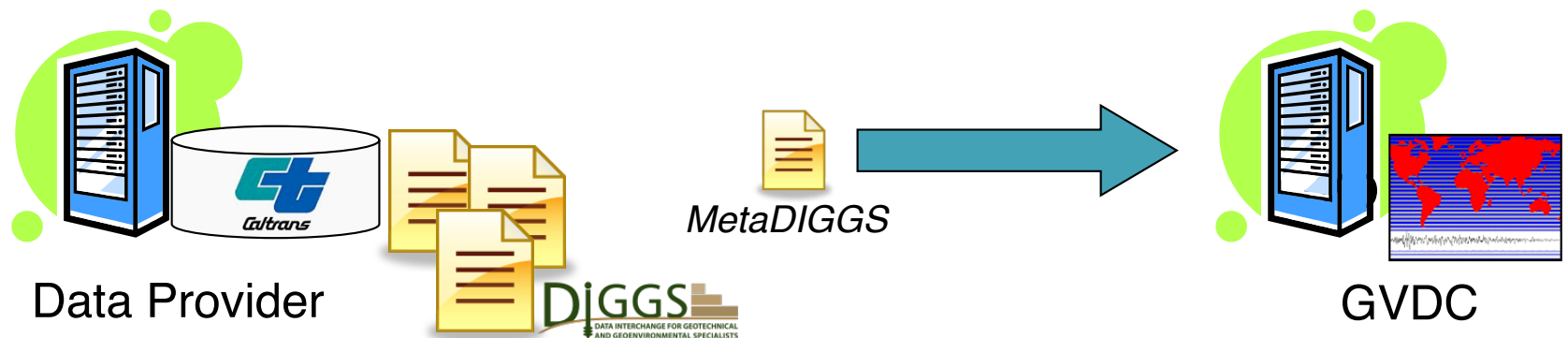
- The GVDC is a data “broker,” not a data repository.
- Translation-based system using DIGGS.



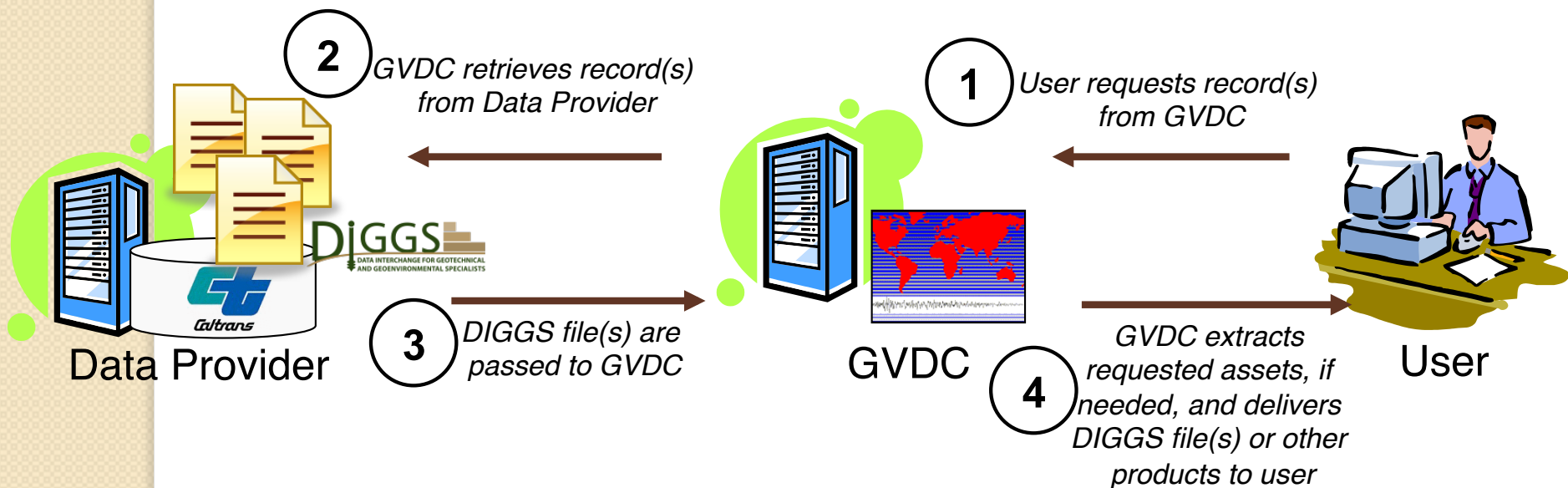
- A user goes the GVDC to search for data.



- The Data Provider generates a MetaDIGGS XML file to reflect their available data sets.
- The GVDC “harvests” the MetaDIGGS file and stores this information in it’s database.



- The user requests to download and/or preview the record(s) returned by the search process.





DIGGS: Data Interchange for Geotechnical and Geoenvironmental Specialists

- A standard designed to facilitate exchange of geotechnical and geoenvironmental data among a broad range of practitioners and researchers.
- XML-based and GML compliant.
- Fully extensible, software neutral, and non-commercial.
- DIGGS is *not* a software application or a database structure
- Merger of AGS, COSMOS, and UF/FDOT standards.
- Active participation by commercial software community (gINT, HoleBase, Equis, Dataforensics, Rockware, Earthsoft)
- www.diggsmml.com

Supporters/Promoters of DIGGS

- The United States Federal Highways Administration
- The United Kingdom Highways Agency
- US Departments of Transportation (CA, CT, FL, GA, IN, KS, KY, MN, MO, NC, OH, TN)
- The United States Geological Survey
- The United States Army Corps of Engineers
- The United States Environmental Protection Agency
- CIRIA (the UK Construction Industry Research and Information Association)
- AGS (the UK Association of Geotechnical and Geoenvironmental Specialists)
- COSMOS (Consortium of Organizations for Strong-Motion Observation Systems)
- The University of Florida
- Commercial software community (gINT, HoleBase, Equis, Dataforensics)

GVDC History

- 1992 NSF/FHWA sponsor the *National Geotechnical Experiment Sites* (NGES) that publishes geotech research data and data standards.
- 1996 Caltrans/EPRI/NSF sponsor the *Resolution of Site Response in the Northridge Earthquake* (ROSRINE) project that pioneers web dissemination of geotechnical data thru USC.
- 1998 NSF sponsors USC Workshop that highlights growing need for geotechnical data management and exchange.
- 2001 PEER-LL Project 2L01 sponsors a workshop to assess user needs and build consensus to develop a Geotechnical Virtual Data Center (GVDC).
- 2002-04 PEER-LL Project 2L02 tasks COSMOS to develop a pilot GVDC that demonstrates the feasibility of the technology.
- 2004 COSMOS & FHWA co-sponsored workshop that set goal to integrate COSMOS, AGS, and UF(FHWA) data standards under what becomes 'DIGGS'.
- 2004-09 PEER-LL Project 2L03 tasks COSMOS to update GVDC to implement cosmosDIGGS schema, expand data types (geophysical logs & lab tests) and revise system architecture.
http://peer.berkeley.edu/publications/peer_reports/reports_2009/web_PEER9108_STEPPEtal.pdf
- 2005-12 Transportation Pooled Fund TPF-5(III) project initiated to develop DIGGS standard.
- 2009 TPF-5(III) stakeholders meet in Orlando to assess DIGGS v1.0 release, restructure project management, and establish new work plan toward public release of DIGGS v2.0.
- 2010-11 PEER-LL Project 2L04a tasks COSMOS to implement DIGGS v1.2 and complete beta version of production-level GVDC system.

Current Status

- GVDC is “operational” but is based on an earlier DIGGS standard
- Community is waiting on DIGGS 2.0
- DIGGS 2.0 is less hierarchical than previous versions
- ASCE Geoinstitute has taken “ownership” of DIGGS and has a project funded by OhioDOT to test DIGGS 2.0.
- Once DIGGS 2.0 is finalized in 2013, the “hope” is that software vendors will support the format. **THIS IS CRITICAL!**
- With the ability to create DIGGS files, all new geo data at Caltrans will be placed on a GVDC accessible server (in DIGGS format). CGS and USGS to follow suit. PEER to host GVDC.
- Caltrans will likely require all consultant work to be provided in DIGGS format.