MEETING SUMMARY
COSMOS VDC Work Group Meeting
November 17, 2005

U. S. Geological Survey
345 Middlefield Road
Menlo Park, CA

The COSMOS VDC Work Group met at the U. S. Geological Survey, 345 Middlefield Road, Menlo Park, CA November 17, 2005. The following Work Group (WG) members, VDC Project Team members, and COSMOS representatives participated in the meeting.

COSMOS WG	VDC Project Team	COSMOS
C. B. Crouse, Chairman – URS Corp. CB_Crouse@URSCorp.com Hamid Haddadi – CGS hhaddadi@consrv.ca.gov David M. Boore – USGS boore@usgs.gov Christopher Stephens – USGS cdstephens@usgs.gov	Jamison Steidl, UCSB steidl@crustal.ucsb.edu Melinda Squibb, UCSB mindy@crustal.ucsb.edu	Carl Stepp, COSMOS PM cstepp@moment.net Guests Moh-Jainn Huang - CGS mhuang@consrv.ca.gov Jennifer Swift – USC jswift@usc.edu John Evans – USGS jrevans@usgs.gov Loren Turner – Caltrans Loren_Turner@dot.ca.gov

Discussions followed the meeting agenda (Enclosure 1).

Introduction

Chairman Crouse called the meeting to order at 9:30 AM and asked for any revisions to the meeting agenda. None were offered.

Review of June 30, 2005 meeting summary

The June 30, 2005 meeting summary, which contains statements of the action items, was distributed to Working Group (WG) members. Recommendations and action items from the June 30 WG meeting are restated below together within the implementation status.

Enhancements to VDC: Progress in implementing WG action items June 30, 2005 meeting

Jamison Steidl and Melinda Squibb described the implementation of action items as follows. The presentation followed the Power Point Presentation shown in Enclosure 2.

Action-1 Project Team will draft a record processing procedure and obtain Working Group review.

Status

No action taken yet. Dr. Steidl stated that processing of digital recordings is relatively easy to do. They likely can be uniformly processed using an automatic processing procedure. The approximately 100 analog recordings are more problematic and require more effort. Each record may require individual processing and all require human review.

New Action #1 – Chris Stephens and Mindy Squibb will review USGS analog recordings that are in the COSMOS VDC and make recommendations to the WG with respect to processing procedures. Delete problem records which have problems that raise questions about their reliability.

Action-2 Professor Archuleta will consult with K-net and KiK-net about processing recordings from those networks and will determine whether the network owners agree to permit response spectra to be developed by COSMOS and whether the owners agree to allow users to download response spectra or simply post them for visual inspection to assist users in selecting recordings.

Status

No action taken yet.

Action-3 COSMOS will arrange with EERI and SSA to distribute the Fact Sheet together with their membership renewal notices.

No action taken.

New Action #2 – The VDC Team will prepare a short "fact sheet" paper and submit it to Seismological Research Letters.
Carl Stepp will work with the COSMOS Office and submit the existing fact sheet to the EERI Newsletter with the request that EERI include it as an insert in their Newsletter; and COSMOS will publish it in the next issue of the COSMOS Newsletter.

Action 4 The VDC Team will distribute the User Manual to members of the Working Group for formal review. Members will provide comments by July 31. The

VDC Team will revise the Manual taking account of the comments. The revised draft will be reviewed at the next Working Group Meeting.

Status
Completed. The VDC Team has obtained review, revised the User Manual and has posted it on the SMVDC Home Page. The User Manual will be in continuous development as new user features are developed and incorporated into the SMVDC. The Manual will be posted on the COSMOS Home Page.

Action 5 ***The VDC Team will make an effort to obtain the European strong motion data from Imperial College. It would be preferable to hold the data set in the VDC server. Alternatively, the server could point to the database where users could obtain data that satisfy a set of search parameters.***

No action taken. Professors Ambraseys and Dougles, who are leaders for maintenance of the European strong-motion data set, are near retirement or have retired. We do not know who will assume or has assumed responsibility for the data set. Professor Ambraseys gave a CD containing the data set to COSMOS some time ago, but has not given permission to distribute the data through the SMVDC. The first step in resolving this matter is to determine the current status of the data set and identify the person who has responsibility for its maintenance. With that knowledge we will determine what actions must be taken to make the data set available through the COSMOS SMVDC.

New Action #3 – Dave Boore, who is in frequent communication with Julian Bommer at Imperial College will determine the current status of the data set, identify the person who is responsible for its maintenance and report back to the WG.

COSMOS VDC Demonstration at the combined EERI and SSA meeting commemorating the 100th Anniversary of the 1906 San Francisco Earthquake –

The WG recommends that COSMOS arrange for a booth at this meeting. A COSMOS booth that displays its activities and includes the capability for demonstration of the SMVDC would be optimum. Copies of the Fact Sheet, the Users Manual, preprints of the SRL paper, and other publications should be available at the booth.

New Action #4 – Stepp will pursue the possibility of having a booth at this meeting with COSMOS Management.

COSMOS Membership

The WG held a short discussion of possible ways to stimulate membership in COSMOS. The outcome of the discussion was the recommendation that COSMOS explore with EERI and SSA the possibility of offering an “affiliate membership” in COSMOS. EERI and SSA would include the option of a COSMOS affiliate membership in their membership notices. The cost of the affiliate membership would be reduced relative to the regular individual membership rate of $50.00.

Summary presentation of the COSMOS Geotechnical Virtual Data Center (GVDC)

Jennifer Swift described the COSMOS GVDC using the ppt presentation in Enclosure 3. COSMOS is developing the GVDC in a project that is funded by the PEER Lifelines Program. The project is motivated by the PEER LL Program members' desire to develop and implement efficient geotechnical data archiving and dissemination technologies. A pilot system – COSMOS-PEER LL GVDC, linking limited geotechnical data from four providers – CGS, Caltrans, PG&E, and USGS – currently is in operation and can be accessed at
, http://geodata.cosmos-data.org.

The project currently is in Phase 3, which involves expanding the data dictionary that was developed in Phase 2 to include various geophysical data typically collected as part of a geotechnical site characterization, enhancing the system architecture, and upgrading the server to support a large number of linked geotechnical databases. An important development of the Phase 3 work is the implementation of a major collaboration agreement between the 2L03 Project and the FHWA Transportation Pooled Funds (TPF) Project 918 for the purpose of developing an international geotechnical data model standard. The TPF Project 918 is funded through participation of state transportation departments. The Project is being coordinated by the Federal Highway Administration (FHWA) and has participation of 12 state DOTs, Federal Highway Administration (FHWA), Federal Lands, US Army Corps of Engineers, US EPA, US Geological Survey, United Kingdom Highway Agency, University of Florida, Association of Geotechnical and Geoenvironmental Specialists (AGS), Construction Industry Research and Information Association (CIRIA), and Consortium of Strong Motion Observation Systems (COSMOS). This group is developing a *Data Interchange for Geotechnical and Geoenvironmental Specialists* (DIGGS) standard. The DIGGS standard integrates the COSMOS-PEER LL Pilot Data Model and Pilot XML Geotechnical Data Exchange schema, the AGS geotechnical data model, and a data dictionary that is under development at the University of Florida. The DIGGS standard will incorporate the enhancements to the COSMOS-PEER LL Geotechnical Data Model that have been developed under Project 2L03.

All parties to the collaboration have agreed to adopt the DIGGS standard for archiving geotechnical data in a common data model that facilitates ready exchange. COSMOS will adopt the DIGGS standard for the further enhancements of the COSMOS-PEER LL XML data exchange schema that are being made under Project 2L03 and for final implementation of the COSMOS-PEER LL GVDC. COSMOS is coordinating the enhancements of the GVDC with NEESit and anticipates that the DIGGS Standard and the GVDC can be adopted for the geotechnical data element of the NEESit earthquake engineering experimental testing data center.

Discussion

The Working Group made the following recommendations for linking geotechnical databases to the GVDC or for incorporating geotechnical datasets into the GVDC.

- Recommendation 1: The ROSRINE data should be incorporated into the GVDC. Currently this high quality data set is not being maintained and could be lost completely with passing time. With the expansion of the data dictionary in PEER LL 2L03 to include geophysical data and carrying these data dictionary elements forward into DIGGS Standard, the ROSRINE data can be incorporated. Project 2L03 does not currently have funding to accomplish this. The WG recommends that action be taken to determine the cost of this action and to seek funding to accomplish the task
- Recommendation 2: The various geotechnical data sets that are being held by the USGS should be incorporated into the GVDC. A number of data sets were identified and discussed. These data sets were developed and are held to support various research projects and are maintained by the research staff. Chris Stephens and Jamie Steidl will take an action to identify the data sets that are available and recommend those sets that could be moved into the GVDC. It was noted that data tables and data translators are required in order to move a data set into the GVDC. In the future the capability to develop data translators on the fly is expected to be built into the GVDC, but the required data tables will continue to be built manually. Resources will need to be identified in order to accomplish this effort.
- Recommendation 3: Action should be taken to determine the status of the Tiawan suspension log data. Some or all of these data have been obtained by PEER LL to support the Next Generation of Attenuation Relations (NGA) Project and this data set may also be held in the Caltrans borehole database. If so, the data can be accessed through the Caltrans link to the GVDC. Loren Turner will determine the status. The contact for Taiwan data is Professor K. C. Tsai, Director, National Research Center on Earthquake Engineering, who is a member of EERI.
- Recommendation 4: The GVDC should develop strong coordination with NEESit. Carl Stepp noted that coordination with NEESit has been established. He expects that NEESit can adopt the GVDC as the geotechnical element of their larger earthquake engineering data center.

Linking the SMVDC and the GVDC

Mindy Squibb presented a discussion of approaches for linking the SMVDC and the GVDC and described the benefits of linking the two virtual data systems and issues to be resolved. Her presentation followed the ppt presentation in Enclosure 4.

The Strong-Motion VDC would benefit in several ways from linking to the GVDC. Users would be able to access more detail about geotechnical properties at and near strong-motion station sites and the information would be kept current as new data are added to the GVDC. A link would avoid the need to duplicate already existing data and data search capabilities and would make access to geotechnical data efficient.

A two-way link can be developed that permits users of either data center to search both centers from one access point. For example a user could enter the SMVDC and after

having identified recordings that satisfy a set of search criteria, would be linked to the GVDC and could obtain geotechnical data from borings within a specified radius of the recording station sites. The capability for this search would require only the transfer of strong-motion station coordinates and a specification of the radius to be searched. The search could be expanded using more complex search criteria: for example, closest boring, all borings within a specified distance, combinations of NEHRP class sites, and so on.

The discussion identified a number of interface issues that require resolution. The link should be seamless such that the user feels that data are coming from a single center; i. e., the user should be able to go to one site and obtain all data, making the user experience as easy and efficient as possible. Log-on requirements for the GVDC will need to be resolved in order to make the link and search process seamless and time efficient. It should be possible to retain the basic log-on requirement, but allow a user who links to the GVDC from the SMVDC to view available data without logging-on and being authenticated. The main issue is that the time required to identify what geotechnical data are available should not discourage users. However, any down loading of data would require log-on and authentication. This is necessary in order to be able to satisfy the different policies of the various data providers, to provide use statistics to data providers, and to permit data providers to be aware of how their data are being used.

Although none of these issues are considered to be technical or administrative barriers to linking the SMVDC and the GVDC, some time and effort will be required to develop the desired seamless link. The WG endorses the linking of the two VDCs and recommends that an effort be made to develop a means to rapidly identify whether or not desired data are available from the GVDC without the need to first log-on. A log-on would be required however, to down load any data.

The next meeting will be held at USC February 15. Agenda items should include v2.0 COSMOS format update and Strong-Motion VDC metadata requirements.

The meeting adjourned at 2:30 PM.

Respectfully Submitted

J. Carl Stepp