

COSMOS
Consortium of Organizations for Strong-Motion Observation Systems

BOARD of DIRECTOR'S MEETING

16 November 2006
4:00 PM—6:30 PM

DoubleTree Hotel
Berkeley, California

The Agenda for this meeting is attached as Appendix A. Bob Bachman called meeting to order at 4:10 PM. Woody Savage was delayed by traffic. Jim Davis is out for surgery. The President's report by Jim Davis is attached as Appendix B. He sends his regrets. Claire also had surgery but is back. Bob Bachman thanked PEER for some support for putting the meeting package together.

Board Members Present:

Norm Abrahamson
John G. Anderson
John Parrish
Maury Power
Woody Savage
Don Yule

Board Members Absent:

James Davis
Bill Iwan
Farzad Naeim
Jerry Wright

Others present:

Robert Bachman
Roger Borchardt
Doug Dreger
Claire Johnson
Robert Nigbor
Mindy Squibb
Anthony Shakal
Jaimison H. Steidl

Adoption of April 24 Meeting Minutes ❖ J. Anderson

Parrish moved, Yule seconded, prior minutes approved.

Report of Director of Engineering Applications and update on COSMOS Short Course Development ❖ R. E. Bachman

A written report is attached to the Minutes as Appendix C.

The technical session on November 17 will continue to evaluate scaling of accelerograms. The current head count is 115. Last year we had 30 walk-ins. It is not just California engineers. Bob thanked Norm and Jennie Watson-Lamprey for helping this to happen. There will be a no-host cocktail bar after the meeting to give people the chance to continue discussion. This year we also have 8-10 posters during the cocktail hour. COSMOS will provide hors d'oeuvres as well. With the pricing structure, we expect to break even at about 100 participants. Next year we should keep in mind that it is difficult to secure a location without booking a large block of hotel rooms. November is peak convention time in the Bay Area, and most hotels are not interested in booking space unless we can guarantee them a block of 100-plus hotel rooms. Norm thinks next year we will have more concrete recommendations on how to pick records should COSMOS offer those as a members-only benefit?

Bob reported COSMOS had a booth at the EQ06 conference. It worked well, but a more focused meeting would also be good. Should we go to the EERI meeting in February 7-10 at Universal City, Los Angeles? Jamie and Mindy thinks this is important for informing the profession about the VDC. There was a consensus that we should have a booth there. We anticipate that EERI will not charge COSMOS for the booth.

Short course development is delayed. Eduardo Miranda is dealing with sickness in his family.

Bob noted that we had approved at the last meeting a long-range planning group to review the bylaws and think about the future of COSMOS. This is planned for January 24-25, 2007, at the Richmond Field Station, but several at this meeting suggested switching it to the Doubletree Hotel. Issues include membership, bylaws, and goals. Bob circulated a worksheet (Appendix D) that participants will use as part of the planning.

Elections of officers are needed – in fact, are overdue. Jim Davis had thought this would take place after the long-range planning meeting. Parrish moved and Power seconded that we request of the membership that elections be deferred until the spring, after the long-range planning meeting but before the spring Board meeting, at which time they would be conducted by mail or e-mail. The motion was approved by unanimous voice vote.

Status Report on On-going active COSMOS Projects ❖ R. E. Bachman

Carl Stepp provided a report on ongoing COSMOS activities (Appendix E).

We still need to set a price and mechanism to distribute COSMOS reports. Bob and Claire have settled on \$40 for print or \$10 for CDs plus \$5 for shipping. The material is also on the web site, so there is not a high demand for printed versions.

Opening Remarks ❖ W. U. Savage

Woody read Jim Davis' letter (Appendix B). Woody applauded Jim for his remarkable dedication to COSMOS.

Treasurer's Report and Presentation of the Proposed 2007 Budget ❖ M. Power

The treasurer's report is in the minutes as Appendix F, which includes a narrative report and five attachments. As an overview, our financial position is not very different from where it was a year ago. So far this year (through October 12) our net income is \$1,309.21. Maury projects that at the end of the year, the net income will be about \$6,000. The finances will be assessed rigorously shortly after the end of the year by our accounting firm, and final results will be presented to the board at the April meeting.

Discussion and Adoption of the 2007 Proposed COSMOS Budget

The 2007 budget is Attachment 5 of Appendix F. Maury suggests that we should consider this as a preliminary budget, prepared in concert with Bob Bachmann, Jim Davis, Claire Johnson, and input from Carl Stepp. The VDC funding is forecast to end March 31, 2007, at which time the VDC administration will be transferred to USGS and CGS.

Bob Nigbor suggested that more of our funds be in certificates of deposit and less in checking. In past years, due to cash flow, our monthly balance has been more variable, but Maury thinks now it is more stable. Jamie Steidl recommended staggered accounts as a means to handle this.

Tony asked why we have so much saved. Claire points out that after March, when our contracts have ended and there is no more indirect cost recovery, we will not have any more reason for our savings to increase.

Parrish moved we accept the report and preliminary adoption of the budget. The motion was adopted by unanimous voice vote.

Report by Chair of General Membership on Member Feedback & Safer Cities Project ❖ R. Borchardt

COSMOS is on a path of becoming of more interest to the membership. It fills a unique niche bringing together research and practice. He credits the Board for giving it this direction. Last year's technical program was a big success, with a lot of credit to Bob and Norm. This is great from the membership perspective. It will be nice to see the short courses. Documentation and an implementation procedure as mentioned by Norm will be enormously important to the membership. We need new contracts to get there.

One member thought the technical program needs to be advertised better. Bachman noted it was advertised in EERI, SEAOC and its affiliates, COSMOS membership, and other smaller organizations. Anderson suggested that BOD members circulate announcements to groups where they are connected. Members asked what level of documentation will be available from tomorrow's presentations. All presentations will be available on the web site. There was an

intention last year to prepare a document also but it is not complete yet. There was a presentation at EQ06, but it was on the SSA side so there is not a paper.

Borcherdt notes that VDC is seen by members as a major accomplishment. The linking with international data sets is a critical capability, which the Board should seek to assure continues. Some members also see the geotechnical data center as important. Planning needs to take account of special niches for COSMOS in this time of transition.

Savage asked if there are any negative comments. Borcherdt said no. The technical program is a big inducement for people to attend the Annual Meetings.

SAFER Cities: 210 boxes with SMA-1s arrived in China for IEM project. They came from the USGS Fresno office. Roger thinks they will be broadly distributed across China. Three other programs sent us reports: Bangladesh, Dalian, China, and Kanpur, India. India has converted analog instruments to digital instruments by installing an lcd in place of the film. Roger is encouraged that the Safer Cities instrumentation fosters further development of instrumentation programs. We had an earlier report on the project in Armenia. We do not have any further applications pending at this time.

COSMOS VDC Update Project ❖ J. Steidl and M. Squibb

Appendix G documents the current status of the VDC.

Mindy has just received a large data set from Jim Cousins in New Zealand. The October Hawaii earthquake also added some data. They would like us to encourage people using the VDC to respond to the user survey on the web site.

Woody circulated Appendix H, "Long term future of the COSMOS virtual data center." This will be formally announced in early 2007. This document describes how COSMOS will continue to be involved. The primary roles are, in brief: 1) to continue to advocate for the VDC in the National Center; 2) to host the COSMOS SM-VDC working group as a COSMOS entity to provide diverse user input; 3) to facilitate international data contributions; and 4) to develop standards, practices, and policies in the SM_VDC.

John Parrish noted that this represents an expansion of COSMOS role that needs to go into the strategic planning session in January. Tony Shakal noted that the international data is really important, and outside of the scope of USGS or CGS. Jamie noted that Imperial College will allow access to European data, but implementation is not in place yet. Norm noted that in eastern US the threshold should be much smaller than 4.5, perhaps 3.0 or even lower. Roger Borcherdt asked about links to NEES. There are discussions but nothing is implemented yet. Jamie said they are thinking about adding their own processing for records that are not processed by the data provider. They also need to be sure that everything in NGA is in the VDC.

Specific suggestions in Appendix H should be evaluated by the Board. Parrish moved and Anderson seconded that COSMOS will perform those four roles. The motion was approved unanimously.

Outline of November 2006 Technical Session ❖ R. E. Bachman

Appendix I contains the Agenda for the technical session.

Review of Arrangements for Long-Range (5-year) Planning Group Activities and Report to Board of Directors ❖ R. E. Bachman

January 24-25. Participation from all members of the BOD is encouraged.

Review of Meeting and Consideration of Old Business ❖ W. U. Savage

Woody brought up the Bolt Award. Last April, Woody met with the EERI Honors Committee. The criteria proposed to EERI were (1) technical expertise in engineering seismology; (2) sustained productive engagement in multi-disciplinary seismic safety activities; and (3) personal leadership in achieving societal understanding and acceptance of improved earthquake policy and its implementation. The EERI Honors Committee's response was that it sounds like the Housner Award, which is awarded to individuals "who have made extraordinary and lasting contributions to public earthquake safety through the development and application of earthquake hazard reduction practices and policies."

Woody proposed that the Bolt award then might be for: technical contributions in engineering seismology and related fields, and leadership in transfer of knowledge into practice and policy. This proposal incorporated the discussion and comments from the EERI Honors Committee.

Anderson raised the question of whether we want to compromise the scope of the award to the point where EERI (and SSA) would agree, or whether we want to define our own scope. Norm recommended including the aspects of strong-motion instrumentation and data utilization in the award criteria. The contributions at the interface of seismology and engineering should be emphasized.

Woody will redraft the criteria, review them with Doug Dreger and Tony Shakal, circulate them to the COSMOS Board for additional comments, and then review them with C.B. Crouse of the EERI Honors Committee.

Adjournment

The meeting adjourned at 7:15 PM.

Dinner of COSMOS Board of Directors and Guests

Appendix A

COSMOS

Consortium of Organizations for Strong-Motion Observation Systems

BOARD of DIRECTOR'S MEETING

AGENDA

**16 November 2006
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Roll Call	J. Anderson
Adoption of April 24 Meeting Minutes	J. Anderson
Opening Remarks	W. U. Savage
Report of Director of Engineering Applications and update on COSMOS Short Course Development	R. E. Bachman
Status Report on On-going active COSMOS Projects	R. E. Bachman
Treasurer's Report and Presentation of the Proposed 2007 Budget	M. Power
Discussion and Adoption of the 2007 Proposed COSMOS Budget	
Report by Chair of General Membership on Member Feedback & Safer Cities Project	R. Borchardt
COSMOS VDC Update	J. Steidl and M. Squibb
Transition Plan for VDC	W. U. Savage
Outline of November 2006 Technical Session	R. E. Bachman
Review of Arrangements for Long-Range (5-year) Planning Group Activities and Report to Board of Directors	R. E. Bachman
Review of Meeting and Consideration of Old Business	W. U. Savage

Adjournment

Dinner of COSMOS Board of Directors and Guests

Appendix B

COSMOS

Consortium of Organizations for Strong-Motion Observation Systems President's Report

James F. Davis

I want to again thank you all for your continuing dedicated service to COSMOS. Looking back over the last decade, COSMOS has accomplished a great deal thanks to your efforts and the dedication of many other participants who have contributed their efforts and insights. COSMOS has made steady progress in accomplishing its Mission of facilitating the expansion and improvement of strong-motion data collection and processing, and the greater application of strong-motion time histories in engineering design.

COSMOS is a nimble, responsive organization that can act promptly in support when there are challenges to strong-motion programs and pursue opportunities to foster greater communication between the scientific community investigating strong motion and the engineering community that has the responsibility to employ the insights in achieving more effective earthquake resistant designs. We look forward to continuing these capabilities.

As we undertake the second decade of COSMOS activities, COSMOS continues to be in a state of evolution. COSMOS has, with the leadership of Carl Stepp and others, set up an apparatus in the COSMOS organization to initiate, develop, and oversee an effective COSMOS Virtual Data Center, which has been located at U.C. Santa Barbara. The opportunity to position and institutionalize the VDC as part of the National Earthquake Engineering Data Center, which will be co-managed by the United States Geological Survey and the California Geological Survey, is a desirable next step in the further advancement of the uses of strong-motion data. The COSMOS Board approved this transition last April at its Spring Meeting, and we will have a further update on its progress at the November 16 meeting.

Based upon its successes to date, it is crucial that COSMOS maintain its uniquely focused efforts in strong-motion activities. The COSMOS Board authorized that a long-range plan be developed for COSMOS Board's consideration. A progress report on development of the Long-Range Planning Group to develop this strategic plan for the next five years will be presented at the November 16 meeting. We intend to present the plan for COSMOS Board of Directors consideration at its Spring 2007 meeting.

I look forward to 2007 being a very successful and important year for COSMOS and the strong-motion community of data producers and users.

Appendix C

COSMOS

Consortium of Organizations for Strong-Motion Observation Systems Director of Engineering Applications' Report

Robert E. Bachman

This year's Annual Meeting and Technical Session will take place at the DoubleTree Hotel at the Berkeley Marina in Berkeley, California. The Annual Meeting will start promptly at 8:45 AM and adjourn by 9:45 AM. The Technical Session will begin at 10:00 AM and end at 5:00 PM. It will be followed by a no-host cocktail hour and poster session. More information on the Technical Session is available at the COSMOS website (www.cosmos-eq.org). The theme of this year's Technical Session, "An Evaluation of Methods for the Selection and Modification of Ground Motion Time Histories for Building Code and Performance-based Earthquake Engineering Applications," was selected in direct response to suggestions from participants from last year's session. The Technical Session has been developed Norman Abrahamson and me. The session is being co-sponsored by the Pacific Earthquake Engineering Research Center, and we are grateful for their support and involvement. The presenters are excellent and we encourage you all to attend. Note that we have changed our policy regarding registration fees for the Technical Session. This year the fees are \$80 for members and \$120 for nonmembers until Oct 15th. The fees increase by \$20 after Oct 15th and there is a special reduced fee for students. The fees pay for the costs for lunch, break beverages, room, and reproduction costs.

We are pleased to announce that the USGS and CGS have agreed to co-fund the support of the COSMOS Virtual Data Center through March of next year. At that time, the VDC will be merged into the U.S. National Center. More details will be forthcoming at the November 16th Board of Directors Meeting.

The development of COSMOS Short Course, to encourage more extensive and proper use of ground motion time histories in structural applications, is continuing. The course development is under the general direction of Professor Eduardo Miranda of Stanford University. Eduardo has been dealing with some very serious family health issues, and the development of the course has been somewhat delayed. We will discuss the status of the development of the short course at the Board meeting.

COSMOS is proud to have been a co-sponsor of the EQ-06 EERI/SSA 8th U.S. National Conference on Earthquake Engineering. COSMOS provided financial aid for three students who attended the conference. In addition, COSMOS had a booth at the conference, where we had demonstrations of the Strong Motion and Geotechnical VDCs. We are grateful Mindy Squibb, Jennifer Swift, and Claire Johnson who providing the primary booth staffing.

As we discussed at the last meeting, with the VDC being transitioned into the U.S. National Center and our Bylaws being way out of date, there is a need to develop a new long-range plan for COSMOS. Development of this plan was authorized at the April 24, 2006 Board

meeting. A long-range planning group of twelve individuals has been appointed by Jim Davis, and a meeting is scheduled for January 24-25, 2007. It was hoped that the group could meet sooner, but timing conflicts did not allow for an earlier venue. The group will consider suggested changes to the Bylaws, including election of officers by mail, as is done by many other organizations. The Board will be presented with the developed long-range plan and proposed Bylaw changes at their spring meeting for their comment and approval.

As COSMOS Director of Engineering Applications, my plan is to continually explore opportunities in which COSMOS can promote expanded use of earthquake strong-motion measurements in both research and engineering applications. This may include developing working relationships with seismic code development organizations to remove barriers and providing code clarifications that would promote their use. This year's Annual Meeting/Technical Session is an example of an implementation of this plan. I look forward to seeing you all at the Board Meeting on November 16th and COSMOS Annual Meeting and Technical Session on November 17th.

Appendix D

COSMOS LONG-RANGE PLANNING SESSION WORKSHEET

January 24-25, 2007

PEER Offices

Richmond, California

This worksheet is designed to serve as a guide for Planning Session participants to evaluate various aspects of Association operations in preparation for this session. It is also the sequential agenda we would like to follow during the session. Space is provided on the worksheet to note your reaction to the questions posed. **Please bring the worksheet with you to the session as an assist to your participation in the discussion.**

Each individual will be asked to participate from the outset in the form of a three-minute (no more!) presentation to the group covering the following:

What do you feel are the five (5) main areas in which COSMOS should concentrate its activity over the period of the long range plan considering the issues outline in this planning document?

- A.
- B.
- C.
- D.
- E.

OVERVIEW

In your opinion, what are the basic strengths, as well as weaknesses, of COSMOS as a whole?

Strengths

Weaknesses

What are the challenges, as well as opportunities, faced by COSMOS in the next few years?

Challenges

Internal

External

Opportunities

Internal

External

SPECIFIC AREAS OF EVALUATION

A. Purposes and Goals

1. Do the following purpose statements reflect and clearly define the current mission of COSMOS?

The purposes of COSMOS are to:

**Develop national policies and foster innovative ideas for the urgent improvement of strong-motion earthquake measurements and their applications;*

**Promote the advancement of strong-motion measurement on the ground and in structures and lifelines in densely urbanized areas and other locations of special significance to society likely to be struck by future earthquakes;*

**Encourage and assist the rapid, convenient, and responsive distribution of strong-ground-motion data according to standards of the Consortium;*

**Serve as a consortium through which programs, institutions, and engineers can work to solve mutual problems with recording instruments of all appropriate types, data formatting and dissemination, and data utilization; and*

**Improve user influence on data acquisition and multipurpose data dissemination processes*

2. Are the purpose statements of COSMOS being fulfilled?

3. Are goals being met?

B. Governance Structure

1. Are the major segments of the membership represented on the governing body?

2. With proposed modification of the bylaws, will the process for nominations and appointment for the governing body and all committees appropriate, and are the terms of service satisfactory?

3. With the proposed modification of the bylaws, are the Executive Committee and Board of Directors roles clearly defined, and are these roles being performed adequately?

4. How can we best provide opportunities for new leaders to emerge and move forward in a timely fashion?

C. Organizational Structure and Documentation

1. Will the proposed Bylaws be adequate for the current operational and legal environment?
(See Bylaws attachment)

2. Does the current organizational concept and structure reflect the purposes and goals of the Organization?

3. Is there a more efficient and effective organizational structure to achieve Organization goals and purposes?

D. Products, Programs, and Activities

1. Are Organization products, programs, and activities meeting the needs of the members?
 - (a) COSMOS Newsletter

Strengths

Improvements

- (b) Annual Business Meeting

Strengths

Improvements

(c) Annual Technical Session

Strengths

Improvements

(d) Advocacy representation

Strengths

Improvements

(f) Workshops and Workshop Publications

Strengths

Improvements

(g) Strong Motion and Geotechnical Virtual Data Centers

Strengths

Improvements

(h) Web Site Content (Visit Cosmos-EQ.org)

Strengths

Improvements

(I) Technical Short Courses ?

Strengths

Improvements

(j) Awards Program

Strengths

Improvements

(k) Committees and Boards (Strong Motion Board, Senior Advisory Board, etc)

Strengths

Improvements

(l) Member Roster

Strengths

Improvements

(m) Relations with Other Professional Organizations

Strengths

Improvements

2. Are support services and staffing levels adequate to administer organization programs and activities?

3. Are the functional relationships and responsibilities between staff and volunteers clear with respect to conducting programs and activities?
4. What new programs and activities might the Organization consider?

E. Membership Development and Retention

1. Why do members stay members? Why do members drop?

Stay because

Drop because

2. What are your recommendations to stimulate member growth?

F. Financial Planning and Reporting

1. Is the current system of handling day-to-day financial matters, event accounting, and general accounting and reporting procedures adequate and clearly presented on a timely basis?

Strengths

Improvements

2. Are Organization dues adequate to cover services rendered by the Association both now and in the future?
3. Is the budget process appropriate and timely?

4. Are adequate controls over money and property in place?

5. Are other income sources beyond dues fully developed including the reserve investment portfolio ?

G. Communications

1. Is the handling of internal communications (minutes, staff reports, paper flow, etc.) adequate?

Strengths

Improvements

2. Are external communications (correspondence, press releases, documents for public consumption, position on proposed legislation/regulations, relations with other groups and organizations, etc.) adequate?

Strengths

Improvements

3. In what ways may internal and/or external communications be enhanced?

OTHER ITEMS FOR DISCUSSION

Subject Area

Specifics

Appendix E

COSMOS

Consortium of Organizations for Strong-Motion Observation Systems COSMOS Project Activities

J. Carl Stepp

This report updates the report of COSMOS Project activities that was presented to the Board on April 24, 2006.

- **NSF Award CMS 0338094**

This Award provides \$171,630.00 for support of two workshops on site selection, installation and operation of geotechnical strong-motion arrays. The first workshop “*International Workshop for Site Selection, Installation and Operation of Geotechnical Strong-Motion Arrays: Workshop 1, Inventory of Current and Planned Arrays*”, was held at USC on October 14–15, 2004. The workshop proceedings were published in May 2006 – COSMOS Publication NO. CP-2004/01.

NSF released funds (\$83,580.00) for Phase II of the project in May 2005. Phase II funding supports the development of an implementation plan for geotechnical strong-motion array monitoring and coordination. Phase II has two main components:

1. The development of an implementation action plan for geotechnical array site selection, array installation, long-term operation, and archiving and dissemination of data.
2. Conduct of a second workshop: *Workshop for Site Selection, Installation and Operation of Geotechnical Strong-Motion Arrays: Workshop 2, Guidelines for Installation, Operation, and Data Archiving and Dissemination.*

The second workshop was held May 17–19, 2006 at the San Diego Super Computer Center, U.C. San Diego. One and one-half days were devoted to workshop presentations and discussions and one and one-half days were devoted to guided field trip to two Network for Earthquake Engineering Simulation (NEESinc) Experimental Arrays. NEESinc through NEES Information Technology Center (NEESit) and the NEESinc Geotechnical Array Equipment Sites grants at U.C. Santa Barbara and UCLA collaborated with the workshop by providing the workshop venue and by providing leadership and funding support for the field trip component of the workshop.

The performance period for the workshop is scheduled to end December 31, 2006. However, preparation of the proceedings is behind schedule and will require a no-cost extension of the project to March 31, 2007.

PEER Lifelines Projects

- **PEER LL Project 2L02**

This project provided funds for the COSMOS-PEER LL Project: “*Archiving and Web Dissemination of Geotechnical Data: Development of a Pilot Geotechnical Virtual Data Center (GVDC)*”. The Project was closed on June 30, 2006. The project final report was submitted to PEER in December, 2004 and has been formally accepted by PEER LL. The Pilot GVDC can be accessed at <http://geodata.cosmos-data.org> and the 2L02 report can be accessed at http://peer.berkeley.edu/lifelines/LL-CEC/reports/final_reports/2L02-FR.pdf. Limited geotechnical data from the four database providers that participated in the Pilot System, CGS, Caltrans, PG&E, and USGS, can be searched.

- **PEER LL Project 2L03**

PEER LL 2L03 provided funding in the amount of \$124,068.00 for completing enhancements to the COSMOS-PEER LL Pilot GVDC that was developed in PEER LL Project 2L02, for expanding the data exchange model (COSMOS XML, v1.0) to include various seismic velocity (i.e., PS-Logger, Downhole Logs, Crosshole velocity data and shear-wave velocity profiles) and *in situ* testing and laboratory testing data, for upgrading the system server hardware to the newly acquired commercial level server located at USC, for purchasing and installing a sister site server at COSMOS/PEER, and for developing an operation and maintenance plan for the long-term implementation of the system. A major objective of the project is to develop a geotechnical data model and exchange format that allows seamless exchange of data among data providers and geotechnical data dissemination organizations.

In consultation with PEER LL, the decision was made to enter into collaboration with the newly formed Transportation Pooled Funds (TPF) Project 918 for the purpose of developing an international geotechnical data exchange standard. The TPF Project 918 is funded by 12 participating state transportation departments (DOTs). The Federal Highway Administration (FHWA) is coordinating the effort, which in addition to the 12 state DOTs, has participation of the US Army Corps of Engineers, US EPA, US Geological Survey, United Kingdom Highway Agency, University of Florida, the Association of Geotechnical and Geoenvironmental Specialists (AGS), the British Construction Industry Research and Information Association (CIRIA), and COSMOS. The resulting international geotechnical data exchange standard, called the *Data Interchange for Geotechnical and Geoenvironmental Specialists* (DIGGS) standard has been completed and was issued for public comment in September 2006. The development of the DIGGS standard started with the COSMOS-PEER LL Pilot XML Geotechnical Data Exchange schema, the AGS geotechnical data model, and a data dictionary that was under development at the time at the University of Florida. The DIGGS standard incorporates the enhancements to the COSMOS-PEER LL geotechnical data dictionary that have been developed under Project 2L03. All parties to the collaboration have agreed to adopt the DIGGS standard for exchange of geotechnical data in a common data model that facilitates ready internet exchange of data.

Replacing the COSMOS XML data exchange schema with the DIGGS standard schema required modification of the Project 2L03 statement of work and about an 18 month extension the completion date for the project. Revision of the project scope of work has been completed and the revised plan for completion of the project is pending PEER LL approval. The project is scheduled to continue through March 31, 2007.

Appendix F

COSMOS Consortium of Organizations for Strong-Motion Observation Systems Treasurer's Report

Maurice Power

Attachments hereto contain the details of the Treasurer's Report: (1) 2006 Budget; (2) Profit & Loss Statement vs. Budget and Balance Sheet for 2006; (3) COSMOS Membership for 2006; (4) Contracts and Grants Extant in 2006; (5) Preliminary 2007 Budget.

2006 Budget

The 2006 Budget in Attachment 1 is unchanged from that adopted by the Board of Directors at its April 2006 meeting. Notes are provided in the attachment to provide explanation for some budget items where the item or the basis for budgeting is not obvious.

Profit and Loss Statement vs. Budget Plan and Balance Sheet for 2006

Attachment 2 compares the actual cash income and expenditures in the COSMOS QuickBooks accounts through October 12 vs. the budgeted amounts through December 31, 2006. The date of October 12 was determined based on the latest date that income and expenditures could be recorded in the COSMOS accounts by the Office Manager, Claire Johnson, before her leave from the office for surgery. Notes in the attachment address income and expenditures for various budget items. The following comments highlight income and expenditure items and net income shown on the Profit and Loss Statement and the financial position shown on the Balance Sheet through October 12 and anticipated changes through the end of 2006.

- Contract income and expenditures through October 12 and projected to the end of the year are less than budget amounts due to slower rate of progress on active projects for which time extensions have been obtained to carry over contract funding and work into 2007. Project 2L03 with PEER Lifelines Program has been temporarily placed on hold since June 30 because of PEER's need to shift the Lifelines Program funding to a new master contract with program sponsors.
- Membership income will be close to budget when USGS dues and additional individual dues are received and posted in the COSMOS accounts. USGS membership dues have been received since October 12, as indicated in the detailed tabulation in Attachment 3.
- Grant funding for the Strong-Motion Virtual Data Center at University of California at Santa Barbara: By the end of 2006, it expected that the obligation to UCSB of \$50,000 each by USGS and CGS grants for a one-year period will be fully funded and paid to UCSB.

- Based on estimated additional income and expenditures from October 12 through the end of the year, it is estimated that there will be a net income for 2006 of approximately \$6,000, as compared to the budgeted net income of \$10,600. The corresponding estimate of total assets at the end of 2006, as reflected in the Balance Sheet, will be approximately \$211,000. These estimates are preliminary and will be finalized at the year-end accounting with review from our accounting firm. The year-end accounting will take into account any accounts receivable and liabilities as of December 31, 2006.

2007 Budget

The preliminary 2007 budget is presented in Attachment 5. Key elements include the following: (1) Contract amounts are based on carry-over amounts to 2007 estimated by the Project Manager, J. Carl Stepp; (2) Budgeting has been included for the scheduled Long Range Planning Meeting in January; (3) Budgeting has not yet been done for the Annual Meeting Technical Session in 2007 or for the planned Short Course. At this time, a judgment has been made by the Director of Engineering Applications, Bob Bachman, that these events will be break-even; and (4) Support for the Strong Motion VDC is budgeted through March 31, 2007. The preliminary estimate of net income for 2007 is \$1,900. The budget should be reviewed based on the year-end accounting and the results of the Long-Range Planning Meeting, and finalized and approved by the Board at the Spring 2007 Board meeting.

Appendix G

COSMOS

Consortium of Organizations for Strong-Motion Observation Systems Report of the Virtual Data Center

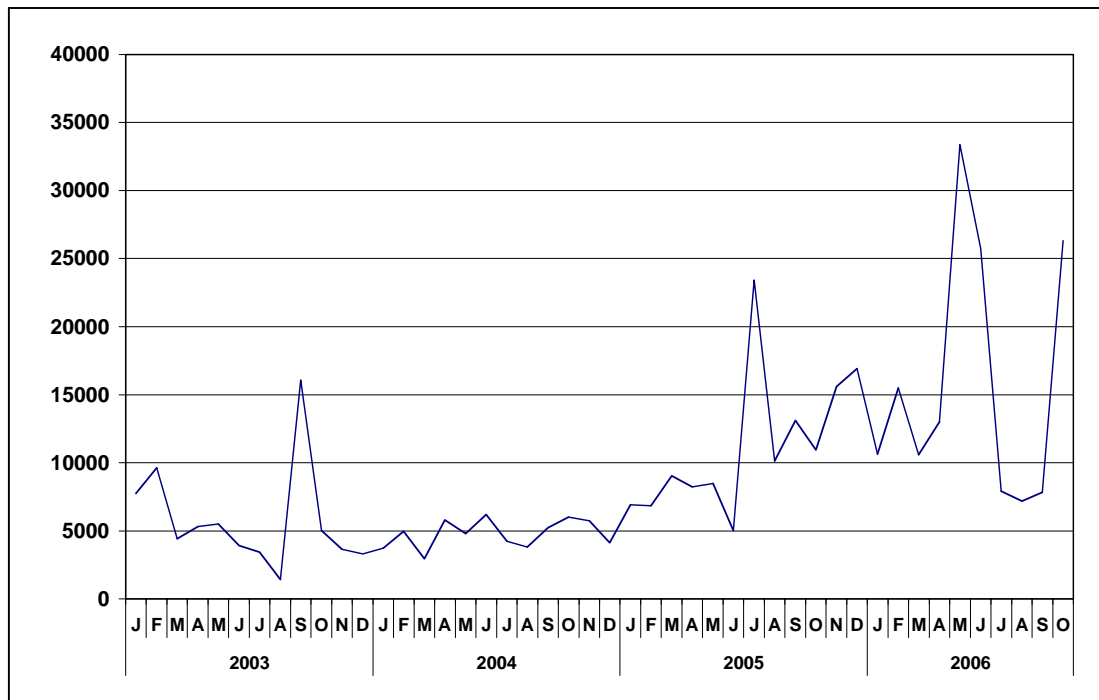
Jaime Steidl and Melinda Squibb

New Data:

	Sept 2001	Nov. 2005	Nov 2006	% increase in 2006
Earthquakes	199	515	602	17%
Stations	1,744	3,108	3,423	10%
Accelerograms	11,537	26,563	31,607	19%

New data includes a dataset from the New Zealand GNS since 2001 (72 earthquakes, 168 stations and ~4000 accelerograms), 8 events from Japan's K- and Kik-Net networks, 5 from Hawaii including the recent Oct 15th Mw 6.7 earthquake and one each from Puerto Rico, Mexico and California.


Number of Files Selected for Downloading from the VDC:



Projects and Updates to the Website:

- Restructured the database, adding tables for magnitude and point (the intersection between event and sensor), for more efficiency. Adjusted all administrative and web scripts to accordingly.
- Made substantial progress on a new Tagged format and XML format to provide a common format for VDC metadata processing and facilitating user access.
- Wrote applications to convert and display these new formats. Currently can convert Cosmos v1.2, CSMIP, USGS's SMC, K-Net and Kik-Net's Japan format and GNS' New Zealand format into the tagged format. One can display plots of the data and adjust the range values of the time/frequency axis.
- Wrote an application to split CSMIP and New Zealand files into component files.
- Made VDC events and stations available as a KML file for input into GoogleEarth. The file automatically updates every 24 hours.
- Paper accepted for publication to SRL.
- Published a User Survey on the web.

CosmosConverter


 The Consortium of Organizations for Strong-Motion Observation Systems

/Users/mindy/Desktop/cosmosTest/SMC/tagged/20050902_012650_NP_5062_Ch1_Sa.cosm

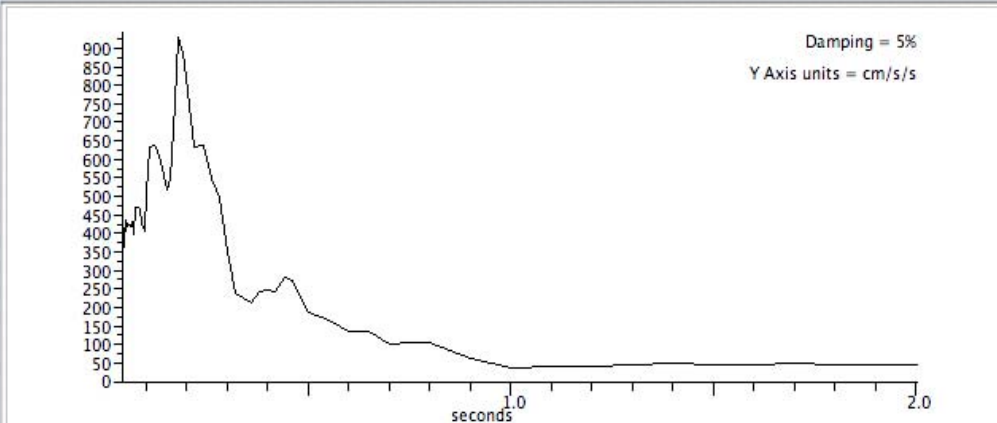
```

ThisFile.Format_txt           = "CTF.1.0";
ThisFile.CharacterEncoding_txt = "US-ASCII";
ThisFile.Preparation.Agency_txt = "cosmos";
ThisFile.Preparation.DateTime_txt = "2006-11-10 19:38:35Z";
ThisFile.NullDoubleValue_dbl   = -1.80E+104;
ThisFile.NullIntValue_dbl      = -2147483648;
DataSeries.PhysicalParameter_txt = "Response Spectra (Sa)";
DataSeries.Cause_txt           = "Seismic Trigger";
Point.Name(1).Agency_txt       = "NP";
Point.Name(1).ShortName_txt     = "5062";
Point.Name(1).Description_txt   = "CA: Salton Sea Wildlife Refuge";
Array.Agency_txt               = "NP";
Point.Location(1).Latitude_dbl  = 3.3177399E+01 deg;
Point.Location(1).Longitude_dbl = -1.1561560E+02 deg;
Point.Location(1).Elevation_dbl = -7.2000000E+01 m;
Point.Location(1).Agency_txt   = "NP";
Point.StructureInfluence_txt    = "Free field";
Event(1).Hypocenter(1).Agency_txt = "NEIC";
Event(1).Hypocenter(1).DateTime_txt = "2005-09-27 11:49:53Z";
          
```

Display Header as:

Text

XML Tree



Damping = 5%
Y Axis units = cm/s/s

seconds

Display Data as:

Text

Plot

X Axis: Min Max

% Damping:

COSMOS VDC Report: 2006-11-1 10:22:48
Number of Traces Selected for Download

2006-05	2006-06	2006-07	2006-08	2006-09	2006-10	Owner
9	0	0	9	0	0	Advanced National Seismic System
41	9	6	18	4	14	Alyeska Pipeline Service Co.
72	7	3	35	20	12	Army Corps of Engineers
431	308	11	24	123	16	Bogazici University, Kandilli Observatory, Turkey
15	8	1	9	0	0	California Department of Water Resources
149	270	37	56	46	141	California Institute of Technology
8464	12019	2152	2817	3213	11123	California Strong Motion Instrumentation Program
19	565	22	3	56	8	Centro de Investigaciones Geotecnicas
90	62	119	322	145	209	Department of Geophysics and Geodesy, Santiago Chile
909	246	92	303	185	284	Dept of Earthquake Eng., Indian Inst. of Technology, Roorkee, I
31	15	2	9	5	3	Geological Survey of Canada
59	48	19	10	7	10	IRIGM: Universite Joseph Fourier, Grenoble, France
295	240	37	459	43	144	Institute of Geological and Nuclear Sciences Ltd, New Zealand
40	24	6	7	0	10	Instituto Geofisico del Peru
13	59	33	41	18	4	Instituto de Ingenieria de la Universidad Nacional Autonoma de
5	9	11	0	3	3	Joint Institute of the Physics of the Earth,RAS, Moscow
6384	947	921	390	59	1231	Kiban-Kyoshin Network, Japan
3871	452	762	60	94	989	Kyoshin Net, Japan
216	408	87	50	84	187	Los Angeles Department of Water and Power
3	0	0	6	0	0	Los Angeles Flood Control
88	130	20	29	26	59	Metropolitan Water District
15	34	0	6	2	18	Multidisciplinary Center for Earthquake Engineering Research
18	13	0	0	9	8	National Survey for Seismic Protection, Armenia
9	9	17	2	12	15	Northern California Seismic Network
169	25	0	16	31	37	Private owner of building or structure
18	0	0	0	0	0	Puerto Rico Strong Motion Program
10	0	0	0	0	3	PuertoRico Seismic Network/Puerto Rico Strong Motion Program
7	0	7	6	0	0	Seattle Light and Power
4336	549	1298	407	1253	2534	Seismology Center, Central Weather Bureau, Taipei, Taiwan
76	142	14	22	22	73	Southern California Earthquake Center
10	20	18	15	8	4	Southern California Edison
18	0	0	18	0	0	Tacoma Public Utilities
75	12	6	78	6	6	USGS Geologic Hazards Team
19	85	53	3	32	15	United States Bureau of Reclamation
4999	6169	1637	1369	1650	7062	United States Geological Survey
30	279	6	29	54	5	Universidad CentroAmericana, San Salvador, El Salvador
37	0	1	26	0	3	University of Alaska Geophysical Institute Anchorage Region
0	0	0	0	3	9	University of California at Berkeley
12	0	0	3	0	0	University of California at Los Angeles
206	98	209	38	140	254	University of Nevada Reno
1953	2454	285	366	450	1790	University of Southern California
125	2	6	124	3	4	University of Washington, Geophysics Program
16	7	0	16	16	18	Washington Dept. of Natural Resources
33362	25724	7898	7201	7822	26305	Total

This table is dynamic. Information on number of traces downloaded is deleted after 6 months, so the first month in the table above may already have had traces from the date on which this page is invoked. A 'trace' is comparable in most cases to one channel of a station. If owners make their data available in zip files, the total number of traces downloaded may be greater than the number of traces selected for download as many traces as are contained in the file.

Version 2, 11-16-06
For discussion at the COSMOS Board meeting on November 16, 2006

National Center for Engineering Strong-Motion Data

In October 2005, the USGS and CGS completed a Memorandum of Agreement that formed the National Center for Engineering Strong-Motion Data. The National Center, an evolution of the CISN Engineering Data Center, will provide for the integration of CSMIP, NSMP, and ANSS strong-motion data collection and processing, and delivery of the integrated data to engineering users and others. As noted in the MOA, the intent of this agreement is to provide a cooperative basis for: 1) integrating California and national strong-motion data and metadata of engineering interest from both ground response and structural response stations, and 2) integrating procedures in Sacramento and Menlo Park for processing strong-motion records, archiving the raw and processed data and associated metadata; and 3) providing access by users to the raw and processed data and metadata. The National Center is expected to begin formal operation on January 1, 2007.

The National Center is managed by four representatives, two from CSMIP and two from NSMP, who form the Center Management Group. An Advisory Committee provides independent oversight and comprises six individuals, three each selected by the USGS and the CGS, respectively, and one senior management representative from each organization. Funding for the National Center will be shared between CGS and USGS.

Incorporation of SM-VDC Functions in the National Center

The nascent National Center includes provision for a data delivery system that couples processed strong-motion data from California and the rest of the nation with data searches and distribution of data to users. Currently, the data search and data distribution capabilities of the CISN EDC and the more primitive capabilities of the USGS NSMP do not satisfy the needs for an integrated data delivery system for the National Center. It is recognized that the COSMOS SM-VDC data accessing, storage, and search engine would be an excellent solution to the needs of the National Center to maximize public access to processed strong-motion data in a reliable, cost-effective, and user-friendly manner. After extensive discussions among the COSMOS Board, the Center Management Group, and the UC Santa Barbara staff, the broad agreement was established to relocate the operation and administration of the SM-VDC into the National Center from Santa Barbara under permanent funding from CGS and USGS.

Roles of COSMOS with Respect to the Future Operation of the SM-VDC

USGS and CGS continue to support the purposes and principles of COSMOS, as described in its Charter, with regard to the operation of the SM-VDC in the new National Center. There are at least four roles that COSMOS may elect to perform that would enhance the ongoing value of the SM-VDC to COSMOS members and all other strong-motion data providers and users:

1. *Advocate and vouch for the SM-VDC in the National Center:* COSMOS would continue to receive credit for its historical role in the SM-VDC, and for assisting in sustaining the SM-VDC into the future as an acknowledged sponsor. In this capacity, COSMOS would be continuing its support of the CGS and USGS as Core COSMOS members. Thus, COSMOS would continue to be affiliated with the SM-VDC, unburdened of its previous financial and administrative responsibilities. The SM-VDC would, in turn, acknowledge COSMOS support and link to the COSMOS web site. COSMOS is also a member of the ANSS National Steering Committee and provides advocacy and advice on behalf of the SM-VDC in this forum.
2. *Host the COSMOS SM-VDC Working Group:* COSMOS may reconstitute the COSMOS VDC Working Group in order to provide diverse user input for the improvement and the functionality of the SM-VDC. Members of the SM-VDC Working Group would be selected by COSMOS. The Chair of the SM-VDC Working Group would serve on the National Center Advisory Committee as an ex-officio (non-voting) member.
3. *Facilitate international data contributions and linkages to the SM-VDC:* International contributors of data and international users of the SM-VDC data are, and should continue to be, an important component of the SM-VDC. COSMOS would continue to solicit international connections and participation by data providers. COSMOS can also provide advice to USGS and CGS on how to best maintain contacts with international data providers. COSMOS would be an “International Ambassador” for the SM-VDC. As a member of the ANSS National Steering Committee, COSMOS can advise on the international aspects of the SM-VDC.
4. *Develop standards, practices, and policies for use in the SM-VDC and the National Center:* COSMOS has been productive in developing consensus guidance for the strong-motion community, which has had significant positive impact on the underpinnings of the National Center and the SM-VDC. These have included guidelines for siting and installing strong-motion free-field and reference stations, development of the COSMOS Data Format, guidance for building instrumentation, and recommendations for standards for standardized processing of strong-motion records for engineering applications. This role of COSMOS is analogous to the role of the Federation of Digital Seismograph Networks (www.fdsn.org) for operators of broadband stations in encouraging open data access, developing standards for data exchange and quality, and coordinating station siting.

In summary, COSMOS would continue to fill important roles in the long-term future of the SM-VDC. These include significant advisory activities relating to the SM-VDC through COSMOS’s presence on the ANSS National Steering Committee and on the National Center Advisory Committee, and through identifying members of and hosting the SM-VDC Working Group. Along with its principal advisory roles, COSMOS would continue to support the National Center (and its partner operators, USGS and CGS) through activities of the COSMOS Strong Motion Programs Board, which handles the development of standards, practices and policies for the members of COSMOS. COSMOS would continue to develop and offer workshops and other value-added resources to help users of strong-motion data. These COSMOS roles are a powerful

complement to the basic data delivery activities carried out by the National Center including the SM-VDC.

Appendix I

2006 COSMOS Annual Meeting/Technical Session Program

Co-sponsored by the Pacific Earthquake Engineering Research Center

Friday, November 17, 2006

10:00 AM – 5:00 PM

DoubleTree Hotel, Berkeley Marina

An Evaluation of Methods for Selection and Scaling and Modification of Ground Motion Time Histories for Building Code and Performance-based Earthquake Engineering Applications

10:00 AM	Welcome and Overview of Session	Bob Bachman
10:10 AM	Overview of Selection and Scaling Issues	Norm Abrahamson
10:20 AM	Example of Wide Dispersion of Results following Code Procedure	Jennie Watson-Lamprey
10:45 AM	ATC-63 (The R factor project): Selection and Scaling Procedure and What It Is Trying to Achieve	Charles Kircher
11:05 AM	ATC-58 (Next Generation PBEE): Selection and Scaling Procedure and What It Is Trying to Achieve	Andrew Whittaker
11:25 AM	Breaking the Uniform Hazard Spectra into Component Scenario Events: the Effect of Epsilon on Structural Response	Jack Baker
11:45 AM	Lunch (Box Lunches) – VDC Booth	
12:45 PM	PEER Ground Motion Selection and Scaling Working Group	
	* Overview	Yousef Bozorgnia & Norm Abrahamson
	* Categorization of Selection and Procedures Based on the Goal of the Analysis Procedures	Nicolas Luco
	* Structural Models	Curt Haselton
	* Results	Jennie Watson-Lamprey
3:00 PM	Break	

- | | | |
|------------------|--|----------------------------------|
| 3:20 PM | Panel Discussion: Observations Regarding Discussion of Evaluation Results, Suggestions for Improvements in Selection and Scaling Procedures
Panelists: Norm Abrahamson
Jack Baker
Yousef Bozorgnia
Charles Kircher
Nicolas Luco
Andrew Whittaker | Bob Bachman,
Moderator |
| 4:00 PM | Audience Participation: Q & A for Panelists | Bob Bachman,
Moderator |
| 4:40 PM | Wrap up and Summary of Discussion | Bob Bachman &
Norm Abrahamson |
| 5:00-
6:00 PM | No-Host Cocktail Party to Permit Further Discussion | |