



GridWise Architecture Council Gathering Greenbelt, Maryland September 12-14, 2005

Meeting Minutes

Prepared 22 Sept, 2005

The meeting was held from September 12-14 in Greenbelt Maryland 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 Controls, Inc.
Don Watkins, Bonneville Power Administration
Eric Wong, Cummins Inc.

Architecture Council Support

Mia Bosquet, PNNL
Steve Widergren, PNNL

Guests

Eric Lightner, DOE OEDER
Rob Pratt, PNNL
Steve Hauser, SAIC & GridWise Alliance
Chris Greenwell, Tridium (Sept 12)
Jan Brinch, Energetics (Sept 12)
Paul Wang, Concurrent Technologies Corp.
Steve Pullins, SAIC
Anto Budiardjo, Clasma Events (Sept 12)
Geoff James, CSIRO, Commonwealth Scientific and Industrial Research Organization, Australia
Leon Lowery, Senate Energy Committee (Sept 12)
Gary Finco, Idaho National Laboratory (Sept 13)

Dan Delurey, DRAM—Demand Response and Advanced Metering Coalition (Sept 13)

Kurt Bilas, Council—House Commerce and Energy Committee (Sept 12, evening)

Absent

Albert Esser, Emerson Network Power

Jay Britton, AREVA-T&D Corporation

Wade Troxell, Colorado State University

Meeting Openers

Proprietary Information Notice

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

Welcome

The members reviewed the GWAC Mission and the council members reaffirmed their support.

The newest AC member, Lynne Kiesling, and several guests were welcomed.

Outreach

Updates were provided by liaisons to key related efforts and upcoming events and other outreach opportunities were discussed.

GridWise Alliance

Steve Hauser provided an update on the GridWise Alliance, describing both the potential opportunities to play a positive role in the aftermath of Katrina and the current budget challenges. Overall, Hauser sees an increase in visibility of GridWise efforts, with a ground swell of interest and support and many inquiries about interoperability.

The GridWise Alliance has its annual meeting on Sept 26-27; hosted by PJM. This will be an open session hosted by Tom Welch (former Maine regulator new to PJM) and including a tour of PJM operating center. Ron Ambrosio will be speaking to the attendees on interoperability issues and GWAC progress. The meeting will be proposing the 'path forward' and presenting what everyone is doing, contributions, alignment, and messages surrounding GridWise. All GWAC members are invited and encouraged to attend.

A "Modern Grid v1.0" workshop will be held on Sept 28 at PJM; hosted by National Energy Technology Lab (NETL) work and an SAIC team. This will be an embryo of 'functional specifications' of a modern grid. NETL intends to coordinate demonstrations concerning grid modernization across the nation. This effort has some overlaps with IntelliGrid and the GWAC, and attention will be given to alignment and key messages needed among all of these groups, and make those messages heard. Those that would like to attend workshop should talk to Steve Hauser.

IntelliGrid

Erich Gunther provided an update on IntelliGrid efforts. Don von Dollen has succeeded Marek Samotyj in leading the IntelliGrid efforts and has expressed the desire to be the formal liaison

between the AC and EPRI, but couldn't make this meeting. The AC members supported having Don von Dollen become the EPRI liaison.

Rik Drummond and Steve Widergren met with the IntelliGrid steering committee members in August, giving them an understanding of GW and the roles of the AC, Alliance and DOE program. Reactions to this presentation were favorable. The steering committee now understands the three-legs of GridWise: the DOE GridWise program, the GridWise Alliance, and the GridWise Architecture Council. The chair, Bruce Germano, stated that he now understands the distinction between the GridWise AC and IntelliGrid Architecture.

This year will see many demonstration projects on the table for IntelliGrid. The Salt River Project, Public Service Electric and Gas, NIPA, SCE, and others are involved in applying the IntelliGrid design process, in the deployment of automation projects. A state of IntelliGrid report will be coming out soon.

Rik Drummond noted that there is strength in independence and collaboration. The GWAC needs a broad base of sponsors for the convention. The link with IntelliGrid needs to be balanced with our links to other stakeholder areas to keep us from looking too utility focused.

OpenAMI

Erich Gunther reported that OpenAMI is moving forward. The CEC Demand Response and Title 24 efforts are currently centered on programmable controllable thermostats (PCTs), with arguably not enough attention paid to infrastructure. A workshop will be held in November to reinforce earlier workshops on demand responsive infrastructure, but centered around the PCT and system integration.

SCE AIM Project

Stephanie Hamilton described the new Southern Cal. Edison AIM multi-year project (7-12 years), looking at more robust/greater value meter design, and also the overall architecture needed to support advanced metering. They would like exchange in both directions between their project, GWAC, and IntelliGrid. A Technical Advisory Board meeting will be held on 15 Sep 05. The GWAC role is unclear, but we can be a supporter for this type of project—Erich Gunther is a contractor to this project and Steve Widergren will attend the Technical Advisory Board meeting.

Events

- AMRA Conference 18-21 Sept, including OpenAMI reception
- Galvin Electricity Initiative: a new organization in the picture to track <http://www.galvinelectricity.org/>.
- MADRI (Mid-Atlantic Demand Response Initiative): www.energetics.com/madri, The GWAC needs to make more overtures to this group and involve them in the Constitutional Convention.
- IEEE PES T&D Conference : postponed until Spring 2006 due to hurricane Katrina
- BuilConn Europe: Bringing the topic to broader audience; Rik Drummond will speak.

- Cannon Technologies person invited us to present about GWAC and GridWise at the Fall PLMA. Infotility plans to be there. Coordination of the message is desired. (See http://www.peaklma.com/files/public/web_brochure.htm for more information.)
- ConnectedHome: This is more on the large consumer/entertainment systems side (co-located with Fiber to the Home conference), but needs to be tracked
- National Electricity Delivery Forum: will be co-located at the winter NARUC meeting in Feb. Peggy Welsh of CECA has invited the AC to participate.

Articles

The AC members are encouraged to move forward with publications. Lynne Kiesling and Rik Drummond submitted an op-ed piece to the Wall Street Journal (which was superseded by an excellent piece from Vernon Smith). Lynne Kiesling was invited to write about the Texas model for the Wall Street Journal.

Action:

Those that would like to attend the GridWise Alliance meeting or subsequent "Modern Grid v1.0" workshop should contact Steve Hauser. Mia Bosquet is to include this as a possible agenda topic at a future meeting.

Erich Gunther is to send the minutes and presentations from the IntelliGrid Steering Committee to Don Watkins. They will also be posted on the SharePoint site so members can to read their words about how the GWAC presentation was perceived.

All members are encouraged to submit short articles about the Constitutional Convention to various periodicals and other publications.

Constitution Discussion

Mia Bosquet presented the Constitution status. Version 1.1 feedback has been distributed to all who participated in interviews. Five to ten interviews have been conducted using version 2.0, initial results show that the language is more clear, but there remain a few points of divergent opinion. Key remaining interviews need to be completed in coming weeks well before the Convention date. A whitepaper covering the Constitution process and results will be needed for the GridWise Alliance meeting at the end of September.

Don Watkins and Rik Drummond led a discussion on the objectives of the Constitutional Convention. The primary objectives of the Convention are as follows:

1. Increase visibility of the Architecture Council
2. Engage a broad base of support with stakeholders (partners)
3. Establish/recognize governance organization
4. Credibility for AC's interoperability task
5. Leave with a portfolio of next steps

Jan: people that come will want to know that there is something in there for them and that the group wants something to be accomplished at the meeting –a valuable take away and something they are giving. Being prodded to create something or respond to something.

It will be important that each sector can integrate the concepts, take the constitution and go back and try to use them. People will want to have a valuable take away and something they are giving. Part of outcome is that there is a general consensus, even if that consensus is vague and that legitimacy is reinforced.

The members and Anto Budiardjo and Jan Brinch discussed possible formats for 'ratifying' the constitution, and who might be allowed to vote. The basic concept retained was that those that have been interviewed would be voting delegates, but further work is needed to organize this aspect of the Convention.

Action:

Members to complete key remaining interviews using Constitution Interview form version 2.0.

Mia Bosquet is to send the current draft Constitution whitepaper to Ron Ambrosio. Ron Ambrosio will massage the material into a workable whitepaper.

Convention planners are to flesh out ideas for ratification timing and process.

AC members Don Watkins, Dave Cohen, Rik Drummond, and Stephanie Hamilton have agreed to assist in formulating objectives.

Building Automation Systems Interoperability Framework

Chris Greenwell presented key issues surrounding connectivity and interoperability in the buildings/embedded systems arena. He explained that XML clearly provides the easiest current path to Enterprise connectivity, and that facility management is being subsumed by Internet technologies. At any one time numerous protocols exist and systems need to take multiple protocols into account. Customer education is needed for Demand Response.

Reflections on the Energy Bill

Leon Lowery, Senate Energy Committee Staff, provided an overview of the new Energy Bill, describing the historical context of the current bill.

DOE Office of Electric Delivery and Energy Reliability

Eric Lightner sees a relatively flat budget ahead in the next few years, but reassured the AC that the group should be supported over the next couple of years. He sees the constitution convention as a key test to get our message to congress and industry. New GridWise Program projects will be starting; RD&D project awards have been made in integrating DER into substation operation – Topic 1 (one to Infotility with ConEd and one to Southern Co), Topipc 3 – locating faults (EPRI Solutions, Southern Cal Ed), and Topic 4 – microgrid technology (GE and CERTS group University of Wisconsin). No awards were made on Topic 2 – demonstration of smart appliances.

Constitutional Convention

Two companies are assisting with this event, Clasma Events and Energetics, represented by Anto Budiardjo and Jan Brinch, respectively. Energetics is in energy sector, with experience in meeting facilitation and will handle facilitation of break-out sessions, topics for break-outs, and resulting meeting products. Clasma has contacts in Buildings/M2M area, and will be covering the communications, marketing, e-mails. Anto Budiardjo and Jan Brinch provided an overview of where the Constitutional Convention planning stands today.

A decision was made that the event name is “GridWise Constitutional Convention”. The event will be held on Dec 6 and 7, 2005 at the Radisson Plaza Warwick Hotel in Philadelphia. The GWAC members will meet for a pre-meeting on Dec 5.

Ratification

The Convention agenda was discussed, including options for ‘ratifying’ the constitution and proposed topics for breakout sessions. Different options for ‘ratifying’ the constitution range from balloting to signing, conducting the ‘vote’ near the outset or near the end of the day and a half or not at all, and allowing all present to participate, or restricting the vote to ‘delegates’ (those having completed a constitution interview before the event). The general leaning is toward allowing delegates (interviewees) to cast a ballot during the first morning, culminating in ratification at lunch on day 1, then moving forward with issues and related topics in the breakout sessions. The exact message surrounding what will be signed (or voted upon) must be crafted carefully: is it a vote of confidence in the AC or in the Constitution process, a vote for the concept of the constitution, or more like a guest book for the event.

Breakouts

The breakout session topics will primarily focus on contentious issues, and then possibly move on to roadmapping on the second day. A session will be needed to present AC notions on interoperability. A task force was assembled to assist in defining breakout sessions. These sessions need to be designed with the final “take away” in mind.

Awareness & Endorsements

Anto Budiardjo will prepare a press release and initial announcement material, along with material for potential sponsors. An initial whitepaper on the constitution will be prepared for the GridWise Alliance meeting in late September. An interoperability whitepaper is also needed.

Members will need to help create a buzz around this event. A brainstormed list of sectors, publications and organizations to contact was established.

Sponsor Concept

There is sensitivity to the sponsor concept with a desire to not have this event look like a commercial, conference-type event. Sponsors and endorsements will be needed, but communication material and sponsor packages need to reflect the non-commercial nature of this event.

Website and Outreach Process

The mood of the event is to be upbeat and professional, while staying faithful to the Constitution theme (“Ben Franklin with a blue-tooth headset”).

An initial website will be designed to create interest, inviting people to request to be ‘delegates’ at this event. The website will provide background information on GridWise and the Convention, supporting organizations, and sponsors.

Delegates and Other Participants

Convention participants that have already completed a Constitution interview will be considered ‘delegates’. Possibilities will be given for those not yet interviewed to participate in an interview before the Convention (either group sessions on-line, or directly with AC members).

Speakers

The caliber of speakers at this event will be an important draw. Big names and a balance of representation among the sectors related to GridWise are needed, along with one or two dynamic, motivational speakers. The group brainstormed a list of potential speakers.

Tour

Jack McGowan mentioned that the Thomas Jefferson Hospital is nearby the hotel and it is a good example of an intelligent facility. Jack suggested that this may be a good tour, perhaps for the afternoon of the 7th.

Actions:

Ron Ambrosio, Erich Gunther, Lynne Kiesling, Jack McGowan art to assist Anto Budiardjo and Jan Brinch in crafting breakout sessions and agenda options.

Jan Brinch is to change the room block name to GridWise.

Eric Lightner is to follow up with the DOE Regional Office in Philadelphia and help publicize the event on the GridWise DOE program website.

Mia Bosquet is to send additional material to Anto Budiardjo including quotes from interview comments for campaigns, and material for AC member bios, as well as looking into the option of using www.gridwise.com or www.gridwise.net.

Members are to review the brainstormed list of speakers and add names or indicate where they may have strong contacts with potential speakers.

Members are to review the list of sectors, organizations, and publications to contact regarding the Convention and provide further input and follow-up on targets where possible.

Jack McGowan to investigate the tour possibilities for the Thomas Jefferson Hospital and coordinate with Mia Bosquet, Jan Brinch, and Anto Budiardjo on agenda options.

Reflections on the Energy Bill

Kurt Bilas, Council—House Commerce and Energy Committee, provided his reflections on the new Energy Bill.

Business and Administration

The AC members approved the June 6, 2005 Meeting Minutes.

The upcoming **Meeting Schedule** is as follows:

- Oct 7, 2005, 8:00-10:00 am Pacific, online meeting (Convention Planning)
- Oct 28, 2005, 8:00-10:00 am Pacific, online meeting
- Nov 14, 2005, 8:00-10:00 am Pacific, online meeting (Convention Planning)
- Nov 28, 2005, 8:00-10:00 am Pacific, online pre-Convention meeting
- Dec 5-7, 2005, AC member pre-Convention meeting, Constitutional Convention, Philadelphia
- Feb 2, 2006, 8:00-10:00 am Pacific, online meeting
- March 9-10, 2006, San Francisco, CA
- Apr 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)

Member Renewal

Renewal of members was discussed. The bylaws will be clarified to enable a process which aims at renewing not more than 1/3 of the members per year, while keeping neutrality and openness in renewal process. . Albert Esser has announced his intent to resign when a new member is found. The AC administrator is to check with each member regarding his/her situation and whether they think they will need to resign in the coming year in preparation for a call for candidates to renew up to 1/3 of members in early 2006.

Rlk Drummond has proposed establishing an Emeritus Council to preserve and draw upon the wealth of knowledge, thus allowing retired members to continue to be non-voting contributors to group. (Other names for this group are under consideration—emeritus board, circle, pane...)

Member Support Discussion

Each member supports his/her own travel and related expenses for these meeting trips, and some members feel the hardship of these expenses more than others. A task force has been assembled to assist Steve Widergren in proposing policy for member support, including Lynne Kiesling, Don Watkins, Jack McGowan (non-present members may opt to join as well).

Communication

Folders and fliers are being prepared to provide convenient supports for AC members. An initial set of folders are being printed for immediate needs using an initial graphic design. Members suggest that subsequent versions consider other graphics (night satellite shot, an e-commerce, or photovoltaic array) graphic, and including the text “GridWise Architecture Council Member” above or below business card slot.

Ideas for improving the flier content include adding a value proposition and inserting side-bar quotes from people that are well known.

Action:

Steve Widergren is to contact members and help them to evaluate themselves regarding length of commitment and propose appropriate clarifications to the bylaws.

Stephanie Hamilton, Erich Gunther, Lynne Kiesling, and Jack McGowan have volunteered to provide input and feedback to Mia Bosquet on communication supports.

Interoperability Discussion

Members discussed the definition of interoperability and high level identification of application areas that need interoperability. The definition of interoperability can include the characteristics of interoperability, who is involved in interoperability, how it is achieved, what is the purpose of it, and what interoperability is not. The Tolk levels¹ of interoperability conceptualize the areas of interoperability that the GWAC feels they should be involved with: the top most layers (4 & 5), and possibly down to semantic interoperability.

No.	Technical Interoperability	Conceptual	organizational
5	–	No tech but conceptual interoperability	aligned procedures
4	sharing of information	dynamic/pragmatic interoperability	knowledge awareness
3	automated sharing of data	semantic interop	information interoperability
2	structured data exchange	syntactic interoperability	data/object model interoperability
1	unstructured data exchange	tech interop	protocol interoperability

¹ Need to reference Tolk paper here.

0	no data exchange	no interop	physical interoperability
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Suggestions for moving forward with interoperability include establishing a high level picture or a big outline on where things are missing, tracking website; to facilitate others building use cases (e.g., a set of reusable use case library), UML modeling. This group could be the librarian for the use case library—priming the pumps. IntelliGrid is working on use cases and building a basis for reusable use cases in the areas they have covered.

Interoperability discussions continued on Wednesday, Sept. 14.

Idaho National Laboratory: National SCADA Testbed Program

Gary Finco introduced the group to the SCADA/Critical Infrastructure Security facility at the Idaho National Laboratory, including the SCADA testbed, Communications testbed, Cyber-Security Testbed, Power Grid Testbed and Critical Infrastructure Security Programs. One of the current focuses of their work is on SCADA/EMS vendors and tightening up security. INL also works with Sandia and PNNL on projects in this area.

Demand Response and the new EPACKT

Dan Delurey of the Demand Response and Advanced Metering Coalition summarized the Demand Response aspects of the new Energy Bill. .

Action: Larsh Johnson is to liaise with DRAM and interview Dan Delurey with a Constitution Interview, Dan Delurey is invited to participate in the Convention.

OpenAMI & DR in CA

Erich Gunther and Larsh Johnson provided an update on the progress in the OpenAMI effort. Utilities will be able to develop their own solutions, but also watching to think about the larger picture of Demand Response and advanced metering. The AC may have a role to play here: 1) consistency with constitution principles, 2) outreach, enabling connections, education, and 3) interoperability direction, but only after the AC makes progress on this topic.

Current Regulatory Compact

Eric Wong raises the question: Given the current utility regulatory compact, which grants a monopoly franchise in exchange for regulated rates, can increased penetration of cost-effective EE/DR and DG/CHP be achieved?

Passive methods to attaining progress will be to understand regulatory environment well, and where that could change incrementally to effect this (or more fundamental changes). There are cases where the regulatory compact might work better to meet a region's situation (Texas, Maryland), with better value delivered via a utility structure rather than a competitive market environment. We should seek more understanding via people like Commissioner Nora Brownell.

More active methods may be watching for opportunities to lead, as part of education and resource campaign. For example, proactively saying, technologies exist, here are resources, here's what we're doing, here's what you can be doing (as a regulator, as a utility, as an ESCO, as a ...).

We need to talk about various situations and options and communicate; not going through front door of market incumbents, but using back doors and reducing hurdles. The AC needs to make strategies and use cases for both environments (regulated and deregulated), creating an image of being for

technical standards and interoperability that work in regulated and open markets, and looking for opportunities with high leverage points.

Roadmap

Steve Widergren reviewed the GWAC roadmap, showing updates based upon the progress made thus far and the new work being initiated in framing the debate on interoperability.

Interoperability Working Group Session

Erich Gunther presented an descriptive set of slides that explain issues associated with system integration and how principles and an organizing structure can help components of systems interoperate.

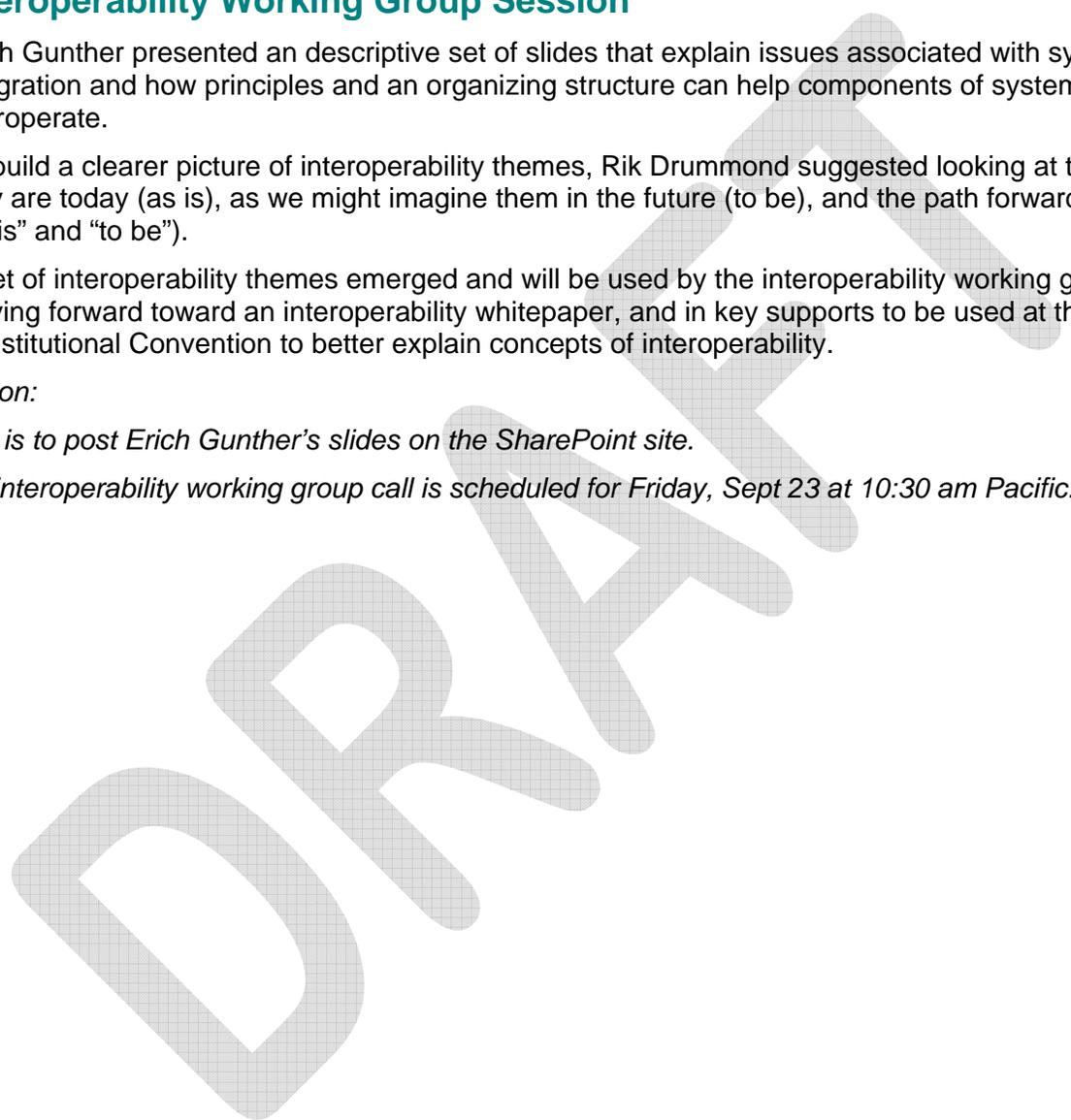
To build a clearer picture of interoperability themes, Rik Drummond suggested looking at them as they are today (as is), as we might imagine them in the future (to be), and the path forward (between “as is” and “to be”).

A set of interoperability themes emerged and will be used by the interoperability working group in moving forward toward an interoperability whitepaper, and in key supports to be used at the Constitutional Convention to better explain concepts of interoperability.

Action:

Mia is to post Erich Gunther’s slides on the SharePoint site.

An interoperability working group call is scheduled for Friday, Sept 23 at 10:30 am Pacific.



Action Items

Longer-term action items do not appear below. They are included in the action plans of each working group and will be reflected in the GWAC road map.

#	Item	Owner	Due Date
92	Contact Steve Hauser if you would like to attend the GridWise Alliance meeting or subsequent "Modern Grid v1.0" workshop.	Members	23 Sep
93	Send the minutes and presentations from the IntelliGrid Steering Committee to Don Watkins and to Mia Bosquet for SharePoint postin.	Erich Gunther	30 Sep
94	Submit short articles about the Constitutional Convention to various periodicals and other publications.	Members	15 Oct
95	Complete key remaining interviews using Constitution Interview form version 2.0.	Members	15 Oct
96	Massage the current draft Constitution whitepaper the material into a workable whitepaper.	Ron Ambrosio Mia Bosquet	26 Sep
97	Flesh out ideas for ratification timing and process in Convention.	Jan Brinch Anto Budiardjo Steve Widergren Mia Bosquet	7 Oct
98	Assist in formulating Convention objectives.	Don Watkins Dave Cohen Rik Drummond Stephanie Hamilton	7 Oct
99	Assist Anto Budiardjo and Jan Brinch in crafting breakout sessions and agenda options.	Ron Ambrosio Erich Gunther Lynne Kiesling Jack McGowan	15 Oct
100	Change the room block name to GridWise.	Jan Brinch	30 Sep
101	Follow up with the DOE Regional Office in Philadelphia and help publicize the event on the GridWise DOE program website.	Eric Lightner	7 Oct
102	Send additional material to Anto Budiardjo including quotes from interview comments for campaigns, and material for AC member bios, as well as looking into the option of using www.gridwise.com or	Mia Bosquet	26 Sep

	www.gridwise.net		
103	<i>Review the brainstormed list of speakers and add names or indicate where they may have strong contacts with potential speakers.</i>	Members	30 Sep
104	<i>Review the list of sectors, organizations, and publications to contact regarding the Convention and provide further input and follow-up on targets where possible.</i>	Members	30 Sep
105	<i>Investigate the tour possibilities for the Thomas Jefferson Hospital and coordinate with Mia Bosquet, Jan Brinch, and Anto Budiardjo on agenda options.</i>	Jack McGowan	7 Oct
106	<i>Contact members and help them to evaluate themselves regarding length of commitment and propose appropriate clarifications to the bylaws.</i>	Steve Widergren	30 Oct
107	<i>Provide input and feedback to Mia Bosquet on communication supports.</i>	Stephanie Hamilton Erich Gunthe Lynne Kiesling Jack McGowan	30 Sep
108	<i>Liaise with DRAM and interview Dan Delurey with a Constitution Interview.</i>	Larsh Johnson	30 Sep
109	<i>Post Erich Gunther's slides on the SharePoint site.</i>	Mia Bosquet	23 Sep