GridWise Architecture Council Meeting
(Hosted by Cummins, Inc.)
Sacramento, California
March 9-10, 2006

Meeting Minutes
Prepared 14 March 2006

The meeting was led by Rik Drummond, GWAC Chairperson. The following individuals were present:

Architecture Council Members

> Ron Ambrosio, IBM T.J. Watson Research Center (calling in)
>
> Rik Drummond, Drummond Group Inc.
>
> Jay Britton, AREVA-T&D Corporation
>
> David Cohen, Infotility
>
> Erich Gunther, EnerNex Corporation
>
> Stephanie Hamilton, Southern California Edison
>
> Lynne Kiesling, Northwestern Univ. & IFREE
>
> Jack McGowan, Energy Controls, Inc.
>
> Don Watkins, Bonneville Power Administration
>
> Eric Wong, Cummins Inc.

Architecture Council Support

> Steve Widergren, PNNL
>
> Mia Paget, PNNL

Guests

> Eric Lightner, DOE (Thursday)
>
> Tony Mazy, CPUC
>
> Roland Schoettle, Optimal Technologies (Thursday)
>
> Kurt Yeager, Galvin Initiative (Friday)
>
> Kevin Best, Real Energy (Friday)
>
> Jim Detmers, California ISO (Friday)
>
> Arnold De Vos, Langdale Consultants (Friday)
>
> Steve Hauser, SAIC and GridWise Alliance (Thursday, calling in)
>
> Anto Budiardjo, Clasma (Friday, calling in)

Not Present

> Albert Esser, Emerson Network Power
>
> Larsh Johnson, eMeter Corporation
>
> Wade Troxell, Colorado State University

Meeting between GridWise AC and CEC

Eric Wong, Don Watkins, Stephanie Hamilton, and Erich Gunther met with California Energy Commission Chair, Joe Desmond on Wednesday, March 8.

Joe Desmond provided recommendations for GWAC engagement with regulatory communities. Regulators do not in general remember what interoperability is and therefore GWAC will need to develop an effective education program; keep it simple and reinforce the message no matter how many times we meet with the same regulators; go back to basics when meeting/appearing before regulators. He recommended that we meet with the new hire to their Public Information Office who is responsible for developing a communication plan for external parties that touts the PIER Program successes. Also, the California PUC needs to be engaged. Like most utility regulators whose charge is ratemaking, the policy implications of technology advances is not uppermost on the radar screen. Desmond recommended we develop relationships with Cmr Rochelle Chong and Cmr Bohn, in addition to Cmr Grueneich (whom we interviewed).

Desmond listed several areas for the AC to consider in terms of projects that advance interoperability.

1. He emphasized that we should encourage the CAISO to do an R&D project, which the CEC will fund through the PIER Program.

2. Transmission Planning/System Integration

3. Demand Response (this could be a topic for item 1 above)

   By 2007, 5% of system demand is supposed to be met by demand response. He believes the ISO is comfortable with information out and control by the customer (as opposed to ISO dispatch).

   a. How are DR resources certified? (What is threshold for ISO to recognize as a dispatchable resource or can be called on as a block—not necessarily direct control?) This is an R&D area to prospect with the ISO.

   b. Incentive payments: what type of kW payment incentives should exist?

   c. The CEC could use its Title 24 efficiency standards to adopt DR standards.

   d. Broadband over Power Line (BPL) could be used to signals to DR resources.

4. He mentioned that PG&E has an Emerging Markets Group that looks for opportunities to take emerging technologies to market and to get them commercialized. He recommended that we contact them.

Action Items: Eric Wong is to prepare and send a thank you letter for Joe Desmond. Mia Paget is to set up a conference call for brainstorming research project with CAISO for PIER funding; all members are invited to participate. All members are to read the California Energy Master Plan.

Proprietary Information Notice

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

Business & Administration

Review and Approve 5 December 2005 Meeting Minutes

The minutes for the February 6, 2006 meeting were approved with no dissentions.

Member Renewal Update

The Call for Candidates to renew three seats on the Architecture Council is underway. The Call period will be extended if a sufficient pool of candidacies is not received by March 24. Some concern has been expressed by people contacted for the call regarding the persistence of the GridWise program because of the absence of GridWise as a line item budget. Eric Lightner reassured members that GridWise activities, in particular the Architecture Council will still be supported by DOE OE.

Action: Paget is to add an FAQ which explains the budget status for the GWAC. Gunther is to send quotes from the budget which help explain the budget situation. Members are to send the Call to potential candidates. Widergren is to pull the Nominations Committee together before the end of March.

Upcoming Meetings Schedule

- Apr 21, 2006, 8:00-10:00 am Pacific, online meeting
- June 8-9, 2006, Knoxville TN
    - Local host/coordination assistance (member host company: EnerNex)
    - Look into TVA river system op center visit, possibly on Wednesday afternoon, June 7 (contact Steve Pullins, SAIC)
- July 28, 2006, 8:00-10:00 am Pacific, online meeting
- September 6-7, 2006, Albuquerque, NM
    - Visit of New Mexico GridWise Demo Project
- October 20, 2006, 8:00-10:00 am Pacific, web meeting
- December 6-7 or 7-8 2006, tentatively co-located with International Conference on Distributed Resource Integration, Napa Valley,CA (Napa Valley Marriot)

Action: Members are to submit ideas for the June 8-9 meeting topics and guest speakers before 4/8/2006 (EPRI PEAC…). Members who have not done so should update their agendas and indicate potential conflicts to Mia Paget.

Outreach & Liaison Reports

GridWise Alliance

A letter of agreement between the GWAC and the GridWise Alliance was drafted and sent to the GridWise Alliance. Given the limited resources of both groups, it may be constructive to follow-up this letter of agreement with further reflection on how we can work together with regard to GridWise Alliance demo projects, and taking advantage of the common vision and complementary nature of the two groups (funding-advocacy/interoperability-architecture).

EPRI IntelliGrid

Erich Gunther spoke on behalf of the IntelliGrid liaison, Don Von Dollen. The IntelliGrid steering committee, has directed the IntelliGrid project group to conduct scoping studies (with approximately $15-20 k budgeted per topic for six topic areas within the next quarter). The IntelliGrid scoping studies are designed to perform a preliminary investigation into key topics related to electric power infrastructure interoperability. These scoping studies involve around 3-4 man-weeks of effort and will be used to determine if further research is required in the topic area that they address. IntelliGrid is looking for ideas on which topics should be investigated, and encourages the Architecture Council to provide topic suggestions which may fit in well with areas identified in the Interoperability Constitution. The Architecture Council discussed some possibilities, such as in the area of naming and identification. Further suggestions from council members will be gathered by Erich Gunther and submitted to IntelliGrid.

Stephanie Hamilton said that Ellen Petrill (EPRI) has assembled an impressive group of people to advise IntelliGrid on public sector issues. Hamilton recommended that we talk with EPRI to see about GWAC access the IntelliGrid public advisory group.

In considering whether to participate in the GridWise Expo and, if so, in what form, IntelliGrid is still confronted with tensions surrounding their independent identity and distinction with the GWAC. In this context, the GWAC discussed ways to recognize other groups that are working toward the Constitution goals and carrying out activities consistent with the spirit of the GridWise Interoperability Constitution (such as IntelliGrid, OpenAMI, UtilityAMI, IEC TC8, BACnet, ISO/IEC JTC1 SC25 WG1, the Galvin Initiative…). It is too early to endorse standards or define compliance', however this may be a good time (possibly through an award at the GridWise Expo or through a press release) to recognize activities working in the spirit of the Constitution toward interoperability. Any recognition needs to be balanced across the broad stakeholder community.

Actions: Members are to submit scoping study suggestions to Erich Gunther by 17 Mar 06. Gunther is to compile suggestions and forward to IntelliGrid. Gunther is to draft a set of guidelines for recognition of groups that embody the principles of the GridWise Constitution.

Center for Grid Modernization & GridApp

Eric Lightner indicated that a website is now available for GridApp, the Advanced Grid Applications Consortium, which primarily has an engineering focus: http://gridapp.org/eidb/gridapp_home.htm. This website includes an 'Electric Infrastructure Technology Database' which identifies technologies and their integrated platforms for monitoring and managing electricity delivery.

Action: Eric Lightner is to send a synopsis of GridApp projects to the GWAC.

OpenAMI, UtilityAMI

UtilityAMI was recently formed and its governance is being finalized. UtilityAMI is intended to provide a utility customer focus to OpenAMI. Utilities interested in AMI and DR can provided a unified definition of high level requirements suitable for vendors. Tasks already being addressed include a web-based glossary of terms and definitions for AMI. Erich Gunther has shared the Constitutional principles and introduced the GWAC to this group. He believes that everything they are doing is consistent with these principles.

SCE Advance Metering Initiative

The SCE AMI has been a major force in getting UtilityAMI going and is donating a lot of work to this effort. SCE will also donate use cases and scenarios to IntelliGrid for the public domain. They are moving into the stage of architecture and system design to prepare RFQs.

AHR Expo 2007

The AHR Expo is interested in a no-cost endorsement from GridWise (or the GridWise AC) in exchange for an educational venue (free sessions). These sessions give people pointers on technologies and technology choices. This is an opportunity to reach out to building automation industry and other building technology industries; AHR attendance is 60,000 and attendance in educational sessions is generally 50-200 people. The venue should be in Dallas, mid-late January 2007.

Action: Jack McGowan is to resend the 2 page pre-agreement document to GWAC administrators for consideration of supporting a GridWise interoperability-oriented panel next year.

CECA/NARUC National Electricity Delivery Forum 2006

Rik Drummond and Stephanie Hamilton attended the National Electricity Delivery Forum 2006—Drummond gave an overview of the GWAC during a panel session. Phil Lutz, a Public utility commission analyst (Pierre, SD) indicated strong interest to do a GridWise Architecture Demonstration. The GWAC needs to try to continue to do this type of presentation for visibility in these regulatory communities.

Action: Lynne Kiesling is to contact Dick Stelleto (?) to follow-up Rick Morgan's suggestion for building ties with MADRI and pursuing the possibility of having a member present to the MADRI steering committee.

Tridium Niagara Summit

Tridium was recently purchased by Honeywell. 2000-3000 integrators are expected to attend the Niagara Summit (May 1-2 in Tampa Florida). They have offered a free booth for the GWAC and invited Jack McGowan to speak in two panel sessions. GWAC members agreed to have two foam core posters made to enable table-top displays describing the GWAC and the Constitution for events such as this.

Action: Mia Paget is to ensure that folders are prepared and posters are designed and provided to Jack McGowan for this event.

CMU Advanced Building Consortium

Jack McGowan indicated that an event will be held by the Carnegie Mellon Advanced Building Systems Integration Consortium March 21-22 in Pittsburgh. Carnegie Mellon University also has engineering and public policy specialists with focuses on energy systems and complex systems. This would be a key place in academia to build contacts.

Outreach Administration

Following through on an action item from the Constitutional Convention, 'GridWise Communications Guidelines' have been established to encourage and facilitate communication surrounding GridWise (technologies, projects, demos, studies, education, cross-industry groups…), and to help active stakeholders make the most of their contributions to GridWise efforts.

The document also provides links to GridWise logo files. All members will receive a copy and the Guidelines are available on-line (http://gridwise.pnl.gov/news-events/guidelines.pdf).

With a growing number of prospective engagements for GWAC members to speak about or represent the GWAC, budget has been set aside to support 5-10 events this year. As opportunities arise and members feel the need for support for an event, we will need to decide which outreach opportunities will be supported, to be sure we are reaching each of the various stakeholder communities. Whenever possible, members that can go to an event without support (by being in the area, or already attending the event for other purposes) should be solicited to sign up to represent the GWAC. Each member should also think about ways to do outreach in his/her home state and region. The National Governors association would like us to identify state needs and how to solve them.

Action Item: GWAC administrators are to establish an Outreach calendar and archive, so that a monthly report can be provided showing support status and balance (what has been done in previous 6 months and looking ahead 6 months).

Liaison Relationship

Stephanie Hamilton suggested that the GWAC clarify and substantiate relationships between the GWAC and other groups. In some cases it may be desirable to have a written statement indicating the nature of the relationship.

Action Item: Stephanie Hamilton will draft a Liaison Relationship Agreement Template.She will consider an agreement with the Public Advisory Group of IntelliGrid as an example.

Grid Information and Optimization

Roland Shoettle of Optimal Technologies spoke about new, smart grid technologies. In particular, he presented the AEMPFAST tools which provide the ability to quickly determine system wide impacts of -specific generators and loads, enabling an entire realm of prioritization and optimization for better asset management. This ties directly to the key GridWise concept of revealing values within the electricity path and enabling more intelligent and distributed management concepts for each distributed resource in the complex grid system.

Naming and Identification Task Force

The Naming and Identification Task Force (Drummond, Gunther, Britton, Ambrosio, Widergren, Paget, Marty Stoddard—PNNL) presented the progress they have made to date, including literature search and background reading, draft FAQ on the topic, drafts of problem statements and scope, and initial identification of key issues. The scope encompasses unambiguous identification of things for interoperation across organizational boundaries, but does not include metadata (information about data). The primary goal is to frame the debate about the issues and strategies for addressing them, then engage the interest and participation of the broader community. In doing so, this will also set an example for addressing other interoperability issues consistent with the Constitution principles.

The immediate challenge before this group is to articulate enough of the problem to explain and engage GWAC members and then draft a whitepaper. Other steps suggested by discussion with the GWAC members include:
- Working with key case studies (e.g. BPA and WECC)
- Exploring examples from other complex systems (e.g., telecommunications)

- Consider suggesting an IntelliGrid scoping study project to examine some of these areas (other complex system examples, registry options…)

Action: The Identification and Naming Task Force is to continue its regular conference calls and progress toward an initial whitepaper.

Context Setting Framework for Interoperability Topics

Steve Widergren initiated discussion on the creation of a framework that would set a context for the interoperability strategies that the GWAC intends to put in place. As an example, he presented an approach Rik Drummond discovered by the Australian National E-Health Transition Authority. Members felt that this example provides great clarity. A task force is now formed to move forward on the context setting and framework for interoperability topics.

Action: Dave Cohen is to document his ideas for review. Ron Ambrosio is to share recent work on interoperability from ISO/IEC JTC1 SC25 WG1. Steve Widergren is to initiate an Interoperability Context Setting Task Force call (including Drummond, Ambrosio, Cohen—other members please indicate your interest).

Constitutional Convention Breakout Task Forces Progress and Actions

A key follow-up action from the Constitutional Convention was to continue progress with the break-out groups to further understand and act upon the results of the Convention. Lynne Kiesling has already initiated this process with the Policy breakout group. With the Convention Proceedings now finalized and available, each of the other breakout groups should use this occasion to reinvigorate their groups, with one objective of getting leaders in the groups to carry the flags forward. Erich Gunther will take provisional lead on Technology group. Support from PNNL can be used to off-load administrative aspects, to get e-mails out and to set up conference calls.

The Governance Breakout Group will consider the option of forming a steering/advisory board.

Action: Mia Paget is to send the list of breakout delegates and their contact info to breakout group leaders. Don Watkins (supported by Rik Drummond), Jack McGowan (supported by Larsh Johnson), and Erich Gunther (supported by Ron Ambrosio) are to prepare and send e-mails calling for their groups to reconvene.

Policy Breakout Action: GWAC Communication, Value Proposition

Lynne Kiesling reconvened the Policy breakout group with a short conference call discussion aimed at initiating a high-level breakout game plan that Lynne will Quarterback. One of the key first actions this group is tackling is to create a clear, concise value proposition for GridWise and for the GridWise Architecture.

Architecture Council members brainstormed key points to this value proposition, including:
- GridWise Interoperability is about information sharing across the electric power system resulting in what benefits
- How do we help regulators justify our policies?
- How does interoperability add or enable options?
- Articulating the 'why' differently to different audiences
- Helping regulators organize the complexity that is inherent in the industry
- Fears

Action: Lynne Kiesling is to compile the results of this brainstorming session as key elements to build the value proposition.

Constitutional Convention Follow-up

Documents describing the Constitutional Convention have been finalized and are available in the Publications section of the GridWise AC website (http://www.gridwiseac.org/architecture/activities/publications.stm)

- • "Final Summary Report on the Constitution Interview Process and Feedback"
- • "GridWise Constitutional Convention Proceedings"

Action: Mia Paget and Steve Widergren are to draft a follow-up memo for delegates indicating which action items from the Convention have been addressed.

Galvin Initiative Overview

Guest speaker, Kurt Yeager, described the Galvin Initiative to the AC members, and urged the members to read the Galvin reports, particularly the summary and Task 5 (http://www.galvinelectricity.org/reports.asp). Members saw synergies between the Galvin Initiative objectives and the mission of the GWAC. A number of paths for collaboration and traction were discussed.

Erich Gunther and/or Ron Ambrosio are to participate in the Galvin Software Integration Working Group.

Action: Rik Drummond is to present the GWAC to leaders in the Galvin Initiative.

GridWise Expo

The GridWise Expo will be co-located with BuilConn and M2M in Palm Springs, May 16-18, 2006 (see www.gridwiseexpo.com). This event is being organized by Anto Budiardjo of Clasma. Jack McGowan and Steve Hauser will be leading GridWise panel sessions on both May 17 and 18. Members discussed which panel sessions would be appropriate for GWAC participation and brainstormed ideas regarding panel topics and speakers.

Action: McGowan, Hauser, and Budiardjo are to continue refining the agenda for this event; McGowan is to keep AC members abreast as this is clarified. McGowan is to invite the Galvin Initiative to present at the GridWise Expo. Members are to inform McGowan if they are available for this venue or have contacts to suggest.

Interconnecting Gencos and Demand Response Aggregators

Jim Detmers, the California ISO (CAISO) Vice President of Operations, enlightened members with a view of the key problems facing CAISO. Detmers sees a key novel concept for addressing those challenges through demand response aggregation in the ISO imbalance energy market which is open for all bids (minimum 1MW).

Action: (from CEC—Joe Desmond section above) Mia Paget is to set up a conference call for brainstorming research project with CAISO for PIER funding, all members are invited to participate. Brainstorming results will be refined and brought to Detmers for discussion by Eric Wong, Lynne Kiesling and Stephanie Hamilton.

The Semantic Web, Ontologies, and Integration Approaches

Arnold de Vos of Langdale Consultants (Australia) presented "How Semantic Web Ideas Apply to GridWise". He provided an overview of Semantic Web concepts and underscored his two key premises: 1) that semantic web is a credible architecture for a large scale distributed system and 2) that the component technologies are useful in their own right.

Roadmap

The GWAC roadmap has remained quite steady and progress seems to be in line with the path it describes.

Action: *Steve Widergren is to update the Roadmap reflecting joint research efforts that support GWAC objectives.*

Action Items

#	Item	Owner	Due Date
154	Prepare and send a thank you letter for Joe Desmond.	Wong	done
155	Set up a conference call for brainstorming research project with CAISO for PIER funding, all members are invited to participate.	Paget	3-Mar-06
156	Refine and bring brainstorming results to Detmers for discussion.	Wong, Kiesling, Hamilton	7-Apr-06
157	Read the California Energy Master Plan.	All	21-Apr-06
158	Add a FAQ which explains the budget status for the GWAC.	Paget	24-Mar-06
159	Send quotes from the budget which help explain the budget situation.	Gunther	24-Mar-06
160	Send the Call to potential candidates.	All	17-Mar-06
161	Pull the Nominations Committee together before the end of March.	Widergren	31-Mar-06
162	Submit ideas for the June 8-9 meeting topics and guest speakers before 4/8/2006 (EPRI PEAC…). Members who have not done so should update their agendas and indicate potential conflicts to Mia Paget.	All	8-Apr-06
163	Submit IntelliGrid scoping study suggestions to Erich Gunther.	All	17 Mar 06
164	Compile scoping study suggestions and forward to IntelliGrid.	Gunther	24-Mar-06
165	Draft a set of guidelines for recognition of groups that embody the principles of the GridWise Constitution.	Gunther	7-Apr-06
166	Send a synopsis of GridApp projects to the GWAC.	Lightner	7-Apr-06
167	Resend the 2 page pre-agreement document to GWAC administrators for consideration of supporting a GridWise interoperability-oriented panel next year.	McGowan	30-Mar-06
168	Contact Dick Stelleto (?) to follow-up Rick Morgan's suggestion for building ties with MADRI and pursuing the possibility of having a member present to the MADRI steering committee.	Kiesling	7-Apr-06
169	Ensure that folders are prepared and posters are designed and provided to Jack McGowan for Tridium Niagara Summit in May.	Paget	14-Apr-06
170	Establish an Outreach calendar and archive, so that a monthly report can be provided showing support status and balance (what has been done in previous six months and looking ahead six months).	GWAC Administrators	21-Apr-06
171	Draft a Liaison Relationship Agreement Template (consider an agreement with the Public Advisory Group of IntelliGrid as an example).	Hamilton	7-Apr-06
172	The Identification and Naming Task Force to draft an initial whitepaper that articulates the issues and "frames the debate".	Drummond, Ambrosio, Britton, Gunther,	21-Apr-06

		Widergren, Paget, Stoddard	
173	Provide the interoperability framework task force with his ideas for review.	Cohen	7-Apr-06
174	Initiate an Interoperability Context Setting Task Force call (including Drummond, Ambrosio, Cohen, Watkins—other members to indicate their interest).	Widergren	7-Apr-06
175	Share recent work on interoperability from ISO/IEC JTC1 SC25 WG1.	Ambrosio	done
176	Send the list of breakout delegates and their contact info to breakout group leaders.	Paget	done
177	Prepare and send e-mails calling for their Breakout groups to reconvene.	Watkins, McGowan, Gunther	30-Mar-06
178	Compile the results of the policy breakout group brainstorming session as key elements to build the value proposition.	Kiesling	7-Apr-06
179	Draft a follow-up memo for delegates indicating which action items from the Convention have been addressed.	Paget, Widergren	7-Apr-06
180	Present the GWAC to leaders in the Galvin Initiative. (The Galvin Initiative is to invite members to their working sessions.)	Drummond	14-Apr-06
181	Continue refining the agenda for the GridWise Expo; keep AC members abreast as this is clarified. Invite the Galvin Initiative to present at the GridWise Expo.	McGowan, (w/ Hauser, Budiardjo)	21-Apr-06
182	Inform McGowan if available for GridWise Expo or have contacts to suggest.	All	30-Mar-06
183	Update the Roadmap reflecting joint research efforts that support GWAC objectives.	Widergren	21-Apr-06