



## GridWise Architecture Council Gathering San Diego, California January 27-28, 2005

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### Meeting Minutes

Prepared 1 February, 2005

The meeting was held from January 27-28 at the Mission Valley Resort in San Diego, California 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.  
Erich Gunther, EnerNex Corporation  
Stephanie Hamilton, Southern California Edison  
Larsh Johnson, eMeter Corporation  
Jack McGowan, Energy Controls, Inc.  
Wade Troxell, Colorado State University  
Vito Stagliano, Calpine Corporation  
Don Watkins, Bonneville Power Administration  
Eric Wong, Cummins Inc. (January 27)

#### **Architecture Council Support**

Steve Widergren, PNNL  
Mia Bosquet, PNNL

#### **Guests**

Brad Nacke, Emerson Network Power (Standing in for Albert Esser)  
Eric Lightner, DOE OETD  
Paul Wang, CTC  
Jesse Berst, Center for Smart Energy (January 28)  
Ron Hoffman, Consultant (January 28)

## 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, including the latest revisions.

## Constitution Discussion

### Overview and Editing of Statements of Principles

Rik Drummond and Mia Bosquet provided an update on the progress to date on the Constitution principles, member responses to them, and the interview process and planning. Each statement of principle was presented and clarified succinctly while each member 'voted' using colors to indicate the extent of his/her agreement with the statement and whether reformulation was imperative or not for the statement. The results of this initial critique and vote provided a clearer view of which statements were the most and least controversial or in need of reformulation, prioritizing the work to be done.

During the Working Group session on day 2, subgroups addressed each of the statements of principle which needed reworking, using the feedback available from prior work.

Rik Drummond suggested we entertain the example of Universal Commercial Code—a non-obligatory, but adoptable reference code, to capture the reality of diversity of situations across the country. Maybe one principle would describe the need to make universal grid code.

*Action: Mia Bosquet will compile and finalize edited statements of principle resulting from these sessions with the help of the Constitution Working Group. As per member suggestions: re-order principles, add short preamble to each section, add option of indicating importance (in addition to extent of agreement/disagreement), indicate level of confidentiality and provide option of 'anonymous' interview (ensure that comments attributed to specific individuals will not be disclosed), provide indication of 'what's in it for them' (outcome).*

### Interview Process and Planning

Because the GWAC intends to interview a large number of stakeholders concerning the Constitution Principles, methods will be needed to structure the interviews and facilitate compilation and presentation of overall tendencies in responses. Mia Bosquet presented and applied a recognized method of using color-based responses to summarize interviewee responses and supplement more lengthy comments.

In discussing the interview process, David Cohen suggested also adding elements from software requirements assessment processes to effectively structure the interviews. These additions will, for example, involve questions to profile each interviewee before addressing constitution principles and questions following the principles to identify which points are more important and what are key issues for him/her. Rik Drummond noted that refinement of the interview process needs to account for the basic objectives of the Constitution regarding stakeholder buy-in, and thus keep the interviews bounded to some extent.

The general schedule of tasks to be completed for Constitution Interviewing through the end of the year were laid out as follows:

- +4-8 Weeks
  - Initial interview with GWAC members listening (WebEx): one real interview
  - Guinea pig interviews: 2 interviews per member with ‘friendly’ interviewees
- +8-12 Weeks
  - Guinea pig phase done, compiled, feedback given to guinea pig interviewees
  - Refine process guidelines, “Principle form”, interviewee list and schedule
  - May 3-4 meeting: Discuss, finalize, launch Phase 1
- +16-32 Weeks: Phase 1 external interviews
  - GWAC members conduct at least twenty interviews
  - Consolidate interviews into next revision of the Constitution principles interview document. Get interview names from interviewees.
  - Return feed back to the original interviewee’s in writing and verbally
  - Adjust Constitution principles document to reflect interviewee’s comments

The Constitution interview process should coordinate with IntelliGrid (through Erich Gunther) and other active organizations to be sure that interviewees are not receiving multiple contacts from different stakeholder engagement efforts at the same time.

*Action: David Cohen is to walk those interested through a survey template he has used. Rik Drummond and Mia Bosquet will subsequently prepare the interview Principles Form (the key document to be used for interviewing and to record responses) and Interview Guidelines for GWAC use. Rik Drummond will perform an initial interview with GWAC members listening by WebEx.*

## Microgrid Overview

Eric Wong presented an overview of the concept of microgrids. Participants noted that if you sell power to someone else, you fall in the category of a regulated utility, but some states are reviewing such regulations to accommodate microgrids. Members observed that the biggest regulatory issue in this context is trade between customers within a microgrid. A market structure or available price signal is needed to absorb bids from a microgrid and to enable incentive for this type of program. Other drivers might also be reliability or security (such as in military communities), or operational and control objectives such as enabling emergency responses more effectively by subdividing into microgrids in given neighborhoods (as in Chicago).

Eric Wong asked for those interested in working with him on a related CEC microgrid deployment demo. David Cohen and Brad Nacke will collaborate with Eric Wong.

## Outreach

### General

Mia Bosquet presented a general overview of GWAC outreach actions and strategies, highlighting the focus on maintaining a balance of engagement across related industry sectors.

Members entertained the idea of extending the elevator story working group to coordinate presentations and overview articles about the GWAC. Steve Widergren suggested that members write an article (for example, for Energy and Power Magazine) on the GWAC, structured, for

example, around the elevator story. Eric Lightner and Jesse Berst mentioned that they are writing a document on the GridWise vision, which could contribute to a GWAC paper. Vito Stagliano suggested we create about six presentation slides for general audiences setting forth an organizational picture (GWAC, Alliance, IntelliGrid, etc.).

The GWAC should look into exchanging information about the home networking area (Joint Technical Committee of IEC SC 25 and ISO – Ron Ambrosio), electricity trading systems (Don Watkins), and regulatory groups (NARUC and RAP). Brad Nacke mentioned that the PowerGen electricity trading conference should be considered in outreach planning. Contact with NRECA should also be considered.

### **GridWise Alliance**

Ron Ambrosio provided an update on the GridWise Alliance, indicating their adoption of a new dues structure to open the door for small companies, or individuals, to join. The GWAC can have input into the interoperability Working Group agenda—which could do lower level technology/implementation work, details, and business case aspects.

### **ISO/RTO ITC**

Don Watkins provided an update on his contacts with the ITC and the possibility of having an ITC speaker at an upcoming GWAC meeting.

*Action: Ron Ambrosio is to send JTC1 SC25 interoperability standards material to Mia Bosquet.*

*Action: Mia Bosquet is to more explicitly add regulatory organizations to outreach pictures (NARUC, RAP...) and continue updating conference listing with input from members. Mia Bosquet will make a SharePoint folder as a resource for related presentations.*

*Action: Wade Troxell is to draft ideas for a journal article on the GWAC.*

### **OETD**

Eric Lightner presented an update on the Department of Energy's Office of Electric Transmission and Distribution. The Office of Energy Assurance is being subsumed within OETD. This will add about 15 people to the office and influence security aspects of their work. The new Secretary of Energy, Sam Bodman, will be putting his management team in place. A new OETD director is expected to be named in 2-3 months. The GridWise budget for FY 2005 is \$3.4 M. In addition, Congress allocated \$1.5 M for a GridWise oriented demonstration in the Pacific Northwest. A summary document from the Chicago electric distribution technology roadmap meeting will be available soon.

### **Emerging Market Outlook and Value Proposition**

Jesse Berst presented his outlook on smart energy markets. Members suggested that the messages be adapted to express the state of the existing system more from the point of view as an opportunity for new solutions and less as a problem in dire straights. Vito Stagliano was concerned about statements that tend to overstate the problem and over promise the solution. He noted that 40% of people in the US live in areas with excellent, market based grids, created in the last 7 years. The ISOs are the equivalent of the air traffic control system, and, for example, PJM spent considerable resources over the past 6 years to improve reliability and upgrade system technologically.

There is a need to be humble about how complicated this machine is and how well it operates. Jesse challenged the group to consider ways in which complex points can be stated simply. In crafting a message to influence change, the message cannot be too complex.

## GWAC/IntelliGrid Position Statements

Erich Gunther presented slides conveying the relative positions of the GWAC and the IntelliGrid Architecture, stating the different emphases and the complementary nature of these two endeavors. Members provided a number of suggestions to help strengthen the positioning diagrams (see presentation material).

Erich mentioned IntelliGrid staff's interest in a document of understanding between both efforts. GWAC members expressed concern with such documents, noting the need to protect their independence.

*Action: Erich Gunther is to provide copies of his positioning slides to Rik Drummond.*

*Action: Erich Gunther and Steve Widergren are to update the material based on suggestions from the 27 Jan 05 GWAC meeting.*

## Administration

### Approval of Dec 10 Meeting Minutes

The minutes for the December 10, 2004 teleconference meeting were approved with no dissensions.

### Schedule of Future Meetings

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

- March 11, 2005, 11am- 1pm (PST); WebEx
- May 3 & 4, 2005; Yorktown Heights, NY; with the assistance of IBM Watson Research Center
- June 10, 2005, 8am-10am (PST); WebEx
- September 14 & 15, 2005, Washington D.C., (tentatively with the assistance of SAIC)
- October 28, 2005, 8am-10am (PST); WebEx
- December 5 & 6, 2005, San Francisco, CA

*Actions: Albert Esser is to confirm his availability for new and altered dates.*

## Illustrative Scenario

Members discussed the general framework for the current scenario narratives, as well as steps to take from here. The current audience for the scenario narratives is the GWAC, with the intention to then repackage them for other purposes and other audiences.

Suggestions for refinement of the current "market opportunity" scenario and basic framework include:

- Remain focused and make a few key messages (as shown from the IntelliGrid scenarios experience).
- Include an abstract
- Move the description of players up front.
- End with take away/analysis section, equate to ROI, benefits, opportunities. Clarify what is new and what it means.
- Consider including a glossary.
- Consider adding story-board like visualization.
- Consider obtaining outside peer review from representatives of the “players,” such as LADWP in this case.

At some point, others can contribute scenarios which the GWAC can review and ultimately add to a library of scenarios.

Variations on scenarios can weave in other concepts, each like a chapter in a book. Care must be taken to understand constituents and be sure that the scenarios talk to them. Suggestions for extending the scenarios include:

- Aim to cover 80% of issues with 20% of scenarios (aim initially to define 3-5 scenarios, and from there proceed based on demand and interest, encouraging others to contribute scenarios).
- Make just enough scenarios to demonstrate each statement of principle. Ensure that the four areas of transformation from slide 3 of the elevator story are covered.
- Consider on-line versions which enable easy viewing at progressive levels of detail (abstract, details, animation).
- Add a story-board, providing event-to-event animation.
- Consider key value statements (efficiency, reliability, social benefits): basic value statements are to flatten load duration grid, reliability, self healing grid, another implicit value statement concerns customers participating in system and getting a reward.
- The current market scenario has relatively long time line, an emergency scenario is needed that stresses the system (the Tennessee example).
- A scenario is needed to address regulatory issues—for example, a market-based response example to capture regulatory change issues. Take into consideration the spread of different regulatory environments and account for the fact that scenario applicability will be location specific.
- A scenario that incorporates ISO level issues.

General plans for scenario progress include:

- Near-term identify 3 more scenarios to work on:
  - Update current scenario
  - Revise emergency/reliability scenario
  - A residential scenario
- Longer-term: identify areas to cover sufficient sectors/stakeholder groups/value areas
- Use scenarios to:

- Create various elevator story type materials—distill the scenarios into promotional vehicles.
- Delve into various technical analyses.

*Actions: Jack McGowan is to lead the effort to refine the current scenarios as per the 27 Jan 05 GWAC meeting suggestions, refine the emergency/reliability scenario, and propose a residential scenario.*

## Elevator Story

Ron Ambrosio walked through the most recent elevator story slides and members provided comments for editing and improving. Members suggested adding an abbreviated graphic version of a simplified scenario at the outset. A new slide showing drivers from regulatory to markets to business to technical will be added as a circle with the customer in the center.

*Action: Ron Ambrosio is to incorporate edits and suggestions, provide latest version on SharePoint, and forward to Rik Drummond.*

*Action: Rik Drummond is to write a 30 second explanation that summarizes the GWAC.*

## CEC DR

Ron Hoffman, a consultant to the University of California presented an overview of the California Energy Commission Demand Response Initiative. Following the 2001 crisis in California, a basic point of agreement was that the market design disconnected wholesale and retail aspects. There is general agreement that the ability of demand to respond to a crisis was missing. A fundamental question before the CEC and other stakeholders is: how do we support future transition and not get stuck with stranded technological assets. On Feb. 1 a workshop is being held in Sacramento to discuss this topic. The CEC is seeking a Reference Design, much like the open blueprint for the personal computer from IBM, to enable DR-related information exchange before, during, and after a crisis. The scope for now is to address critical peak pricing with a day ahead time frame.

The GWAC may want to remain informed about this effort to learn of the principles employed and the issues encountered.

*Action: A number of members plan to participate in the Feb 1 workshop. Steve Widergren is to distribute website links and related material to GWAC members, where to go for more information on demand response.*

## Roadmap

Steve Widergren guided the members in reviewing the near term and longer-term GWAC roadmap. Members would like to work on technical strategy at the next meeting.

Currently missing from the roadmap is a standards engagement strategy. One approach under discussion is to enable a multiple path strategy by focusing on a 'common code' rather than specific standards. Options to consider as paths to influencing standards work include jointly sponsored forums (such as with the CEC), co-located workshops or working groups (such as with the IEEE PES).

Regarding the role of the GWAC in collaborative demos, the GWAC can piggyback on cross-sector demo projects. Members are asked to contribute to a list of current planned demos. Ideas to explore with other stakeholders include the concept of GWAC endorsement of demo projects, working with

vendors to think about their products from a GWAC viewpoint.

*Action: Steve Widergren is to update the near-term plan as a result of information from this meeting and adjust the long-term activities accordingly.*

*Action: Members are to identify demo projects related to the GWAC's efforts.*

## **New Business**

Wade Troxell highlighted the general lack of curricula nationwide to prepare 'GridWise'-savvy graduates. The GWAC should start viewing academia more explicitly as a stakeholder group, and add organizations (National Energy Education Association, ASEE, ASEE R & D Symposium...) to the outreach list. Possible longer term goals for the GWAC related to education include: develop excitement in academia similar as for the word 'Green'; identify and enable linkages of power engineering (power systems, communication, controls, information technology); consider holding a GridWise Curriculum Convention or similar event; provide suggestions of interdisciplinary research possibilities; and influence advisory boards of universities.

*Action: Mia Bosquet is to add the academic 'sector' more explicitly in GWAC outreach strategy; coordinate communication between the GWAC and other GridWise activities in the area of curricula development and outreach to academia.*



## 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
31 <sup>1</sup>	Compile and finalize edited statements of principle with the help of the Constitution Working Group.	Bosquet	Feb 14
32	Walk through a survey template (software requirements assessment methods).	Cohen (lead) Bosquet Drummond	Feb 14
33	Prepare the interview Principles Form (the key document to be used for interviewing and to record responses) and Interview Guidelines for GWAC use.	Drummond (lead) Bosquet	Feb 21
34	Constitution interview WebEx with GWAC members listening (first 'real' interview)	Drummond	Mar 4
35	Send JTC1 SC25 interoperability standards material to Mia Bosquet.	Ambrosio	Mar 4
36	More explicitly add regulatory organizations to outreach pictures (NARUC, RAP...), continue updating conference listing.	Bosquet	Feb 14
37	Initiate SharePoint presentation resource folder.	Bosquet	Feb 11
38	Draft targeted article on GWAC or constitution for professional journal publication.	Troxell (lead)	Mar 4
39	Update the IntelliGrid/GWAC positioning slides based on suggestions from the 27 Jan 05 GWAC meeting.	Gunther (lead) Widergren	Feb 11
40	Provide copies of IntelliGrid/GWAC positioning slides to Rik Drummond.	Gunther	Feb 11
41	Confirm availability for new and altered meeting dates.	Esser	Feb 11
42	Refine the current scenarios as per the 27 Jan 05	McGowan (lead)	Mar 4

<sup>1</sup> Note that Action Item numbers are unique, following existing action items. See Action Item Spreadsheet for all items.

	GWAC meeting suggestions, refine the emergency/reliability scenario, and propose a residential scenario.	Wong Britton Johnson Cohen	
43	Incorporate Elevator Story edits and suggestions, provide latest version on SharePoint, and forward to Rik Drummond.	Ambrosio	Feb 14
44	Write a 30 second explanation that summarizes the GWAC.	Drummond	Feb 2
45	Distribute website links and related material on Feb 1 CEC DR workshop to GWAC members and where to go for more information on demand response.	Widergren	Feb 11
46	Update the near-term plan and adjust the long-term activities accordingly.	Widergren	Feb 27
47	Members to identify demo projects related to the GWAC's efforts.	Bosquet Members	Feb 28
48	Add the academic 'sector' more explicitly in GWAC outreach strategy; coordinate communication between the GWAC and other GridWise activities in the area of curricula development and outreach to academia.	Bosquet	Feb 18