GridWise Architecture Council Meeting
Santa Clara, CA

May 19-20, 2008

Meeting Minutes

Council member Richard Schomberg chaired the meeting on behalf of Chairman Jack Mc Gowan who was absent on May 19, 2008. Steve Widergren and Jerry FitzPatrick (NIST) led the discussion on the morning of May 20, 2008.

Present

Architecture Council Members

Ron Ambrosio, IBM T.J. Watson Research Center
Joe Bucciero, KEMA Consulting
Rik Drummond, Drummond Group
Erich Gunther, EnerNex Corporation
Stephanie Hamilton, Southern California Edison
David Hardin, Invensys Process Systems
Alex Levinson, Lockheed Martin
Nora Mead Brownell, BC Consulting
Russell Robertson, Tennessee Valley Authority
Richard Schomberg, Electricite de France
Ken Wacks, Broadband Energy Networks

Architecture Council Members Emeritus

David Cohen, Infotility
Alison Silverstein, Consultant

Architecture Council Support

Steve Widergren, Ron Jarnagin, Heather Kuykendall – Pacific Northwest National Laboratory

Speakers and Guests

Lawrence Carter, Bonneville Power Administration
Bill Cox, Cox Software Architects
Jerry FitzPatrick, NIST
Steve Hauser, GridWise Alliance
David Holmberg, NIST
Joe Hughes, EPRI
Srini Krishamurthy, Eka Systems
Mark Maddox, Arcadian Networks
Terry Mohn, Sempra Energy Utilities
Mike Oldak, EEI
Terry Oliver, Bonneville Power Administration

Not Present

> Lynne Kiesling, Northwestern University
> Jack Mc Gowan, Energy Controls, Inc.

Proprietary Information Notice

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

Meeting Minutes Approval

The minutes from the April 25, 2008 web meeting were approved with no changes. All meeting minutes are available at http://www.gridwiseac.org/meetings/meetingminutes.aspx.

Upcoming GWAC Meetings

- **July 11, 2008** – web meeting from 9 – 11 a.m. PT or possible face-to-face meeting that may involve team and committee meetings.

- **September 22, 2008** – face-to-face meeting in Washington, D.C. in conjunction with GridWeek, September 23-25

- **October 31, 2008** – web meeting from 9 – 11 PT

- **November 12-14, 2008** – Grid-Interop 08, target location Atlanta, GA. No regular GWAC meeting is planned in conjunction with the conference.

Action Items:

- The logistics for the July meeting will be decided after Connectivity Week and the progress of the teams and committees has been gauged. (15 June 08)

- Heather Kuykendall will coordinate logistics for upcoming meetings with council members. (ongoing)

SharePoint Site Upgrade

The GWAC SharePoint site has been reorganized and upgraded to the new version of SharePoint. Heather Kuykendall gave a brief overview of the organization, and announced that we will be able to try the electronic balloting feature on the site in the future.

ConnectivityWeek Activities

Council members have a breadth of involvement in ConnectivityWeek this year, and are represented in approximately half the sessions:

- Tuesday Plenary (Brownell, Mc Gowan, Gunther)
- Thursday Plenary (Gunther)
- GridWise Expo
    - EISA 2007 Workshop: (FitzPatrick, Mc Gowan, Silverstein, Schomberg)
    - Smart Grid Opportunities (Ambrosio, Wacks, Bucciero)
    - AMI Implementation Roundtable (Gunther)

- IndConn
    - I2G Summit (Hardin, Ambrosio)
    - Industrial IT Connectivity (Hardin, Drummond)
- HomeConn: (Wacks, Gunther)
- M2M: Critical Technologies for Smart Services (Cohen)
- Smart Grid Basics (Gunther, Ambrosio)
- Buildings 2.0 meets Web 2.0 (Drummond)
- Green Data Center (Ambrosio)

Jack Mc Gowan will present five GridWise Applied Awards during the ConnectivityWeek Award Gala. The Council selected the nominees, which include individual awards to FERC Commissioner Suedeen Kelly, Terry Mohn from Sempra Energy, and Peter Kelly-Detwiler from Constellation New Energy. Two organization awards were given to FactoryIQ and the University of New Mexico. Jack Mc Gowan will present Commissioner Kelly's award to her in person in June in Washington, DC. The nominations committee used the awards criteria developed last year again this year. Richard Schomberg suggested that future awards be linked specifically to use of GWAC products (e.g., checklists, framework, and principles).

GWAC Extended Organization

➢ **Background**

Steve Widergren provided some background information to those members not able to attend last month's meeting regarding the reasons for extending the Council, which includes formalizing the communities formed during Grid-Interop07 and increasing the product output of the Council. This creates a more structured interaction between the Council and groups that it has worked with previously. DOE resources will be available for meeting arrangements and minutes.

In response to a question asking about the purpose of the organization, Steve replied that some committee proposals are more mature than others. Ultimately, the committee members themselves will agree to the mission, objectives, and action plans; however, the initial purpose for forming each group will be instrumental in setting their direction.

Steve Hauser was concerned that creating the new GWAC structure gives the impression of entrenchment of the Council in these groups. David Hardin responded that the groups I2G, H2G, and B2G are expected to have a level of permanence, and GWAC is facilitating discussion and action in these areas. The groups potentially have a long life cycle outside of the Council, particularly with NIST involvement. External leadership will help drive the Committees.

➢ **NIST Framework Team**

The NIST Framework Team is initially a co-chaired internal team, since only the GWAC and NIST are involved. Jack Mc Gowan, Rik Drummond, and Joe Bucciero have been involved in conversations with NIST, and GWAC will collaborate with NIST in this team to advance interoperability in support of smart grid applications. GWAC may consider revising the interoperability principles to address any NIST concerns. Product development will be coordinated to avoid duplication of efforts, and NIST efforts will be considered in GWAC community development. The team has the potential to grow to an external committee organization of GWAC or NIST.

Membership:

- NIST: Jerry FitzPatrick, others to be named

- GWAC: Schomberg, Hardin, Gunther, Drummond, Bucciero, Ambrosio, Brownell[1]
- DOE support: Widergren[2]

➢ **Industrial to Grid Committee**

David Hardin will present the I2G Committee structure at the I2G Summit during ConnectivityWeek, and will try to fill in the membership at that time. The first "deliverable" will be to find agreement and consensus on ideas and direction.

➢ **Interop Policy Committee**

The scope of the committee will be to serve as an interoperability resource to FERC and NARUC in their smart grid efforts and to create additional versions of the decision maker's checklist for benefits to targeted users. The challenge for policymaking is to avoid the impression of selecting technology winners and choosing standards that may hinder innovation. The Committee will raise awareness of related demo projects to avoid duplication. Rik Drummond and Erich Gunther commented that early adoption or implementation projects are of greater value than demonstrations or pilot programs. Demonstrations should be used to test business strategies, but not to test technologies, because the interoperability piece is overlooked. A FERC-NARUC Smart Grid Collaborative meeting is scheduled for July 23, where it may be possible to give a GWAC presentation. Coordinating with this group will be an important activity for the Interop Policy Committee.

Potential Membership:

GWAC: Kiesling, Gunther, Ambrosio, Brownell, Bucciero, Drummond, Schomberg, and Hamilton
GWAC Emeritus: Silverstein and Wong
DOE Support: Ruth Taylor

Action Items:

- A representative from the Interop Policy Committee will present the approved checklist at Portland NARUC Meeting (due 23 July 08)

➢ **Home to Grid Committee**

This committee is in the beginning planning stage, and the mission and objectives will be presented at a future meeting. Erich Gunther is leading the proposal team, and members will be populated from technical organizations such as the Zigbee Alliance, IEEE Intelligent Grid Coordinating Committee, NIST, and utilities.

Potential Membership:

GWAC: Gunther, Wacks
DOE Support: Ron Jarnagin

Action Items:

- Erich Gunther will develop a proposal on the H2G committee (due 13 Jun 08)

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[1] Nora Mead Brownell volunteered during the meeting to join the NIST Framework Team.

[2] Post-meeting note: GWAC Member Emeritus David Cohen also requested to join the NIST Framework Team.

- Ron Jarnagin will arrange a team teleconference with NIST involvement to review the proposal and prepare for coordination with the IEEE Intelligent Grid Coordinating Committee on 21 Jul 08 (due 27 Jun 08).

➢ **Building to Grid Committee**

This committee is also in the beginning proposal stage, and the mission and objectives will be presented at a future meeting. Jack Mc Gowan and Ron Jarnagin are leading the proposal effort, and members will be populated from industry, technical organizations, NIST, and utilities.

Potential Membership:

GWAC: Mc Gowan. Wacks
DOE Support: Jarnagin

➢ **Other Committees**

Other committees previously offered for consideration are the Inter-T&D Operations and Field Communications Network. No activity was reported at this meeting.

Smart Grid Activities at DOE OE

Presentation by Steve Widergren on behalf of Eric Lightner, DOE

The first meeting of the Electricity Advisory Committee is scheduled for May 20. The Smart Grid Implementation Workshop will take place on June 19-20 in Washington, DC. The Smart Grid Task Force is now up and running. The Smart Grid System Report called for in Section 1302 of the EISA of 2007 will be performed by PNNL. Navigant Consulting will be the contractor for the Section 1308 Effect of Private Wire Laws on Development of CHP Facilities report to Congress. Upcoming OE Outreach includes the "What is the Smart Grid e-Forum" on May 19, 2008, co-sponsored with EEI and GridWeek 2008 on September 23-25, 2008 in DC.

Grid-Interop08 Planning

Grid-Interop will be co-joined with the NIST workshop with three full days of content to accommodate the NIST activities. One day of the forum will be reserved for the NIST workshop, with the other two days for the Grid-Interop topics. The dates for the event are November 12-14, 2008 in Atlanta. This will be discussed further with NIST.

Proposed Planning Committee:

GWAC: Hardin, Drummond, Bucciero
External: (3) Jerry FitzPatrick, Terry Mohn, other?
Event Organizer: Budiardjo
Administration: Jarnagin, Taylor, Widergren

BPA Interactability Project

Presentation by Terry Oliver, BPA

This project will demonstrate the non-market interaction between end users by testing, demonstrating, and measuring the issues, values, solutions, and science of interacting devices, systems, and information across the electric grid. It will be an order of magnitude larger than the GridWise Olympic Peninsula demonstration.

Terry requested GWAC to act as an independent stakeholder by participating in the scoping of measurements and validation reports, and providing input during progress reviews. The Council's

initial questions about the project were the use of the GWAC framework and checklist, how interoperable products are tested, how they plan to keep up with technology changes during the multi-year project, and how to sell the idea if the customer doesn't understand interoperability. A suggestion was made that the plan should show progress in 6-month increments rather than at the end of 5 years.

Erich Gunther mentioned that First Energy is using the GWAC framework in their smart grid roadmap work and that Duke Energy and Salt River Project will likely do the same. EPRI is supporting First Energy in a smart grid roadmap workshop on 6 Jun 08.

Action Item

- Rik Drummond will discuss interoperable product testing with Terry Oliver.

- Terry Oliver will discuss with Steve Widergren on solidifying GWAC involvement and use of GWAC materials in the BPA Interactability Project.

Horizon Meeting Goals

Ron Jarnagin facilitated the strategic goal-planning meeting in January 2008. An assigned GWAC committee revised the output from the planning sessions. Actions were assigned to the goals where applicable. The four revised goals from the committee were presented to the Council, and they were approved unanimously. The individual action items below the goals will require due dates.

- Goal 1: Through focused outreach, ensure that the GWAC is a[3] trusted, independent resource for Smart Grid and interoperability activities.
    o Develop Smart Grid interoperability vision (12/19/2008)
    o Brief OEDER, NIST, FERC, and Smart Grid Task Force on GWAC activities

- Goal 2: Establish the credibility of the GWAC suite of products for use in investment decisions as well as Smart Grid and interoperability activities.
    o Complete benefits reports for financial, environmental, reliability, and consumers (12/19/2008)
    o Develop checklists for Decision Makers, User/Vendors, IT Professionals and Utility/Technical (12/19/2008)
    o Recommend DOE adopt GWAC materials for project design and evaluation

- Goal 3: Enhance the impact of the GWAC vision of interoperable systems to stakeholders through distributed, collaborative approaches.
    o Revise current Interoperability Context-Setting Framework or produce targeted audience versions (12/19/2008)
    o Follow through on stakeholder engagement with Action Roundtable activities for Industry to Grid, Buildings to Grid and Home to Grid
    o Accelerate[4] demonstration by industry and Smart Grid players

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[3] Changed to "a" from "the"

[4] Changed to "accelerate" from "encourage"

- Goal 4: Develop a culture for implementation-ready automation products and services that integrate and operate with the rest of the electric system.
    - Analyze key gaps that prevent small and medium enterprises from establishing common points of interface to enable business plans for conforming products and services
    - Analyze key gaps that prevent large enterprises from establishing common points of interface to enable business plans for conforming products and services[5]
    - Promote the value of conformance programs that provide credibility to implementation-ready products and services
    - Provide guidance for the transition of technology (including legacy technology) to the latest implementation-ready solutions, while allowing entry of the next evolution of products and services

Benefits Papers & Checklists

A draft of the Financial Benefits paper is expected from Harbor Research by the end of May. The GWAC previously provided comments on their outline. The contract for the Environmental Benefits paper is in the final phase. A proposal was received for the Reliability Benefits paper. The statement of work has not yet been written for the Consumer Benefits paper. Like the other papers, it will include examples from other sectors and industries, and provide insightful analogies.

Nora Brownell motioned that the Council approve the draft Decision Maker's Checklist. The document was pending review until feedback was incorporated into the document. However, Alison Silverstein reported that the feedback was not substantial enough to warrant a new version. The motion carried with eight confirmed votes and three abstained votes.

Steve Hauser recommended that the Council formally request organizations to approve or endorse the document, as feedback will naturally come if they decline. The GridWise Alliance's Interoperability Group is an avenue for additional feedback on the checklist. Terry Oliver will present his Interactability Project to FERC and will present the GWAC checklist and framework as part of the presentation.

Action Items:

- Ron Ambrosio will ask the GridWise Alliance Interoperability Group to endorse the Decision Maker's Checklist or provide comment (due 11 Jul 08).

- Erich Gunther and Alison Silverstein will provide PNNL with feedback obtained on the checklist thus far (due 31 May 08).

- Jack Mc Gowan will ask important organizations to endorse the Decision Maker's Checklist: GridWise Alliance, EPRI, and others. DOE should be asked to endorse the material after the other endorsements have been secured (due 11 Jul 08).

Outreach & Liaison Reports

➢ **Liasons**

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[5] This bullet was added during the meeting as a separate action from the related action above. Small and medium enterprises may be more flexible and would not have the resources or expertise in-house to which a large enterprise may have access.

GridWise Alliance: Becca Dietrich is sending out a recruitment message for the Interoperability Group. The GWA Board approved working group charters. Working group chairs will meet on 6 Jun 08.

EPRI: EPRI is publishing a white paper on 700 MHz D-block wireless with NIST and DOE involvement. EPRI IntelliGrid has about 20 members.

UCA User Group: Erich reported that the OpenHAN group approved an interoperability document. They are also working on AMI security. A new project with Wayne Loncore has begun with AMI Enterprises on a framework application.

➢ **Recent Events**

European Union Framework 7: Ron Ambrosio reported that German utilities are moving forward on smart grid ideas from the Framework 7 efforts.

CEC, Korea, Monaco Conference: Richard Schomberg presented material on interoperability.

CADER Conference: Stephanie Hamilton talked on the topic of interoperability.

Hawaii Clean Energy: Alison Silverstein spoke during a session on interoperability in the Hawaii Clean Energy Initiative.

ISO/IEC Home and Buildings Conference: Ken Wacks is working on a liaison between GWAC and this group.

NY Public Service Commission: Erich presented the interoperability framework and checklist. They will endorse the documents.

NYISO Smart Grid Workshop: Erich Gunther reported NYISO is doing a smart grid roadmap.

Citizens Utility Board of Illinois: Erich Gunther and Lynne Kiesling discussed applying design methodology to smart grid project proposals.

Morocco / Japan Outreach: Richard Schomberg presented interoperability to clients in Morocco and Japan.

Australia Outreach: Ron Ambrosio presented the Interop framework to clients in Lisbon, Australia.

ERCOT: Erich Gunther reported that interoperability with home area networks may be difficult to achieve in ERCOT.

IEEE TV: They are producing a show called "The Grid" and Erich Gunther presented the interoperability framework and home area networks.

EUCI Smart Grid Conference: Erich Gunther and Rik Drummond presented interoperability to a group of about 50 people on May 5-6.

➢ **Upcoming Events**

IEEE PES General Meeting: Dave Cohen, Erich Gunther, and Steve Widergren are involved at this event on July 20-24, 2008

Ken Wacks said that Broadband Energy Networks or their parent organization, Grid Plex, is willing to host a future GWAC meeting.

Communications Planning

Lynne Kiesling published an article in the Smart Grid Newsletter on May 13 titled, "Dynamic Pricing is Smart Grid's Secret Sauce." Upcoming articles for the Smart Grid Newsletter include summaries

of the Benefits papers, coordinated by Ruth Taylor. David Hardin will write and coordinate an article on the Context-Setting Framework.

Steve Widergren and Andreas Tolk are writing an interoperability article for the <u>Handbook of Science and Technology for Homeland Security</u>, to be published by J Wiley & Sons.

Action Items:

- Ruth Taylor will coordinate summaries of the Benefits papers for the Smart Grid Newsletter.
- David Hardin will coordinate an article for the Smart Grid Newsletter on the Context-Setting Framework.

Endorsement & Support Policy

The GridWise Architecture Council gets requests to support or endorse various conferences and organizations. Steve Widergren proposed a series of tests to apply that would determine if the entire Council needs to approve it, or if the Chairman and GWAC Administrator can make the decision.

- Level of Impact Test – local or wide visibility?
- Controversy and Complexity Test – unambiguous or likely split of Council opinion?
- Enduring Nature Test – long-term repercussions?
- Time is of the Essence Test – 2-5 day quick turn around?

Richard Schomberg commented that he would prefer a simpler test allowing to issue faster factual statements letters. The previously assembled team of Hamilton, Gunther, Brownell, Bucciero, Mc Gowan, and Widergren will draft and propose an endorsement policy at the next meeting. The policy's purpose is to avoid conflicts of interest and expediently reply to requests. It was agreed that individual Council members should not write letters using GWAC letterhead, that the endorsements should come from the Chairman or GWAC Administrator. Erich Gunther suggested that the criteria we used for following the GWAC constitution of interoperability principles may be useful in developing such policy guidelines.

NIST Interop Framework Team

(Day 2 Discussion)

Jerry FitzPatrick and David Holmberg from NIST joined the discussion on the NIST Interop Framework Team on collaboration between NIST and GWAC. NIST requested a point of contact from GWAC to attend NIST stakeholder meetings. The next meeting is scheduled in June. With scheduling conflicts, GWAC may tag-team the meeting attendance.

Jerry FitzPatrick would like input and feedback on the approaches that NIST is taking, input on how to proceed with workshop and breakout sessions, and suggestions for leaders in the various areas of expertise. NIST is talking with EPRI on their IntelliGrid architecture. Jerry would like recommendations from IntelliGrid, Modern Grid, etc, and will funnel the information to NIST.

Dick Deblasio is the IEEE liaison for the NIST Smart Grid Team. The goal of the team is to identify gaps and harmonize standards, although a process is undefined at this point. A report on the status of interoperable standards for the smart grid is due in December, and periodic reporting will be submitted after that. The vision for the progress report is to define what an interoperability standard is, to create a roadmap, to identify related organizations, and to create coordinating groups.

As discussed the previous day, Grid-Interop and the NIST Framework Workshop will be co-joined in Atlanta on November 12-14. David Holmberg would like to present a draft plan at GridWeek 2008 in

September and invite participation at the NIST Framework Workshop. T&D interoperability needs to be included in NIST work, along with the various GWAC x2G Committees. The entire community needs to be involved in identifying areas that are needed. An up to date view of the standards landscape is needed. The GWAC KnowledgeBase was noted as a resource for capturing standards organizations and related standards efforts in a browse-able tool. The material needs to be brought up to date.

David Holmberg stated that NIST does not have the available resources to write the report, and is looking for suggestions for vendors that might volunteer to write portions. He said that they plan to put all the information online. A teleconference with the GWAC will be arranged for either June 4 or 5. Jerry FitzPatrick will send out the agenda items soon.

Many valuable comments and suggestions not captured in these minutes were made during the discussion with NIST during this session. Jerry FitzPatrick expressed his gratitude for the ideas and support he is receiving from the GWAC as NIST formulates their plans. The GWAC looks forward to continued collaboration with NIST.

Action Item

- Steve Widergren will work with Jack Mc Gowan and the NIST Framework team to name a point of contact for NIST general stakeholder participation (due 30 May 08).

- Jerry FitzPatrick will propose agenda items for a NIST/GWAC team meeting on 4 or 5 of Jun 08 (due 2 Jun 08).

Summary of New Action Items

Item	Owner	Due Date
The logistics for the July meeting will be decided after Connectivity Week and the progress of the teams and committees has been gauged.	Widergren	15 Jun 08
Heather Kuykendall will coordinate logistics for upcoming meetings with Council members.	Kuykendall	Ongoing
A representative from the Interop Policy Committee will present the approved checklist at the Portland NARUC Meeting.	Interop Policy Committee	23 Jul 08
Erich Gunther will develop a proposal on the H2G Committee.	Gunther	13 Jun 08
Ron Jarnagin will arrange a team teleconference with NIST involvement to review the proposal and prepare for coordination with the IEEE Intelligent Grid Coordinating Committee on 21 Jul 08.	Jarnagin	27 Jun 08
Rik Drummond will discuss interoperable product testing with Terry Oliver.	Drummond	
Terry Oliver will discuss with Steve Widergren on solidifying the GWAC involvement and use of GWAC materials in the BPA Interactability Project.	Widergren	
Ron Ambrosio will ask the GridWise Alliance Interoperability Group to endorse the Decision Maker's Checklist or provide comment.	Ambrosio	11 Jul 08
Erich Gunther and Alison Silverstein will provide PNNL with feedback	Gunther and Silverstein	31 May 08

obtained on the checklist so far.		
Jack Mc Gowan will ask important organizations to endorse the Decision Maker's Checklist: GridWise Alliance, EPRI, and others. DOE should be asked to endorse the material after the other endorsements have been secured.	Mc Gowan	11 Jul 08
Ruth Taylor will coordinate summaries of the Benefits Papers for the Smart Grid Newsletter	Taylor	
David Hardin will coordinate an article for the Smart Grid Newsletter on the Context-Setting Framework.	Hardin	
Steve Widergren will work with Jack Mc Gowan and the NIST Framework Team to name a point of contact for NIST general stakeholder participation.	Widergren and Mc Gowan	30 May 08
Jerry FitzPatrick will propose agenda items for a NIST/GWAC team meeting on 4 or 5 of Jun 08.	Widergren	2 Jun 08