



**GridWise Architecture Council Gathering
Philadelphia, Pennsylvania
December 5, 2005**

Meeting Minutes

Prepared 12 Dec, 2005

The meeting was held December 5 in Philadelphia, Pennsylvania and led by Rik Drummond, Chairperson. The following individuals were present:

GridWise Architecture Council (GWAC) Members

Ron Ambrosio, IBM T.J. Watson Research Center
David Cohen, Infotility
Rik Drummond, Drummond Group Inc.
Erich Gunther, EnerNex Corporation
Stephanie Hamilton, Southern California Edison
Larsh Johnson, eMeter Corporation
Lynne Kiesling, Northwestern Univ. & IFREE
Jack McGowan, Energy Control Inc.
Don Watkins, Bonneville Power Administration
Eric Wong, Cummins Inc.
Albert Esser, Emerson Network Power
Jay Britton, AREVA-T&D Corporation

Architecture Council Support

Mia Paget Bosquet, PNNL
Steve Widergren, PNNL

Guests

Don Von Dollen, EPRI
Steve Hauser, SAIC & GridWise Alliance
Paul Wang, Concurrent Technologies Corp. (CTC)
Anto Budiardjo, Clasma Events
Rich Scheer, Energetics
Jan Brinch, Energetics
Joseph Badin, Energetics
Bonnie Ram, Energetics

Absent

Wade Troxell, Colorado State University

Meeting Openers

Proprietary Information Notice

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

Welcome

In preparation for the day's meeting, members reviewed the general Constitutional Convention status:

- 110-120 attendees were expected, over half were interviewed or briefed
 - ~ 30 Sponsor/Endorser organizations, target reached
- Key Speakers/Agenda points
 - Nora Mead Brownell (FERC) as Tuesday morning keynote
 - Bill Parks representing DOE
 - Visionary Panel (Welch, Allmendinger, Petze, Luth)
 - Signing Ceremony Representatives (Desmond, Hauser, Crane, Saint)
 - Jesse Berst and Dean Kamen as banquet speakers
 - Lynn Sutcliffe (EnergySolve) as Wednesday morning speaker
 - Roger Gale (GF Energy) to provide closing thought

A detailed report summarizing the Constitutional Convention and results from breakout sessions will be available following the event.

Outreach

GridApp Workshop: Paul Wang provided an overview of the GridApp Workshop held in Arizona November 8-10 and on upcoming plans for GridApp. GridApp is a consortium between DOE and Utilities. The November workshop was sponsored by the DOE Office of Electricity and NETL, and organized by SAIC and CTC, and included the university participation of PSERC. The workshop was attended by 60 academics and participants; CTC will publish a report based on input from participants. GridApp is looking particularly at near-term technologies (near-term: any technologies that have application potential in three years; mid-term, three to ten years; long-term more than ten years). GridApp charter members each bring a technology to the consortium (SCE, Exelon, AEP, and First Energy and TVA/Southern Co/ConEd in negotiation); sponsor members contribute annual membership fees (Detroit Edison, Idaho Power & PPL Electric Utilities). Examples of near-term technologies being brought to the GridApp table include: Exelon's substation in a box; AEP's wireless mesh architecture technologies; and SCE's phasor measurement system. The purpose is to encourage technology sharing of applications between utilities. Points for the GWAC to look at include PSERC Information Technology and TCIP cyber-security development, to keep aware and consider how these new technologies and applications fit into the overall IT framework—supporting mutual awareness and ensuring they build on common principles (GWAC concepts).

RTO/ISO Information Technology Committee (ITC): Jay Britton and Erich Gunther presented an overview of GridWise, the AC and the Constitution to the ITC on November 30, 2005. Their presentation of the GridWise Architecture Council was very well received. It was agreed that BPA's Don Watkins would continue to liaise between GridWise and the ITC. The main area where they see that the AC can help is through the regulatory/political arena: to help raise awareness about the difficulties, time, impact of issues surrounding interoperability to help them get funding and appropriate regulatory support/frameworks. Two key working groups of the ITC are the Security Group and the Architecture Group with their 'standards' for information exchange. They see open common, modular standards as way to increase competition (reduce vendor lock-in), increase effectiveness and reduce cost.

GridWise Alliance: Ron Ambrosio provided an update on the GridWise Alliance, including news about the Western Governor's Association meeting; the Clean and Diversified Energy Advisory Committee goal to develop 30MW of clean energy by 2015, ensure adequate transmission capacity and improve efficiency by 20% (2020). A draft report for review is expected by 2006, and they have asked the GridWise Alliance for feedback on this report. The GridWise AC should maybe also provide feedback. *Action: Ron Ambrosio is to pass along information on this draft CDEAC report when it becomes available.*

IntelliGrid: The Architecture Council welcomed Don Von Dollen, the program manager for EPRI's IntelliGrid effort and new liaison between IntelliGrid and the AC. IntelliGrid currently involves the participation of a number of equipment manufacturers, 13 utilities, the CEC, and some European utilities. Their recent focus has been on demonstration projects (IntelliGrid Architecture, Fast Simulation...) and working on getting partner utilities to start to implement IntelliGrid Architecture technologies and methodologies. 2006 will focus on larger demonstration projects (e.g., SCE Advanced Metering Initiative; Polish Power Grid demonstrating distributed computing architecture, using a distributed computing approach for fault restoration...) to raise awareness and to validate technical feasibility. They will also be continuing development of the IntelliGrid Architecture and have already identified some priorities: AMI, DR, maybe real-time pricing. AMI and DR can be seen as applications of the Consumer Portal concept that IntelliGrid has been working on for a few years. For example, in the TXU metering project to change out their meters over five years, IntelliGrid Architecture allowed them to reevaluate their procurement requirements to follow a disciplined process to find out what they needed. IntelliGrid specialists are positioned as coaches, to help utilities learn systematic architecture approaches.

Center for Grid Modernization: Paul Wang gave an overview of the Center for Grid Modernization. This will be a virtual center that organizes several projects and initiatives within it. For example, GridApp will be part of the Center for Grid Modernization. Grid Modernization projects and field demonstrations will be conducted at universities, utilities and vendors. This is supported by congressionally directed funding through DOE, with Eric Lightner as Program Manager with budget through March 2008 (\$2M for 2006 projects). Currently, Paul Wang is acting director for GridApp and Center for Grid Modernization. One utility member will be nominated and selected to chair the GridApp Board of Directors and another utility member to chair the GridApp Steering Committee. CTC will serve as co-chair of each to provide organizational and management support. This initiative will support continued development of PSERC projects (\$200-250k per project, including cost sharing). Examples of areas where the Architecture Council can work with these initiatives may include: considering a universal visualization interface to integrate with EMS systems; considering how we integrate IEDs so that they can all be coordinated at substation level with decision making, etc.

Stephanie Hamilton was nominated and approved as liaison to the Center for Grid Modernization and GridApp efforts.

Galvin Initiative: Don Von Dollen described the recently launched Galvin Initiative (created by Bob Galvin). Mr. Galvin provided \$1M of funding for Kurt Yeager to launch the initiative to investigate what “perfect electrical service” to customers would look like (perfect from 6 sigma sense). They have held workshops defining metrics (how do you define what perfection is for power systems, how do you measure it, what technologies are needed, how do you migrate). One conclusion is that a distributed power system is going to create this ‘perfect’ service. Decoupling elements of the power system was a key concept at one workshop. Public domain reports will be released in 2006, with initial design concepts. The Galvin Initiative will launch its second phase with a focus on public sector: working with regulators and legislators. Lynne Kiesling and Clark Gellings will be in contact concerning possible GWAC interaction. Kurt Yeager indicated his interest to address the GWAC at a future meeting. *Actions: Mia Bosquet and Steve Widergren are to arrange for Kurt Yeager (or an alternate Galvin Initiative contact) to speak at an upcoming AC meeting. Ron Ambrosio is to check with Steve Hauser on how the GridWise Alliance will be liaising with Galvin Initiative. Don Von Dollen is to pass on notices about the Galvin reports when they come out for information to the AC.*

FERC Technical Conference on Demand Response: Ron Ambrosio has been in communication with the coordinator of the FERC Technical Conference on Demand Response regarding eventual participation of the Architecture Council (presentation or panel participation). This conference is currently scheduled for Wednesday, January 25, 2006.

Action: Ron Ambrosio is to plan to take part in the January conference and communicate material to the AC members. From the Convention: Dan Delury (DRAM) to coordinate with Steve Widergren on GWAC participation in a demand response town meeting prior to the FERC meeting.

OEB AMI metering specifications: Larsh Johnson provided background on the Ontario metering specification requirements covering expected legislation to formalize government role and defining local distribution company roles (draft requirements for metering specification are currently under request for comments). These specifications address certain data types and certain metering frequencies, with the intent of being able to provide TOU/real-time metering, but do not formalize high level interoperability concepts. Hopefully further guidance will be available in early 2006.

CPUC/CEC AMI: Erich Gunther provided an update on CPUC/CEC progress on AMI interoperability issues. Independent vendors and utilities are also progressing in California. For example, the SCE project will hopefully be a poster child from a system integration/requirements approach. Last week’s workshop focused on system integration approaches (broad framework/high level) for Programmable Controllable Thermostats (PCT). In March 2006 there will be rulings specified for the PCT, which represents an incredibly short period of time to go from concept to code and hopefully it will not be in a stranded situation. Ron Hoffman has been meeting with all of the major thermostat manufacturers leading up to this. One big issue is the Wide Area Network communications that will be used to broadcast prices.

Southern Cal Edison Advanced Metering Initiative (SCE AMI): Steve Widergren is a member of the technical advisor board for the SCE AMI project, acting in this role as a liaison for the AC. A number of applications are assembled under the title of metering (measurement, gateway to home, demand response functionality including price broadcasting, user interface, billing, ...). The AMI with its communications network is viewed as an extension of SCE’s enterprise integration world. The GridWise notion envisions synergies among various applications that might share communication backbones (such

as entertainment, facility security, emergency alert, as well as demand response and metering functions). This raises questions such as will a single network meet reliability requirements of all these applications or will there be many communications overlaid on regions? How will heterogeneity and continual evolution play out with these multiple networks?

ASHRAE: The ASHRAE Smart Buildings Technical Committee 7.5 Building/Utility Interface work, BACnet evolutions, and similar IEC/ISO standards work are all buildings communities that may provide opportunities to raise awareness regarding GridWise architecture work and dependencies in the buildings areas.

Action: Members are to look into opportunities to raise awareness of buildings communities regarding GridWise architecture movements.

IEC TC 8: A new, rechartered committee on system aspects of electrical energy supply is moving forward in the IEC. Richard Schomberg, the chair for this committee, will facilitate cooperation between all other Technical Committees at IEC within this scope.

Actions: Mia Bosquet is to send the whitepaper about IEC TC 8 to members. Ron Ambrosio is to connect Steve Hauser with Richard Schomberg.

New Mexico GridWise Demo Project: Jack McGowan will provide members further details on this potential demonstration project, which is an opportunity to implement one of our illustrative scenarios involving a university campus.

Bylaw Revisions

Members unanimously approved the proposed 'Emeritus Amendment' to the bylaws. This amendment recognizes the knowledge and experience of past Council members, providing them with an open invitation to attend meetings and participate in Council activities as non-voting members.

Members discussed options for the Member Renewal Amendment, with the objectives of providing sufficient continuity in the Council, and simultaneously providing mechanisms to enable flexible turnover. There appeared to be consensus that the amendment should be a guideline (as opposed to a requirement) to aim for 25% turnover in members each year, retaining nominal two-year, renewable terms. To manage continuity and stagger turnover of the initial Council members (eleven with one year to go, one with two years, and one retiring), the aim will be to extend the commitments of at least six members by one year.

Longer-term considerations for the Architecture Council organization may include consideration of a 'pre-candidate' role and consideration of different levels within the Architecture Council (advisory, working groups, etc.).

Actions: Steve Widergren is to issue revised bylaws including the approved Emeritus Amendment. Steve is to propose modifications to the Member Renewal Amendment reflecting the target of renewing 25% of members per year and hold confidential discussions with each member to establish which members wish to extend their commitments and which wish to have the opportunity for review in one year.

Interoperability Discussion

The Interoperability Path Forward Whitepaper was finalized and has been posted on the GridWise Constitutional Convention and GridWise AC websites. In the context of the Convention, this whitepaper conveys that the AC is moving beyond Constitution work and provides a reference for AC interoperability directions. Because it is very hard to write about interoperability to a general audience, future work will need to look at targeting papers to particular audiences on this topic (policies, standards, regulations, industry project plans, services), and to look at levels of interoperability in many different planes. To frame this in more ways that people understand and focus discussion on relevant factors in easing integration, work should consider different constituency groups.

The value of interoperability needs to be communicated—the main motivator being to save money and answering the question, “why do we think that simplifying IT interoperability is key to improving the grid?” This needs to consider the different interested communities. One suggestion is to look at information exchange between organizations in similar sectors as well as dissimilar sectors. Members can prepare one page on why they want to be interoperable, what is the value, the unmet need, the opportunity.... Another approach is to build on illustrative scenarios to show interoperability needs, tailoring high-level interoperability messages for different audiences. For example, focus on price signals to elaborate on questions such as, “How does a building present a price signal to the grid?”

An important aspect of the next phase of the interoperability discussion is to drive to a point where specific issues can be identified and strategic improvements proposed.

Action: Steve Widergren is to add ‘opportunity’ (not just barriers) to the last sentence of the whitepaper.

Selection of 2006 Chairman

A call for nominations for 2006 GridWise Architecture Council Chair was issued and Rik Drummond was nominated. The Architecture Council members commended and thanked Rik Drummond for the excellent job he has done leading the group in 2005. He was unanimously selected as 2006 Chair. Eric Lightner, representing the DOE, confirmed the renewed Chair appointment for Rik Drummond.

KnowledgeBase

Mia Bosquet presented a working prototype of an on-line GridWise standards landscaping KnowledgeBase. The objectives of this tool were to facilitate updating and managing the standards landscape picture which was initially assembled in 2004, to provide search tools for this information, and to not duplicate work of other organizations. This ‘Google’-like search tool provides searchable links to database content as well as to external websites. The website for the KnowledgeBase is: <http://gwac.pnl.gov/cocoon/morf/gridwise>. Although it is a fully functioning prototype, the full breadth and details of current information on GridWise standards has not yet been implemented in the database.

Action: Council members are to explore the KnowledgeBase and provide suggestions as to the usefulness of this tool and indications as to how to most effectively improve it, to best leverage other existing resources and tie it to future interoperability efforts of the AC.

Future Meetings

The upcoming **GridWise Architecture Council Meeting Schedule** is as follows:

- February 2, 2006, 8:00-10:00 am Pacific, online meeting
- March 9-10, 2006, San Francisco, CA
- April 21, 2006, 8:00-10:00 am Pacific, online meeting
- June 8-9, 2006, Knoxville, TN (Steve Pullins to look into TVA river system op center visit)
- July 28, 2006, 8:00-10:00 am Pacific, online meeting
- September 6-7, 2006, Santa Fe, NM (Jack McGowan to possibly organize visit of a New Mexico GridWise Demo Project)

Constitution Convention

The Architecture Council Members and Convention facilitators (Energetics and Clasma representatives) coordinated to finalize preparations for the GridWise Constitutional Convention, honing key messages, reviewing the flow of the Convention and its breakout groups, and checking that all concerns had been addressed.

The GridWise Constitutional Convention proceedings, held on December 6 and 7 in Philadelphia following this AC meeting, will be available separately from these minutes (see the Convention website, www.gridwise.com, or the AC website, www.gridwiseac.org).

Action Items

#	Item	Owner	Due Date
127	Forward information on Western Governor's Association draft CDEAC report when it becomes available.	Ambrosio	20-Jan-06
128	Arrange for Kurt Yeager (or an alternate Galvin Initiative contact) to speak at an upcoming AC meeting.	Bosquet and Widergren	24-Feb-06
129	Check with Steve Hauser on how the GridWise Alliance will be liaising with Galvin Initiative.	Ambrosio	20-Jan-06
130	Pass on notices about the Galvin reports when they come out for information to the AC.	Von Dollen	Ongoing
131	Participate in the January FERC conference and communicate material to the AC members.	Ambrosio	25-Jan-06
132	Coordinate with DRAM on GWAC participation in a demand response town meeting prior to the FERC meeting.	Widergren	24-Jan-06
133	Look into opportunities to raise awareness of buildings communities regarding GridWise architecture movements.	Members	Ongoing
134	Send the whitepaper about IEC TC 8 to members.	Bosquet	15-Dec-05
135	Connect Steve Hauser with Richard Schomberg.	Ambrosio	20-Jan-06
136	Issue revised bylaws including the approved Emeritus Amendment.	Widergren	12-Jan-06
137	Propose modifications to the Member Renewal Amendment reflecting the target of renewing 25% of members per year and hold confidential discussions with each member to establish which members wish to extend their commitments and which wish to have the opportunity for review in one year.	Widergren	20-Jan-06
138	Add 'opportunity' (not just barriers) to the last sentence of the whitepaper.	Widergren	12-Jan-06
139	Explore the KnowledgeBase and provide suggestions as to the usefulness of this tool and indications as to how to most effectively improve it, to best leverage other existing resources and tie it to future interoperability efforts of the AC.	Members	20-Jan-06