

Notes from TIC WG E Conference Call #4
Thursday, January 27, 2005 (1:00–2:10 pm EST)

Participants

Walter Arabasz, Chair/Recorder
Glenn Biasi
David Oppenheimer
Rick Schult
Tony Shakal
Mitch Withers

Absent: Ray Buland, Art Lerner-Lam, Phil Maechling, Tom Murray

Agenda

1. Information updates
2. Outstanding action items
3. Elements to be included in final report
4. Finding common ground on technical recommendations
5. Action items from today's call

1. Information Updates

Walter asked David Oppenheimer if there were any new USGS developments relevant to our working group—other than Bill Leith's e-mail of 1/18/05 describing proposed new funding for the USGS in the aftermath of the Sumatran earthquake. [Among other things, the proposed funding would be directed to software and hardware upgrades to NEIC, internal/external funding for algorithm improvement studies, robust 24 x 7 operations at NEIC, and expanded dissemination of CISON Display.] David reported that the USGS Integrated Products Team had recently met in Golden to review what the USGS should be spending ANSS funds on, including Earthworm development, Hydra enhancements, and software development for items already "in the pipeline." If our TIC Working Group E ("wge") were to recommend some specific software development, it's conceivable, according to Dave, that some new money in the USGS supplement could be applied

2. Outstanding Action Items

The following items are still outstanding from past meetings and conference calls:

- Walter Arabasz — In order to balance the interviews for the Road Map for Partnership, interview USGS managers/network seismologists: Bill Leith, Harley Benz, David Oppenheimer, and Ray Buland
- Walter Arabasz (with help from Rick Schult and Glenn Biasi) — Finalize a stand-alone document on the Baldrige National Quality Program explaining BNQP, why it should be adopted by ANSS for long-term guidance, and giving specific examples of implementing BNQP

- Ray Buland — Distribute copies of the Booze-Allen report (an earlier consulting review of OFR 02-92) to members of “wge”

3. Elements to be Included in Final Report

There was agreement that wge work on a “Road Map for Partnership” and the Baldrige National Quality Program—both of which concern ways to deal with political obstacles to changing the status quo—should be elements of our final report. But how they are included will be decided later.

The draft document, *TIC WG-E—Evolutionary Architecture*, dated 11/15/04, was recognized as a good starting point for a final report. The biggest remaining challenge is to find common ground on specific technical recommendations for an evolutionary architecture.

4. Finding Common Ground on Technical Recommendations

David Oppenheimer referred to suggestions he made in his group e-mail of 12/21/04 regarding how to move forward. In order to have partnerships, obstacles have to be eliminated, and it’s premature, in David’s view, for us to know how things will “shake out.” He recommended softening the recommendation for an Integrated Processing Service (IPS). David believes the proposition should still remain on the table, but we shouldn’t insist that it be a design goal because, at this stage, it’s a “show stopper.”

The IPS concept has value and would provide better products for ANSS, according to David. Although it’s a viable concept, it’s not a necessary requirement. We need to move toward capable software. David agreed with Glenn Biasi that it may not be necessary to forward all waveforms to a centralized facility. Continuous archiving, however, is important, and there need to be better regional efforts to this end. If we focus on functionalities, we can be more productive in consensus building.

Mitch Withers suggested that we could make significant improvements with an IPS because there are many performance aspects that networks in most parts of the country can’t do as well as west-coast networks. Mitch likes the idea of “putting data into a hopper and getting back a full suite of products.”

Walter Arabasz asked whether it made any sense to consider a region-by-region approach to coordinating data processing, rather than a single model for all regions. Glenn Biasi considers a regional approach a natural way to go. He said he hadn’t heard any resistance to having an NEIC-like capability for assured response to large earthquakes. The next step, in his view, is to ask, How do we rationalize products and service delivery? For example, in the eastern U.S., centralization is practical, and an “opt-in” type of model for centralized processing makes sense.

David Oppenheimer put forward the view that wherever seismic monitoring is supported by public funding—whether to the USGS or even from the state of California—then all resulting data should be available throughout ANSS, which would allow an IPS to have access to those data. In other words, the concept of an IPS “should be allowed” in our report. If an IPS can do a better job than other options, then it should be considered as a design goal. On the other hand, if Reno or CISN wants to continue as an independent entity, whose products will be shown by ANSS? How do we deal with that?

Mitch Withers followed up on ideas he put forward in his group e-mail of 1/20/05 in which he suggested that an IPS could assure “a common product set for all events regardless of the capabilities and performance of individual components. . . . We allow for input of products in additions to waveforms so that we take advantage of system components that can produce some or all products as well or better than the IPS.”

There was brief discussion about rules for authority (i.e., “business rules”) to deal with duplicate information. Rick Schult said there needed to be not only business rules for evaluating data in hand but also a framework for an ongoing process [of data refinement].

Glenn observed that it’s relatively straightforward to create rules for comparing earthquake locations, but it’s not easy to codify rules for other earthquake information products. Walter asked Mitch Withers and David Oppenheimer about the status of an *ad hoc* committee that was dealing with business rules for earthquake locations and magnitudes. The committee is no longer active, according to David. Mitch remarked on the difficulty of comparing error estimates, say hypocentral error ellipses, if they are generated by different programs.

Returning to the topic of finding common ground for technical recommendations, Glenn Biasi said that a functional analysis had not yet been done for an IPS—e.g., dealing with important earthquakes versus every earthquake. Getting a functional analysis correct and getting buy-in are the next important steps. There’s no mission for the “every earthquake” model, in Glenn’s view. Glenn restated his position in San Francisco that it was hard to prove that an IPS was cheaper than distributed processing. Until we get the performance requirements right, it’s hard to proceed to design. To get an evolutionary pathway right, he said, we first need to get consensus on performance requirements.

Glenn would like to hear from CISN about the need for an NEIC-like backup for big earthquakes. Everywhere else there seems to be a consensus need for such backup. In Glenn’s view, if 99% of located earthquakes effectively “stay” within an individual network, then an IPS becomes a “big earthquake” issue rather than an “inter-network operability issue.”

David Oppenheimer said he had a different view. He said that efficiency and cost arguments were not compelling. For example, Glenn had mentioned the cost of 24/7 staffing at a central facility as a cost consideration, but that funding now is already in the USGS supplement [for robust operations at NEIC]. The most important gain with an IPS, according to David, is uniformity. The user community finds it hard to deal with data from three or four data centers. Uniformity of software is important in order to get basic products out. Centrally? Regionally? It’s premature to decide. In the end, David said, it doesn’t matter.

Mitch Withers remarked that if uniform software were available, there would still be a wide range of resources and capabilities in individual networks to such software—including networks with few dollars and very little staffing.

David Oppenheimer said that he liked this discussion and that our report should capture the flavor of such discussion. It’s not realistic for us to reach a committee consensus until we have something concrete in hand. We need a structure in ANSS that makes us feel comfortable—a good vision of where we could go. We can’t sell our colleagues a “bill of goods.”

Mitch Withers doesn't want to design a system that, in effect, is "dumbed down" to accommodate different performance capabilities in different networks. Glenn noted that data are "thrown away" in California that would still be important in the eastern U.S.

Walter Arabasz reflected on our wge experiences both in our San Francisco meeting and in its aftermath—including feedback from concerned individuals at AGU. He agreed that it was premature for us to put forward system design recommendations to the community before more open debate about many of the political issues we've wrestled with. So what were the possibilities for common-ground recommendations?

Glenn pointed to a concern he had in our San Francisco meeting about losing capabilities in individual regions. He suggested that a basic ground rule for whatever we recommend should be the need to keep regions fairly capable. Walter asked Glenn to clarify whether he was talking about individual regions or individual networks. A brief discussion followed about seismic geography and that the hard lines of the ANSS regions weren't necessarily a good guide. Overlapping seismicity between California and Nevada is a case in point. Glenn said he liked a recommendation in the original TIC report that stated, "The model calls for establishing one processing center per region, but recognizes that there may be exceptions." Glenn thought this recommendation probably had Nevada in mind.

David Oppenheimer said our wge report should outline concrete steps that should be taken to make progress—along with concrete recommendations on how to do it. ANSS ought to put money into building software, and there should be a formal management structure for oversight to get buy-in from the regions.

Glenn added that the approach should be broader than seeking development of pieces of software. We need to consider commercial software. The Earthworm development model has been hard to follow. We should be open to doing the software development right.

Rick Schult suggested that two key system design requirements should be: (1) transparency (so that software results, for example, can be compared with those of other software programs) and (2) the maintaining of regional capabilities and knowledge.

Glenn said that common software "clips my connection to research uses of some data"—meaning that he's invested lots of effort in in-house infrastructure that would have to be redone.

5. Action Items from Today's Call

- Walter Arabasz will contact Ray Buland with a reminder to distribute copies of the Booz-Allen report (an earlier consulting review of OFR 02-92) to members of "wge"
- Walter Arabasz will complete writing of the Road Map for Partnership and advocacy of the Baldrige National Quality Program (with help from Rick Schult and Glenn Biasi)—see Agenda Item #2 above.
- David Oppenheimer, Glenn Biasi, and Mitch Withers will update the "Evolutionary Architecture" report. [Shortly after our conference call, Rick Schult also volunteered to help.]

Glenn pointed out that adoption of the Baldrige approach logically should precede any attempts at system engineering. Walter replied that, given the time constraints we're dealing with, we basically have to finesse our advocacy of the Baldrige approach. It's important for ANSS's long-term development and management process—and we'll advocate that ANSS adopt it—but we're going to have to summarize our wge common-ground recommendations now. Our recommendations will go forward to the TIC, which in turn will have to put recommendations before the NIC and the rest of the ANSS community before they can become policy guidance for ANSS.

February 11 was set as the deadline for our wge draft writing assignments—in order to allow time for group review and revisions before submitting results to the TIC in advance of their upcoming meeting on March 3–4, 2005 in Seattle. The TIC will be reviewing reports from all working groups at that meeting.