



## GridWise Architecture Council Meeting

November 29 - 30, 2006 in Golden, Colorado

---

### Meeting Minutes

Prepared 30 November, 2006

The meeting was held from 8:00am – 6:00pm and led by Jack McGowan, GWAC Member (Rik Drummond attended by phone). The following individuals were present:

#### **Architecture Council Members**

Ron Ambrosio, IBM T.J. Watson Research Center  
David Cohen, Infotility  
Erich Gunther, EnerNex Corporation  
Stephanie Hamilton, Southern California Edison  
Dave Hardin, Invensys Process Systems  
Lynne Kiesling, Northwestern Univ. & IFREE  
Mike McCoy, Becker Capital Management  
Jack McGowan, Energy Controls, Inc.  
Alison Silverstein, Consultant  
Don Watkins, Bonneville Power Administration

#### **Architecture Council Support**

Steve Widergren, PNNL  
Olga Anna Kuchar, PNNL

#### **Guests**

Larry Barrett, Barrett Consulting  
Commissioner Ray Gifford, Kamlet Shepherd & Reichert, LLP  
Chris Hickman, CellNet  
Andrea Mammouli, University of New Mexico  
Dan Sharplin, Site Controls

#### **Not Present**

Jay Britton, AREVA-T&D Corporation  
Rik Drummond, Drummond Group Inc. (teleconferencing into the meeting)  
Larsh Johnson, eMeter Corporation

## Proprietary Information Notice

The members were reminded of the proprietary information disclosure policy from the Bylaws.

## Review and Approve 20 October 2006 Meeting Minutes

The minutes for the October 20, 2006 web meeting were approved with only one correction in respects to the word marketing (to be removed) on page 5 under Outreach Activities Summary section.

## November 29-30 GWAC Meeting: Golden Colorado

The preference for the next GWAC face-to-face meeting is for the first week in March 2007 in Las Vegas, Nevada. Other important meeting dates are as follows:

- January 19, 2007 – web meeting from 8 – 10 am Pacific Time
- Last week in February/first week in March 2007 – Interoperability Framework Workshop, with location preference in Dallas, Texas. Please note that this needs coordination with the next GWAC meeting.
- April 23 – 26, 2007 in Washington DC for GridWeek (Eric Lightner and Steve Hauser)
- The May 2007 web meeting may be cancelled if the GWAC meets during GridWeek.
- (tentative) June 13 – 14, 2007 – GWAC face-to-face meeting in Chicago, Illinois
- Late July/early August 2007 – Interoperability Symposium, location ideas mentioned were Salt Lake City and Chicago.
- August 2007 – web meeting from 8 – 10 am Pacific Time
- Week of October 15<sup>th</sup> or the 22<sup>nd</sup> 2007 – GWAC face-to-face meeting tentatively in Austin, Texas

## Speakers for the March Meeting

The following suggestions were presented for potential speakers at the next meeting:

- Erich Gunther suggests Dave Schneider from the transformer domain.
- Alison Silverstein suggests Catherine Allen, Executive Director of BITS, a financial/banking interoperability and security organization with the focus of how to get the CEO and other officers to listen. Ms. Allen is in DC but lives in Santa Fe.
- Stan Johnson, NERC's Director of Situation Awareness and Infrastructure Security.
- Erich Gunther suggests Art Rosenfeld and the CEC's group on thermostats with a focus on policy and interoperability as potential speakers.
- David Cohen offered to present and discuss agent technology at the next meeting.
- Rik Drummond mentioned Steve Ray at NIST could be a possible speaker.

*Action Items: Olga Kuchar will co-ordinate with the Council members to invite speakers to our next meeting.*

## Member Renewal

The council member renewal process is currently underway and a progress report was given by Olga Kuchar. Jack McGowan is interested in renewing his commit for another two years. Jay Britton, Larsh Johnson, and Don Watkins have announced that they will be leaving the Council the

end of this year. A nominations committee will be formed that includes the GWAC Administrator, two council members, and two people selected by DOE (Eric Lightner). We have sent the Call for Candidates letter and package to over 300 people. The GWAC website (<http://gridwiseac.org>) has been updated with the call material and information. The current call ends on December 31, 2006. Don Watkins mentioned that due to the holidays, the Council might want to extend the deadline into the second week of January 2007. The Council will continue to research potential candidates and solicit people to submit their names. Steve Widergren noted the difficulty in obtaining candidates with operational experience and responsibility. Council members will suggest contacts for grid system operations background. If this area remains problematic, the Council could consider creating a group of operations experts to support the GWAC.

From the pool of candidates, the nominations committee will nominate a slate to fill the open positions. The slate is then reviewed and confirmed by the confirmation committee (sitting council members and Eric Lightner). A nominations committee will be formed by the next web meeting.

*Action Items: Council members continue to solicit potential candidates. Olga Kuchar will work with Steve Widergren on targeting certain individuals for a call response. Any new candidate information is to be sent to Olga Kuchar and Steve Widergren.*

## Chair Selection

The Council thanked Rik Drummond for his guidance, support, and leadership throughout his tenure.

Three Council members were nominated for the GWAC Chair position: Lynne Kiesling, Mike McCoy, and Jack McGowan. Each member was nominated by at least two Council members.

The following ballot process was agreed upon by the Council members to determine the next Council Chairperson:

- Each Council member receives 10 points to distribute among the Chair candidates. The more points a Council member associates with a candidate, the stronger support that member is providing in choosing that candidate. When a member adds all the points used for the candidates, the total must sum to 10 points. As an example, if a member feels strongly about candidate A, then his/her vote may look like the following: 5 points for candidate A, 3 points for candidate B, and 2 points for candidate C. Members are to send their ballots electronically to Olga Kuchar and Steve Widergren. These ballots are due by 11:59 pm PST on Friday, December 8, 2006.
- Olga Kuchar and Steve Widergren will tally the points for all the candidates by Monday, December 11th. If the candidate with the highest point count has 15 points more than the other two candidates, then that candidate is declared as the Council's new Chairperson (subject to DOE program manager confirmation). If the candidate with the highest point count has 14 points or less than the other two candidates, then the top two highest-count candidates will be chosen for a second round of voting (which would then take place the following week electronically with a one member, one vote process).

This process was moved, seconded, and accepted by the Council members.

*Action Items: Olga Kuchar will create a Chair selection ballot and send the voting instructions electronically to the Council members. Members will reply with their votes by December 8, 2006. Based on the tally, a second voting ballot may be sent by Olga Kuchar to the Council members to further determine the next Chairperson.*

## Outreach and Liaison Reports

- Alison Silverstein gave a presentation to NERC stakeholders and Board of Trustees. The audience included executives from several of the major utilities, ISOs, and RTOs, including

people from operations and transmission system planning. The audience was engaged and interested, and Alison received positive feedback on the relevance of interoperability to this community.

- Alison Silverstein attended the National Association of Regulatory Utility Commissioners meeting and presented to the energy resources and environment committee (approx 30 – 40 people in attendance). NARUC will have a February 2007 meeting in Washington, DC.
- Alison Silverstein visited FERC and gave a presentation on the GWAC and interoperability.
- Lynne Kiesling attended the Modern Grid Initiative in Columbus, Ohio on November 15, 2006. The audience was mainly mid-west regulators and staff. The presentation was similar to Alison's presentations to NERC and NARUC; the point being that demand response, dynamic pricing, and interoperability components are fundamental to the modern grid.
- Ron Ambrosio and Steve Widergren attended the Grid Modernization Collaborative meeting (which had a follow-up meeting the week of November 27<sup>th</sup> in Morgantown, Virginia). The reason for the meeting was to begin coordination on multiple "smart grid" efforts including GridApp, EPRI programs, Modern Grid Initiative, and GridWise.
- Erich Gunther mentioned that EPRI has reorganized, and he e-mailed the new organization charts.
- Erich Gunther gave a presentation on demand response and advance metering to the New Mexico Public Regulatory Commission and small utility companies in New Mexico.
- Ron Ambrosio gave a key note speech at the joint NIST/NSF/NITRID conference entitled Beyond SCADA: Networked Embedded Control for Cyber Physical Systems In Pittsburg, Pennsylvania.
- Ron Ambrosio gave an update on the GridWise Alliance, their new website (<http://www.gridwise.org>), and their coordination for GridWeek. A meeting is to be held the second week of December. One topic is the creation of a smart grid senate caucus.
- Stephanie Hamilton and David Cohen went to a Modern Grid Initiative meeting in San Diego. Please visit <http://themoderngrid.org> for a relevant SAIC presentation.

### Upcoming Meetings

- David Cohen will be presenting at a distributed resources international meeting in Napa, CA on December 6, 2006.
- The AHR Expo is in January, 2006. Jack McGowan, Rik Drummond, and Ron Jarnagin (PNNL) will hold a GridWise interoperability education session.
- DistribuTECH will have a smart grid panel session chaired by Erich Gunther, February 4-6 in San Diego. Steve Widergren will participate.
- Lynne Kiesling will be a panel participant in a meeting on March 8 – 9, 2007 on Energy.
- A building automation conference will be held March 22-23. Jack McGowan is looking into this.
- The GridWise Expo is May 22 – 24, 2006.

*Action Items: Council members will send their presentations and a short summary of activities to Terry Shoemaker and Olga Kuchar for insertion into our Outreach Report.*

### Outreach Administration

Olga Kuchar is gathering input for an update to the GWAC website. She will also look into creating a calendar of events to summarize past and upcoming outreach events. The SharePoint site will

also be reviewed. The presentation slide section will be updated as a resource for members to draw material for their presentations.

## Policy/Regulatory Team Progress

Lynne Kiesling gave an overview of the team's progress. A draft whitepaper is being circulated amongst the team members for revisions. The paper is being written for their targeted audience and is mainly describing interoperability and its need, with a focus on policy and regulatory issues. They are also working on an interoperability checklist and examples for this audience. The team will be teleconferencing to brainstorm more ideas for the checklist. A version of a checklist Erich Gunther created for the CEC is on the GWAC's SharePoint site. Other checklists could be created for different domains. For example, Stephanie Hamilton could propose one on distribution automation. The team will circulate a draft of the whitepaper and checklist for review by all Council members. The EPRI Policy Advisory Group has also been identified as a good source for review comments.

Once the whitepaper has been reviewed and updated, it will be used to engage targeted groups. Don Watkins suggested circulating the paper within his company. Ron Ambrosio suggested circulating the paper within IBM.

The current plan is to have a good draft (including the checklist) circulated to all Council members by mid-January 2007 for feedback and revisions. In early February, a technical writer can polish the document so that there is a good copy for distribution at the NARUC meeting occurring on February 23 – 26, 2006. Alison Silverstein has taken the initiative to develop a plan on distributing this paper with targets (for example, California, New York, New Jersey, Texas, and FERC). A GridWeek education session could also be considered for elevating the visibility of this work.

*Action Items: Draft policy oriented paper and checklist sent out to the Council by mid-January 2007. Once feedback is incorporated, the paper will be sent to a technical writer and the result distributed at the NARUC meeting, the third week of February 2007.*

## GWAC Measures of Progress

Alison Silverstein proposed several metrics for GWAC which were circulated to all Council Members via e-mail and discussed at Golden:

- Completion of key products
  - Interoperability framework paper
  - Interoperability applications tables
  - Regulatory interoperability checklist
- Outreach
  - Interoperability framework thought leader interviews
  - Interoperability framework early adopter technical conference
  - GWAC technical presentations and speeches
  - GWAC policy and regulatory presentations
  - GWAC papers and articles
  - GWAC press releases get industry trade coverage and circulation
- Impact
  - GWAC principles and framework adopted by existing and new electricity technology initiatives

- Adoption of GWAC regulatory interoperability checklist by states and/or cited in company filings and regulatory decisions
- GWAC inspired work on new standards and interoperability approaches
- GWAC enabled interoperability shapes new applications
- NERC adopts reliability standards with embedded GWAC interoperability principles
- Other Ideas
  - Communicate value propositions from greater degrees of interoperability
  - Measure validity of interoperability concepts and strategies in field demos or pilot programs
  - Identify top priority interoperability issues and measure progress on their resolution (through standards, products, etc.)

The Council members appreciated these ideas and offered some suggestions:

- Impact statements are important areas to focus metrics. We should not confuse roadmap statements or action items with measures of influence of the Council's work.
- Consider a metric on press references or other citations.
- Consider a measure on the use or application of GWAC deliverables.
- Consider a measure for industry deployment following GWAC interoperability principles.
- Eric Lightner (DOE) and Steve Hauser (GridWise Alliance) may provide several metrics that DOE or the Alliance would like to see.
- The metric definition should be tested by trying to assign a target number. Preliminary targets for the metrics should be considered once they are identified.
- Different types of metrics should be considered for applying to the progress of the GWAC, other organizations, and interoperability improvements in general.

*Action Items: Alison Silverstein and Steve Widergren will work together on these metrics and test them with potential targeted values for achievement. The Council members will continue to evaluate and determine and key gaps or needs that are not addressed in the measures of progress list.*

## Networked Load Management (Guest Speaker: Dan Sharplin)

Dan Sharplin, President of Site Controls, gave a presentation and demo for Networked Load Management. The presentation is available for download from the GWAC SharePoint site and Council members are encouraged to visit their website at <http://site-controls.com>. His company is focused on measurement, control, and diagnostic services that can be done in a facility today. By having this technology deployed, the energy demand of these buildings can be aggregated as a resource to participate in demand response markets (peak shaving, spinning reserve, etc.). The On Site product is already using pseudo prices as a way to drive distributed decision making and optimize resource allocations.

## DOE Update

Eric Lightner was unable to attend the meeting so Steve Widergren relayed the following remarks:

- Eric Lightner thanks Rik Drummond for his duties as GWAC's Chairman.
- There is a GridWeek co-ordination meeting on December 13, 2006, with GWAC attendance by David Cohen, Mike McCoy, Jack McGowan, and possibly Ron Ambrosio.



- Call for symposium papers                      mid Mar 07
- Symposium agenda                                mid Jun 07
- Interoperability symposium                    end Jul, early Aug 07
- Symposium outcomes                            end Aug 07
- Interoperability action plan                    end Sep 07

## Interoperability Framework Workshop

Steve Widergren presented preliminary planning ideas for the interoperability framework workshop. He envisions approximately 50 attendees (including Council members) for a 2.5-day event. Attendees are expected to be experts in system integration and familiar with the technical aspects of interoperation. The structure of the workshop would be keynote speakers and a large group briefing in the first morning, with breakout sessions on topics related to the framework document in the afternoon. The goal is two-fold: to refine the interoperability framework document (gain acceptance of the concepts within this group of experts), and to organize a forum (symposium). The Council members have received a spreadsheet of potential invitees through e-mail, and more names are being added. There was discussion about the location of the workshop. The Council felt a mid-west hub like Dallas would be good. As preparation for the workshop, the Council could host a webinar with the invitees to introduce the GWAC mission and the interoperability framework document. Another idea was to ask the invitees to write a position paper based on the document.

Overall, there was concern voiced by the council members on the length of the workshop and the time commitment for the invitees (both in preparation and attendance). Steve Widergren explained that if a revised document is to be produced as a result of this workshop, then at least two evenings are necessary. Andreas Tolk and Steve Widergren would facilitate the workshop. Other volunteers for facilitation support for breakout meetings include Ron Ambrosio, Rik Drummond, Erich Gunther, and Dave Hardin. Erich Gunther also offered the names of Grant Gilchrist and Ben Rankin from EnerNex.

*Action Items: Council members to consider other experts to invite to the workshop and provide their contact information. The Council members will have another discussion on the workshop over a teleconference in mid-December.*

## Interoperability Forum (Symposium)

Steve Widergren presented preliminary ideas for the Interoperability Forum, which would be a 2-3 day event in July or August 2007. Possible locations mentioned were Chicago or Salt Lake City. The forum follows the workshop, but is designed for a broader audience.

The Council members had discussions in regards to the call for papers and the types of sessions to hold at the symposium. Having interested attendees submit a position paper that would be refereed and (accepted papers) published would attract one segment of the intended population to the meeting. To attract a broader audience, paper panel sessions could be complemented with other panel sessions. Other events, such as educational sessions, should be considered. Regarding the call for papers, a two-phase approach was suggested: the first phase would be a call for abstracts; the second phase would be a call for full papers. Marketing the event will be very important to its visibility and success. Having hosts and sponsors will also be important.

*Action Items: The Council members will continue to brainstorm over the structure of the forum, including names for keynote speakers and events.*

## GridWeek

Anto Budiardjo joined the meeting by telephone. GridWeek will be held April 23 – 26, 2007 in Washington DC at the Reagan Center. A handout on the GridWeek schedule was distributed to the Council members (a softcopy is available on GWAC's SharePoint site). Anto Budiardjo is the event organizer, with Mike McCoy and Jack McGowan representing the GWAC. The vision for GridWeek is that it will be an annual event, with 300-500 people attending the first year. Rooms are available on Monday and Tuesday for groups to hold private meetings. This would be a great opportunity to schedule time with other interest groups for the GWAC. On Tuesday, there is a DRCC Town Hall meeting all-day, with smaller activities on Monday. Jack McGowan suggested a Tuesday evening dinner with posters of GridWise projects. A Wednesday evening dinner is being planned at a ballroom at the Capitol to attract high-level policy makers. Eric Lightner is inviting the Secretary of Energy to give the plenary speech. The most visible part of the conference for Wednesday and Thursday is still being debated. The plan is to have a keynote speaker for Thursday (following lunch) to provide meeting closure. One Council member suggested Thomas Friedman. Eric Lightner is approaching FERC, NERC, and other organizations to be involved in GridWeek. Erich Gunther has invited working groups of the UCA International Users Group (UCAIug) to meet during GridWeek. This group includes OpenAMI, UtilityAMI, and the 61850 Testing Committee. Other organizations involved include EPRI, the Modern Grid Initiative, GridApp, and the Galvin initiative. There will be a face-to-face meeting on December 13<sup>th</sup> in Washington DC to plan for GridWeek.

Jack McGowan suggested that webex meetings be held during GridWeek. These meetings would be sponsored by a trade association or journal, and would be 1-hour sessions on different topics to give visibility to the cause for those unable to attend the forum. For example, holding a 1-hour meeting on the events at GridWeek and how it relates to stakeholders in State Regulations.

## GridWise Expo

Anto Budiardjo mentioned that the GridWise Expo will be held May 22-24, 2007 with Connectivity Week in Chicago. Jack McGowan, Erich Gunther, and Steve Widergren offered to help coordinate GWAC involvement with this event.

## Regulatory Challenges to Grid Modernization (Guest Speaker: Commissioner Ray Gifford)

Ray Gifford is a former chair of the Colorado PUC, but now works as an attorney in private practice. Ray Gifford talked to the council members on regulatory impediments to the smart grid. He gave a simple overview of the regulatory methods in the USA, and his main message to GWAC is that you will need a broad political consensus at the state level to move GridWise changes forward (such as interoperability principles). You will need government and state legislative support for this is a political issue and not just a regulatory topic. Current circumstances provide a good opportunity for GWAC. The take-home message is that GWAC needs specific champions (governor, legislator) to support interoperability principles and endorse them in their state.

## Interoperability Aspects of Carrier's ComfortChoice System of Demand Response for Colorado Springs and Other Utilities (Guest Speaker: Larry Barrett)

Larry Barrett talked to the Council members on interoperability and demonstrated the Cannon Technologies ComfortChoice programmable thermostat.

## EVP Fun and Games (Guest Speaker: Chris Hickman)

Chris Hickman is the Head of Regulatory Relations at CellNet. His presentation is available for download from the GWAC's SharePoint site. Chris Hickman's presentation was an overview and impacts of the 2005 Energy Policy Act and changes in PURPA. CellNet provides services to its customers for AMI. They have a three-service solution (water, electric, and gas) with complete AMI, SCADA, Distribution Automation and gateway to the Home Area Network. An interesting note, Connecticut has mandated time-of-use rates, and Illinois may be mandating them soon.

## Roadmap

Steve Widergren did an overview of the GWAC roadmap. The roadmap needs to be updated with:

- Revise the workshop and forum activities as the plans solidify.
- The Policy/Regulatory whitepaper and checklist milestones.
- Measures of Progress activities will be updated as next round at potential metrics become available.

*Action Items: Steve Widergren to update the roadmap. Lynne Kiesling to consider the next steps for the policy team. The Council is to consider the types of audiences to target for the interoperability framework message.*

## Summary of New Action Items

#	Item	Owner	Due Date
263.	Send an e-mail to coordinate with Council members on the upcoming meeting dates.	Kuchar	December
264.	For the next GWAC face-to-face meeting, please provide potential speaker contact information to Olga Kuchar Schneider, Allen, and Johnson.	McGowan Gunther Silverstein	15 Dec 06
265.	Provide a voting template on chair selection and instructions to all Council members through e-mail.	Kuchar	4 Dec 06
266.	Provide a summary of Outreach activities and presentations to Olga Kuchar and Terry Shoemaker.	All Members	20 Oct 06 Ongoing
267.	Policy/regulatory whitepaper circulated to all Council members for feedback and revisions.	Kiesling and Silverstein	5 Jan 07
268.	Policy/regulatory whitepaper ready for distribution to NARUC.	Kiesling and Silverstein	15 Feb 07
269.	Consider other applications for testing and explaining the interoperability framework.	All Members	5 Jan 07
270.	Feedback and revisions on the interoperability framework document.	All Members	6 Dec 06
271.	Revise interoperability framework document and schedule a teleconference to discuss it (around December 14, 2006). This should include a discussion of the workshop arrangements.	Widergren	8 Dec 06
272.	Provide additional workshop invitee names and contact information to Olga Kuchar and Steve Widergren.	All Members	22 Dec 06
273.	Talk to GridWise on certification.	Ambrosio	12 Dec 06
274.	Continue to solicit potential member candidates and forward contact information to Steve Widergren and Olga Kuchar.	All Members	December
275.	Update Measures of Progress and consider different metrics for the GWAC, other organizations, and improving interoperability in general.	Widergren and Silverstein	November
276.	Consider ideas on the structure of the interoperability forum, including names for keynote speakers, events, and education topics.	All Members	Ongoing