

CISN Advisory and Steering Committees Meeting

27 September 2007

Caltech Seismological Laboratory, Pasadena CA

Summary of the Meeting

Participants

Advisory Committee Members Present: Stu Nishenko (chair), Loren Turner (vice-chair), Dan Shapiro, Yi-Ben Tsai, Hope A. Seligson, and Richard McCarthy.

Steering Committee Members Present: Jeroen Tromp (chair), Peggy Hellweg, Jim Goltz, Doug Given, David Oppenheimer, John Parrish, Tony Shakal, Egill Hauksson, Woody Savage

Guests: Margaret Vinci, Rayo Bhadha, James Agnew, Jamie Steidl, and Johanna Fenton

Advisory Committee members not present: Edward Bortugno, Paul Jacks, Neal O'Haire, Dan Dyce, David Kennard (replacing Jeff Lusk), Rob Alsop, Richard Gailing, Yousef Bozorgonia, and Peter Shearer

Steering Committee members not present: Rufus Catchings, Barbara Romanowicz

Opening Remarks and Approval of Minutes

Opening comments were offered by Jeroen Tromp (host of the meeting), and Stu Nishenko. Jeroen extended his welcome to all meeting participants. Stu extended his welcome to existing and new members of the advisory committee. He also recognized Greg Beroza, Chris Poland, and Maury Power for completing two three-year terms as members of the CISN Advisory Committee, and thanked them for their service.

The minutes were approved for the 30 August 2006 Advisory and Steering Committees meeting.

Action items:

- 1) Jeroen Tromp asked the PMG to provide language for modifying the CISN MOU to allow a member of the advisory committee to serve a third term. In this particular case, the advisory committee has asked that Stu Nishenko continue as a chair for another year.
- 2) The Steering Committee is asking the PMG to provide documentation about how much has been invested in the Japanese EEW system.
- 3) The Steering Committee is also asking the PMG to provide documentation of what are the next logical steps in improving the CISN and how this may lead to a network capable of proving EEW at some date in the future.

- 4) The PMG to look into ShakeMap issues. There is a need for a clearly labeled version number on each ShakeMap and associated time stamp. There is also a need to inform users about the quality of the ShakeMap, and if the latest map is complete – in other words how likely are future ShakeMaps to be significantly improved over the current version. Possibly make one more version of ShakeMap that shows legislative boundaries.
- 5) The PMG to provide talking points to Dick McCarthy for his visit to Japan. Dick McCarthy asked for a mandate to represent the CISN on his trips to Japan later this fall. He also asked for appropriate talking points about the CISN and the future prospects of implementing EEW in California.

Summary Review Status of CISN

(Additional detail is provided in the PowerPoint presentations that are posted on this web site).

Doug Given provided a brief PowerPoint review of the current operations and technical status of CISN. Presented goals of CISN and the membership of CISN. Provided a list of new installs. Discussed XML formats that are being developed by CISN. Numerated the software accomplishments, and that ANSS was planning to redistribute the CISN software to other networks.

Discussion: Some discussion followed about the importance of XML schemas and how these could develop into worldwide standards. Also, how will CISN software be released and its use by other networks was also discussed.

Dave Oppenheimer discussed recent developments within ANSS and how these may influence the development of CISN in the future. He described the ANSS performance standards and how CISN was able to meet these. He also discussed various modules in CISN software and how these were being adapted by ANSS, such as SeisNetWatch that was initially developed as part of TriNet and called TriNetWatch.

David pointed out that ANSS was going out for a bid for a continuous waveform archive repository. This may affect long-term operations at the NCEDC and the SCEDC.

David described the NetQuake that is a new instrument being built by a contractor to provide inexpensive strong motion data at high density. He stated that we need may be 1 km spacing for ShakeMap—this new instrument will allow us to accomplish that.

Discussion: There was significant discussion of the new NetQuake device, instrument response, how it will communicate, and how these instruments will be operated.

Peggy Hellweg provided an overview of the earthquake early warning (EEW) testing of algorithms that is going on inside the CISN. USGS, Caltech, UC Berkeley, and SCEC are involved. The work focuses on testing alternative algorithms that could be used in a statewide early warning system. The warning times involve a few seconds to a few tens of seconds. She provided a short economic analysis and explained how the US was falling behind other countries that were aggressively deploying early warning.

Discussion: Some discussion followed about who would operate an EEW system in the US. John Anderson said that the economic argument presented for EEW in the US was weak. Dick McCarthy said that the economic argument could be strengthened.

Jeroen Tromp gave a short presentation about ShakeMovie. He explained how the production gets triggered and how a 3D velocity model is used.

Discussion: Discussion followed about how this could be used to improve communication of information following the earthquake. Also, some interest was expressed about overlaying ShakeMovies on Google maps.

Tony Shakal reported on the development and status of a new National Center for Engineering Strong-Motion Data, cosponsored by USGS and CGS. The National Center represents an expansion of the scope of the CISN Engineering Data Center (EDC) to cover the nation. Strong-motion data of engineering interest from around the nation will be uniformly received from CISN and other networks across the country, processed according to established standards, and made available through a user-friendly web portal, such as that used by the CISN EDC. A key need is to prepare and maintain current and accurate information about all strong-motion stations, both reference and structural.

Discussion: Data will be provided to users in COSMOS data format. The National Center will have the national responsibility to process, review, and provide the data for engineering users. The ANSS regions will receive credit for collecting the raw strong-motion data, and will continue to use the strong-motion records for ShakeMap production and other regional uses, but the processing for engineering users will be done at the National Center. National standards will be used to assure quality and reliability of the strong-motion recordings and station metadata that are entered into the National Center. Processing of data for engineering purposes at the National Center will likely be limited to earthquakes of about magnitude 3.5 and larger, but raw data will be available for all earthquakes from all ANSS networks, including CISN.

Doug Given gave a short introduction to the use of ShakeCast to distribute ground motion information.

Loren Turner talked about how ShakeCast is used within Caltrans and how Caltrans is starting to rely on the information in their response. Caltrans needs to monitor more than 12,000 bridges and other structures. He explained that the earthquake information fills an important role in informing managers during the first two hours following the earthquake.

Discussion: The discussion focused on how important it is to get reliable earthquake information quickly and how this bridges the gap before TV and other news reports are available. Also, significant user education is needed to allow users to deal with possible false alarms.

Dave Oppenheimer gave a short presentation explaining the weak points in the CISN when we rely on M_d determined from duration of ground shaking as recorded by short-period high-gain stations.

Discussion: Improvements in user education was discussed. Also, where should the checks be made before ShakeMap starts processing to ensure internal consistency of the data. Some discussion followed about the need for version control, and notification about a final ShakeMap, to let the users know what they should work with.

Discussion of the Budget Change Proposal (BCP)

Jim Goltz explained how the BCP came about and its current status. He explained that OES management had decided not to submit the BCP to Dept. of Finance because there was a five years sunset limit on the current funding, which we have now exceeded by two years. Jim explained that OES management was supportive of seeking legislation to obtain additional funding.

Dick McCarthy pointed out the difficulty of getting legislation through in the current political climate. He also suggested that the CISON explore alternative ways such as the bond route. He also pointed out the importance of emailing ShakeMaps that showed legislative boundaries to legislators. John Parrish made a point of explaining that we should be careful about how we ask for new funding. He said that we could not state that the system was crumbling. His preferred language was to say that we needed to complete CISON as originally conceived; we were 50% and needed funds to complete the system. Dan Shapiro pointed out the cost benefits needed to be stated more clearly.

David Oppenheimer pointed out that the BCP did not have enough funds in it to pay for EEW. He said that we should avoid getting into the difficult situation of being caught into doing EEW on a shoestring.

Discussion of CISON Outreach

Jim Goltz reviewed the objectives of the outreach effort. These include an effort to increase the numbers of users and the effectiveness of their use of products. He also reviewed the status of the various products with respect to outreach activities.

Discussion: The issue of our products being useful came up, with television media being an example of a failure to get beyond the epicenter bulls eye.

David Oppenheimer reviewed the status of CISON Display use. He pointed out that the CISON display has about 691 active users and ~85 users connected all the time.

Sue Hough introduced Erik Pounders who works for the USGS Pasadena Office and specializing in earthquake related outreach.

Separate Meetings of Advisory and Steering Committees

Joint Discussion: Advisory Committee Report

The Advisory Committee reelected Stu Nishenko as Chairman, but his term has expired. J. Tromp asked the PMG to review the CISON MOU and suggest new language that would allow Stu Nishenko to continue for another term.

Stu reported on four proposed points that were discussed by the Advisory Committee in their closed-door meeting for the Steering Committee to consider during the coming year.

- The advisory committee recommended developing an additional version of ShakeMap showing the legislative boundaries and possibly lack of accuracy where there are no instruments in certain districts.
- The advisory committee also recommended that government relations staff from CISN core institutions be invited to participate in future strategic sessions for identifying possible funding sources for CISN.
- The advisory committee discussed the need for a master plan for the state to build a 21st century optimized statewide seismic network.
- The advisory committee suggested that the CISN submit a proposal to the Seismic Safety Commission to fund efforts to increase the visibility of the CISN.

Report from the Steering Committee

Jeroen Tromp summarized the discussions about EEW by the steering committee. A long discussion took place about EEW; who should pay for this? Who would actually operate it? and how it compared to the Japanese system.

Sue Hough pointed out that the USGS will move forward with EEW in the future.

The steering committee agreed to ask the PMG the following:

- 1) To obtain as much information as possible on the cost of the EEW system in Japan and how long it took to build it.
- 2) To draft a document on how CISN should continue to grow in the future including scheduling and budget estimates. This should include EEW as one possible task.

The long-term goal for steering and advisory committees is to explore possible future funding mechanisms for CISN, including the possibility of implementing EEW.

Adjourn Meeting

Meeting presentations are available on the CISN web site at <http://www.cisn.org/advisory/2007.09.27.html>.

Optional Tour of the Caltech Seismo Lab

Tour leaders: Jeroen Tromp and Egill Hauksson