GridWise Architecture Council Gathering
Yorktown Heights, New York
May 3-4, 2005

Meeting Minutes

Prepared 9 May, 2005

The meeting was held from May 3-4 at the IBM TJ Watson Research Center and led by Rik Drummond, Chairperson. The following individuals were present:

GridWise Architecture Council (GWAC) Members

Ron Ambrosio, IBM T.J. Watson Research Center

Jay Britton, AREVA-T&D Corporation

David Cohen, Infotility

Rik Drummond, Drummond Group Inc.

Albert Esser, Emerson Network Power

Erich Gunther, EnerNex Corporation

Stephanie Hamilton, Southern California Edison

Wade Troxell, Colorado State University (May 3, via conference call)

Don Watkins, Bonneville Power Administration

Eric Wong, Cummins Inc.

Architecture Council Support

Mia Bosquet, PNNL

Steve Widergren, PNNL

Guests

Eric Lightner, DOE OETD (May 3)

Rob Pratt, PNNL

Steve Hauser, SAIC & GridWise Alliance

John Johnson, ConEd (May 3)

Walt Pfuntner, NY ISO

Kumar Bhaskaran, IBM (May 3)

Francis Parr, IBM (May 4)

Peggy Welsh, CECA (May 3)

Excused

Larsh Johnson, eMeter Corporation

Jack McGowan, Energy Controls, Inc.

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 Vision statements and Goals.

Action: Mia Bosquet will emphasize Goal Statements bullets 1 and 2 to reflect the overarching goals surrounding interoperability.

Outreach

General

Updates were provided on outreach activities as follows:

> Groups: GridWise Alliance (Ambrosio), IntelliGrid (Gunther), IRC ITC (Watkins), OpenAMI, CEC DRI (Gunther)

> Events: BuilConn (Troxell), DOE R & D Peer Review (Drummond), Semantic Technologies Conference (Widergren)

> New: IEEE T&D Conference (Widergren), ICWS & ISCC (Bosquet), Academia (Troxell)

It was suggested that we group presentations and outreach topics at the outset of the meetings.

Stephanie Hamilton indicated that the CEC is very interested in the GWAC work, and we should try to invite them to GWAC meetings when possible.

Members discussed the need for additional outreach on the regulatory and policy sides, and integrating the regulatory environment explicitly in the GWAC 'star' of sectors.

GridWise Alliance

Steve Hauser provided an update on the GridWise Alliance. They have provided input into the Energy Bill from the House, but it is hard to say what, if any, changes will be made. There is good demand response language in the bill, but it does not mention GridWise by name. He suggested looking at the 2003 Nanotechnology Bill for ideas on the type of material that appears in a technology bill. Further outreach may be sought with NRECA, FERC, APPA, EPRI, EEI, and NARUC, and possibly at the state level as well (National Council of State Legislatures & state energy commissions). Dave Cohen is scheduling constitution interviews with FERC and hopes to have outreach follow-up to those interviews.

Action: Steve Hauser is to send example of Nanotech Bill.

IntelliGrid

Erich Gunther provided an update on IntelliGrid describing this as the 'year of the demonstration' for IntelliGrid demonstrations to utilities. After the OETD R & D Peer Review, the CEC indicated that they felt the GWAC message is very close to the IntelliGrid message. Suggestions for reducing confusion include coming up with a public statement. A meeting between key representatives of IntelliGrid and the GWAC could be a good start. At some point, holding a joint meeting of the

GWAC and IntelliGrid might be good. Steve Widergren indicated that many organizations are related to the GWAC and overlapping in different sectors and different areas of scope—it will be important to establish constructive relationships and clear positioning with each of these organizations and not focus too much on one single related group. Examples of such groups include the IEC TC 57 Architecture Group; the ISO/RTO Council's ITC, CABA groups, and organizations within the IT world such as the IETF.

Action: Erich Gunther, Steve Widergren and Rik Drummond are to organize a meeting with key representatives from IntelliGrid (covering policy and strategy aspects in addition to technical), and to interview key IntelliGrid members on the GWAC Constitution.

ISO/RTO Council's Information Technology Committee

Don Watkins indicated that another person from BPA is now going to these meetings instead of himself. They do not currently have a real vision for interoperability and the GWAC may help to foster their thinking about interoperability. The companies represented in the ITC group cover 60-70% of the US end-load populace. It would be useful to interview the CIOs represented in this group with the GWAC constitution interview. Jay Britton noted that the ITC does not fundamentally represent business drivers, so the GWAC should consider reaching CEOs of these companies, too.

OpenAMI and CEC Demand Response Initiative

Erich Gunther reported that the OpenAMI effort is going slower than the CEC would like, but is also reaching out to other states that are following the effort with interest. Legislation regarding the California advanced metering initiative is expected in the June / July time frame.

BuilConn

Rik Drummond reported that many contacts were made for constitution interviews.

IEEE T & D Conference

Steve Widergren, Stephanie Hamilton & Erich Gunther are collaborating on a paper for the IEEE T & D panel session and presentation, other interested members are invited to contribute. Eric Wong will be participating as a separate, but related panelist.

Academia and Related Research Programs

There are a number of academic and related research programs that may fall within the umbrella of GWAC outreach; a roadmap for GWAC outreach to academia and research communities is suggested.

Action: Wade Troxell is to put his initial thoughts regarding this roadmap on paper.

Constitution Discussion

Mia Bosquet provided an update on the progress to date on the Constitution interviews and initial responses which are generally quite positive. Refinements to the interview form are needed to succinctly characterize the background and experience of interviewees.

Rik Drummond commended members that have already begun the interview process and gathered engagements for a minimum of five constitution interviews from each GWAC member, to be

completed by the end of June at the latest. Peggy Welsh suggested a number of organizations and people that she would recommend interviewing, and suggested considering a presence at the National Transmission Forum (under planning conjointly by CECA, DOE, and NARUC).

Members discussed options for holding a Constitution Convention: the feasibility and desirability of holding this in the fall or early winter; the desirability or not of doing it jointly with another event; location (e.g., Philadelphia) and possible formats for such a 'convention'. An advantage of holding this event sooner rather than later is to maintain the energy and momentum developed through interviewing. The event may or may not intend to 'ratify' the constitution. Don Watkins suggested a possible format for a Constitution Convention (~1 ½ days):

1. Keynote speaker on the need and why
2. Key speaker from each of the 6 groups we've identified (identified from interviews and then prepare/discuss with each ahead of time, from, for example FERC, NARUC, CEC, CPUC, EEI, APPA, NRECA, NEMA, NAESB, NERC, and/or EPRI)
3. Show what we've found and analyzed from Constitution
4. Discuss overall plan and how we intend to make this work.
5. Do some workshop time with key critical decision questions for discussion and consensus.
6. Keynote capsulation.
7. Next steps

Having a high-up DOE speaker was suggested as well as a public announcement of the council, the constitution work, and the event.

A tentative date for the Constitution Convention would be in the first week of November. Further discussion and thought is needed, and a go/no go decision would need to be made by the end of June. Key stakeholders would need to be recruited to sign up and actively participate. Interviewees who attend could be "hosted" by the council members that interviewed them to treated as special participants in the activity. Independent of the decision regarding a Constitution Convention, a Constitution White Paper should be written and published in September.

Actions:

Interview Process: Mia Bosquet will compile all proposed interviews and track as a project, including weekly updates on SharePoint. All members should confirm names of people (or organizations) they plan to interview. Steve Widergren is to assist Jay Britton with interviews. Erich Gunther is to schedule an interview of Marek Samotyj to be performed by Rik Drummond. Rik Drummond is to obtain list of interviewees from Larsh Johnson and Wade Troxell.

Constitution Convention: Rik, Mia, and Steve, are to propose a convention structure by the end of May. Members are to reflect on formats for this event. Mia Bosquet is to include this on the agenda for the June meeting. A go / no go decision is targeted for the end of June.

Architecture of Business

Kumar Bhaskaran presented IBM research directions on the Architecture of Business. An approach to business process integration that uses automation tools to help bring abstract business processes to software implementations was discussed. The flexibility and interoperability issues presented for this enterprise integration approach has applicability to the architecture concerns of the Council.

DOE Office of Electric Delivery and Energy Reliability

Eric Lightner presented an update on the DOE Office of Electric Delivery and Energy Reliability (previously OETD then OEEA). The new director of this DOE office is Kevin Kovelar. The office will include technology and policy areas. Bill Parks coordinates the technology area, where the GridWise program resides. There are positive indicators that an Energy Bill will pass this year. The proposed language does not mention GridWise by name, but highlights GridWise related areas, such as demand response. The DOE OETD R & D Peer Review in Atlanta had good, generally positive feedback on the program. Eric also mentioned that three GridWise request for proposal solicitations will be announced shortly. He will see that the Council is informed of the announcement.

Eric Lightner recommends that the GWAC include the regional MADRI effort (Mid-Atlantic Distributed Resources Initiative) in their constitution interview efforts.

CECA

Peggy Welsh provided an overview of the Consumer Energy Council of America along with their recent and current forums. CECA advances policies that benefit the consumer across all energy sectors; however, they have been primarily focused on electric power the past several years. CECA sees a need for real education on electric power issues at local and municipal levels. CECA is open to opportunities to work with the Council on engaging and informing consumers on issues. They encourage organizations to join their current Forum.

Action: Mia Bosquet and Steve Widergren are to consider possibilities to engage CECA to review Architecture Council material and to participate in meetings (such as a GWAC panel at the National Transmission Forum sponsored by CECA). Mia Bosquet to post CECA documents on the group SharePoint website.

Administration

New Member Confirmation

The Nominations Committee presented the name of their nominee, Dr. Lynne Kiesling, and their reasons for selecting her to the Confirmation Committee (the standing GWAC members and Eric Lightner of the DOE). Eric Wong and Steve Widergren described the nominations process and explained that the nominee had been selected from a pool of five highly qualified candidates.

Dr. Kiesling was approved to fill the vacant seat on the GWAC by unanimous vote of the 10 GWAC members present and Eric Lightner (Larsh Johnson and Jack McGowan were not present). Steve Widergren thanked all members of the Nominations Committee for their diligence and professionalism in the task of selecting a nominee.

Approval of Mar 11 Meeting Minutes

The minutes for the March 11, 2005 teleconference meeting were approved with no dissentions.

Schedule of Future Meetings

The tentative schedule for upcoming meetings was extended as follows, and meeting topics were discussed:

- o June 10, 2005, 8am-10am (PST); Web Meeting
- o September 14 & 15, 2005, Washington D.C., (with the assistance of SAIC)
- o October 28, 2005, 8am-10am (PST); Web Meeting
- o Potential: November 2-3, tentative Constitution Forum, Philadelphia, PA
- o December 5 & 6, 2005, San Francisco, CA (may be adjusted depending on Constitution Forum)
- o February 2, 2006, 8am-10am (PST); Web Meeting
- o March 9-10, 2006; New Orleans

Suggestions regarding upcoming meetings include:

- o Cover IT security in next meeting (IETF Rik Drummond contact, INEL – SCADA security – Steve Widergren contact, NIST – Mia Bosquet contact, PCSRF – Erich Gunther contact)
- o Steve Hauser mentioned that Washington DC may afford an opportunity to have congressional and/or other policy people attend.
- o Group presentation and outreach topics at the outset of the meeting.

Actions: Albert Esser and Stephanie Hamilton are to confirm their availability for the week of September 12-16. Mia Bosquet is to transmit meeting dates to Lynne Kiesling. Meeting dates may need to be revised depending on discussions surrounding a Constitution Convention.

Con Edison 3G (3rd Generation) System

John Johnson of Con Ed gave a short presentation about their R&D work for the next generation in their T&D system. They have reviewed the state of the art internationally and are concentrating on probabilistic reliability and predictive maintenance areas. They are planning to make changes to their system to implement some of the ideas and designs from this work.

Elevator Story

Ron Ambrosio presented the latest version of the Elevator Story Slides. Steve Widergren presented the Scenario storyboard slide which was added for the Peer Review presentation. Mia Bosquet presented a slide assembling the various key messages in the '30 second' GWAC descriptions. As more scenario storyboards are added to the set (aimed at different audiences), links within the presentation may be useful to jump to the scenarios of interest.

There may be a need to better describe the critical problem ahead. Simplifying one of the initial slides into a 4 bullet slide, or taking cues from the new GridWise Alliance brochure may be helpful, to identify issues and ask the question, "…if we don't act now…transmission lines…huge coal plants…NIMBY fights…" The GWAC Elevator Story material may benefit from input from outside

expertise in crafting messages to the general public (non-industry, non-technical, communications input).

Actions: Ron Ambrosio is to incorporate edits and suggestions, integrating the latest storyboard and 30 second description elements. Albert Esser and Don Watkins are to suggest changes on the elevator story presentation (identify issues for a '4 bullet' issues slide for Elevator Story.) Mia Bosquet and Steve Widergren are to engage marketing/graphic artist support on the GWAC story presentation.

Pacific Northwest Demo Projects

Rob Pratt presented two upcoming Pacific Northwest Testbed Projects: the Olympic Peninsula GridWise Demonstration and the Grid Friendly Appliance Demonstration. Currently, architecture issues in these projects are being dodged, but the GWAC may wish to follow them closely and consider architectural issues at a future date.

Action: Rik Drummond to look into the possibility of a Grid Friendly Appliance or other load-shedding demonstration in Texas.

Communiqué

Rik Drummond presented the concept of a communiqué that could be used to express and disseminate Architecture Council ideas to engage a broader audience. Steve Widergren noted that a review process is needed for the members to discuss such material prior to its distribution. Potential distribution channels mentioned included the Smart Grid Newsletter or a distribution list of friends of the GWAC (interviewees, etc.). In publishing this type of material, the GWAC needs to consider who will look at this, what will they do with it, do we establish a subscribe list, and is it in blog sphere—being careful about throwing out ideas, to avoid being labeled as 'wild and crazy'. These may be tangential thoughts to our core work. To a certain extent, it fits with the educational aspects of GWAC objectives.

Current proposals regarding the communiqué concept include:

- Do not stifle creativity: establish an idea posting area on the SharePoint site to keep such ideas for internal use.

- Communicate such ideas externally via individually authored articles (such as Jack McGowan's articles), which may refer to GridWise and the GWAC, without being published as GWAC documents.

- Group with a communications plan. First communiqués need to be announcements about what the GWAC is about. Put together communication strategy working group, with outside help (marketing specialist). (Obtain external help on core purpose: whitepaper or other. Key messages for website…10 words, 10 phrases)

- Establish a high-level URL for the GWAC (e.g. www.gwac.org or www.gridwisearchitecturecouncil.org).

Actions: Mia Bosquet and Steve Widergren are to draft a message proposal (engage marketing/graphic artist support on the GWAC story presentation, key messages, etc.). This can be used for the website, brochure material ... Mia Bosquet is to establish a high-level url for the GWAC.

Illustrative Scenario

Eric Wong presented an update from the Illustrative Scenario working group. The basic format for scenarios for internal use is included in the Market Scenario. Current scenarios for internal use include:

- Market Scenario - near completion for internal use (Lead: Jack McGowan)

- Emergency Response Scenario (lead: Steve Widergren/Erich Gunther)

- Residential (distributed intelligence), with GFA type technology (tie into recovery event) (Lead: Larsh Johnson)

- MicroGrid/Islanding Scenario (Lead: Eric Wong)

- Enterprise energy management info-- Hospitality Market (Lead: Jack McGowan)

Additional scenarios to add are

- Fault detection on distribution grid (lead: Dave Cohen, to determine whether this is a separate scenario or within the emergency response scenario)

- Critical loads/homeland security scenario, highlighting prioritizing resources and reconfigurability (lead: Albert Esser, to work with Eric Wong to determine whether this is within the microgrid/islanding scenario)

Dave Cohen would like to work with Eric Wong on the microgrid/islanding scenario (also note, there is CEC workshop in June on business models for microgrids). Albert Esser would like to work with Jack McGowan to incorporate energy management for peak load reduction in the hospitality market scenario.

Dave Cohen suggests that we may provide a sidebar or color code what is new in scenarios to highlight new things. Along side each scenario, authors should provide suggestions on potential audiences for the scenario and how the scenario might be presented to these audiences.

Actions:

Scenario Leads are to progress with each scenario. Members writing scenarios are to suggest audiences for the scenario, identify who should be targeted and how it should be done.

Interoperability Discussion

Members discussed interoperability including: What is interoperability? What are levels of interoperability? What paths are possible for the GWAC to move toward identifying, describing, articulating interoperability? How do these connect to current resources (Constitution, Illustrative Scenarios)?

Examples of definitions and thoughts on interoperability include:

- Software interfaces

- Passing information from devices/processes/entities enabling other processes.

- Choreography of 'business' processes, coupled with exchange of related objects (atomic records of information) back and forth

- 'Speaking' the same language or agreed upon third language (Latin), but not just language (interoperability can be equated with Latin: people have the choice of learning each others languages or learn a joint third language).

- Interoperability is more than just a language, it also involves test laboratories and certification (e.g., UL type testing)

- There are different levels of interoperability (down to certification).

- Identifying the business scenarios related to constitution will lead to a framework and mechanisms for enabling interoperability, maintaining over 30 years…

- Scenarios can be aimed at vendors, showing how the vendor will benefit from interoperability.

- We need to differentiate between interoperability guidance and integration guidance, looking toward business choreography.

- At any one point in time there are always legacy, current, and future systems working together.

- To discuss business processes (aka, scenarios) in a structured manner, it may be useful to have a tutorial in the Unified Modeling Language (UML) and modeling methodology. (Note, the OMG.org has clear white papers on UML.)

Albert Esser provided an example of interoperability at the device level, describing aspects of information exchange, understanding the meaning of this information, and the process choreography in the control systems area.

Steve Widergren summarized thoughts from the **Semantic Technology Conference 2005** which hold promise for greater flexibility in achieving interoperability in the future.

Action: Members are to contribute suggestions responding to these questions: What is interoperability? What are levels of interoperability? What paths are possible for the GWAC to move toward identifying, describing, articulating interoperability? How do these connect to current resources (Constitution, Illustrative Scenarios)?

ISO/RTO Council ITC

Walt Pfuntner (NY ISO) presented an overview of the Information Technology Committee of the ISO/RTO Council (BPA and TVA also attend IRC meetings as invited guests). Walt is a former chair of this committee. They are assembling principles and best practices for their enterprise systems and interoperation between systems. He sees the GWAC constitution interview process as very compatible with what they are doing.

Action: Walt Pfuntner is to send the NY-ISO animated slides on how power markets work to the GWAC.

Event Driven Architecture

Francis Parr (IBM) presented Event Driven Architecture to the GWAC. Members noted the significance of time-stamping and recoverability. Testing and simulation is a significant area of work. Huge gains may be able to be made in testing and integration costs with this type of approach.

Action: Ron Ambrosio is to point Albert Esser to current related work.

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
65[1]	Update GridWise star to include policy and regulatory aspects	Bosquet	May 31
66	Provide information on an example of legislative language for supporting technology areas (Nano-tech and technology bills)	Steve Hauser	Done
67	Contact IntelliGrid on desire to meet and propose list of attendees to attend the meeting	Gunther	May 14
68	Update goals slides to show priority of goals (first 2 most important).	Bosquet	May 31
69	Periodically send progress report and plan for Constitution interviews. All interviews targeted to be completed by end of June. Include scope of interviewee representation.	Bosquet	May 12 weekly
70	Obtain Troxell and Johnson interview list.	Drummond	May 12
71	Provide ideas for roadmap for interaction with academia (including other smart grid related work going on in research communities – PSERC, APERC, Carnegie-Mellon, WSU - GridStat, CERTS …)	Troxell	May 31
72	Contact Brad Johnson on the MADRI project for coordination/interview.	Bosquet/Widergren	May 31
73	Coordinate with CECA on GWAC participation in a DOE National Transmission forum in Jan/Feb 06 (Dave Meyer, DOE is client)	Bosquet/Widergren	June 30
74	Consider presentation theme for next meeting, and reduce number of presentations.	Bosquet/Widergren	June 30
75	Incorporate edits and suggestions, integrating the latest storyboard and 30 second description elements.	Ambrosio	June 6
76	Suggest changes on the elevator story presentation.	Watkins/Esser	May 27

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[1] No77te that Action Item numbers are unique, following existing action items. See Action Item Spreadsheet for all items.

	(Identify issues for a '4 bullet' issues slide for Elevator Story.)		
77	Engage marketing/graphic artist support on the GWAC story presentation.	Bosquet/Widergren	June 6
78	Propose GWAC communiqué/press release type write-up and include independent marketing communications expertise.	Bosquet/Widergren	June 6
79	Establish top level URL for GWAC web site.	Bosquet	May 27
80	Send slides on how power markets work.	Walt Pfuntner	May 20
81	All to send information for outreach to provide overview of how power system works.	All	June 6
82	Update the Emergency Response scenario.	Gunther/Widergren	May 31
83	Suggest potential audiences for Market Scenario and possible ways to present to those audiences.	McGowan	May 31
84	Proceed with writing Emergency Response Scenario.	Widergren/Gunther	May 31
85	Proceed with writing Residential (distributed intelligence), with GFA type technology (tie into recovery event) Scenario.	Johnson	May 31
86	Proceed with writing MicroGrid/Islanding Scenario.	Wong/Cohen	May 31
87	Proceed with writing enterprise energy management info-- Hospitality Market Scenario.	McGowan	May 31
88	Start Fault Detection Scenario.	Cohen/Gunther	May 31
89	Start Critical Loads/Homeland Security Scenario.	Esser	May 31
90	Include primary audience for the various scenarios and action plan for how that engagement be done.	McGowan Wong Johnson Gunther/Widergren Cohen/Gunther Esser	May 31
91	Members are to contribute definitions of interoperability and suggested paths for the GWAC to move toward identifying, describing, articulating interoperability	Drummond Gunther All Members	May 27