

**Comments on GridWise Architecture Council / NIST Home-to-Grid Domain Expert Working Group
Free Market Choice for Appliance Physical Layer Communications**

Name: Jerry FitzPatrick **Company:** NIST **E-mail:** fitzpa@nist.gov **Telephone:** 301-975-8922

Please identify the location of each comment by page and line number. Provide your comment and your proposed change, if any.

Please submit comments to:

- Conrad Eustis <conrad.eustis@pgn.com>
- Mike Coop <mcoop@heycoop.com>
- Michel Kohanim <michel@universal-devices.com>
- Ram <chellury.sastry@pnl.gov>
- Brian Seal <bseal@epri.com>
- Ken Wacks <kenn@alum.mit.edu>

E/G/T: E = editorial (typo, grammar, clarification), G = general, T = technical
ID = (Company initials)-(comment number); e.g., NIST-1 for first NIST comment; NIST-2 for second NIST comment

Page	Line	E/G/T	ID	Comment	Proposed change	Resolution by subcommittee
General		T	NIST-1	The analysis and justifications presented in this paper supporting the recommendation that the SGIP should not pick a “winner” sometimes appear to be predictions or assertions that people can use to argue either for or against the recommendations. There is a need for stronger backup information. See specific instances in the comments below.		
1	16-17	E	NIST-2	Paper should also be submitted to SGIP HAN Task Force	Add Smart Grid Interoperability Panel Governing Board HAN Task Force to list or recipients	

2	36	T	NIST-3	How will the recommendation in 3 resolve security issues in 2? Furthermore, those risks in 2 are not limited to wireless. As long as Smart Grid networks reach into private places, such as the home, it is always subject to tempering. A plug is not different from a Ethernet socket.	Clarify how security is addressed with the socket approach.	
2	78	T	NIST-4	One will never have perfect data, but there are plenty of data that will allow one to do a rough estimate. Presenting existing data, giving a rough estimate, or comparing relative expected costs, will give more convincing reasons to justify the recommendations of this paper. Without citing data, how is the plug a better solution?	Provide examples of existing data, cost estimates to justify the paper's recommendations.	
3	80	E	NIST-5	The use of "intensely lobbying" is incorrect. NIST has actively solicited input from all stakeholders.	Change wording from "Certain interests are intensely lobbying" to "Same stakeholders are proposing that"	
3	82	E	NIST-6	Need greater to justify this conclusion better – see other specific comments on following sections.	Replace "would" with "could"	
3	96	T	NIST-7	Are there data from studies that show this phenomenon?	Provide a reference with background and more information on how rebound in demand creates load problems	
3	98	T	NIST-8	Are there data/studies/reports that show this phenomenon?	Provide more background and reference on limitations of AMI networks for realtime price signaling	

3	98	T	NIST-9	How is the number (“billions”) of devices estimated?	Give justification for “billions” of devices. A reference would be useful.	
3	101	T	NIST-10	Are there data/studies/reports that support these requirements?	Provide reference/additional information on what the latency and signaling requirements for ancillary services are, and how they could be a challenge AMI networks.	
3	103	T	NIST-11	Are there data/studies/reports that support these requirements?	Provide reference and elaborate on the network requirements for phasor information, how this information will keep rooftop solar units on line during transients, and how the AMI networks would be unable to align with these requirements.	
3	108		NIST-12	Yes, these are architecture issues that need to be considered, but why are they relevant to the recommendation? How will the recommendation address these issues?	Clarify how the recommendations of the paper will address the architecture issues.	
3	110	T	NIST-13	Where can more information about the Google approach be found?	Provide reference with more information about the Google approach.	
3	114	T	NIST-14	Is there a study or report justifying this statement?	Justify the statement that “most home energy-management system providers are drilling down to focus at the micro level” with a reference, or change “most” to “some”.	
3	118	E	NIST-15	Is this the only or biggest challenge?	Change “The challenge ...” to “A question to be answered ...”	
4	125	T	NIST-16	Are there other approaches that can be effective in ensuring an innovative and cost-effective market?	Justify the conclusion that “Only this approach will ensure an innovative, cost-competitive market ...”	

4	144		NIST-17	Again, will the recommendation solve this problem? The underlying network technology determines speed of the network, the plug itself will not improve the performance. One should stress that the recommendation for a plug will allow many capabilities to overcome the problems mentioned here. Stating the problem does not make a solid case for the recommendation.	Explain how the recommendation solves the problem.	
4	161		NIST-18	Please cite source of data. Be specific.	Cite reference for the communication solutions cited in this paragraph.	
5	179	E	NIST-19	TWACS is a registered trademark.	Add ® to TWACS.	
5	204	T	NIST-20	The internet is still a packet switched network now.	Change text accordingly.	
6	227	E	NIST-21	This seems to imply that the because of the dependence on sockets, "the LAN cards then were not interoperable." Does this really mean that the it was a wise decision to go to sockets because equipment connected to PCs were not interoperable at that time and flexibility in choice of LAN cards, rather than embedding them, was necessary to enable use with a variety of peripherals?	Revise text accordingly.	
6	233	T	NIST-22	This paper implies there no standard protocols satisfy these requirements, which is not convincing.	Include text regarding existing standards that meet the requirements.	

8	299	E	NIST-23	This seems to indicate that the selection of a small list protocols will lead to appliances that don't have greater operational flexibility.	Change "capable" to "incapable"	
8	315	T	NIST-24	What evidence or studies exist that support the conclusion that the probability of substantial negative consequences is "quite high"?	Cite reference(s) or change "is" to "may be".	
8	319	T	NIST-25	What evidence or studies exist that support the conclusion that the smart appliance consumers will bear a high risk of buying equipment that becomes prematurely obsolete or subject to cyber crimes?	Cite reference(s) or change "bear" to "may bear".	
9	354	T	NIST-26	NIST does not intend to be in the business of picking "winners" and "losers". The NIST goal is to drive to get consensus and expects industry to reach agreement on the applicable standards as needed.	Modify text accordingly.	
10	392	E	NIST-27	NIST supports the interests of all stakeholders and seeks balance and consensus in all its activities.	Replace "defend" with "support".	
10	398	T	NIST-28	Has the paper really provided hard evidence to support this?	Change "will" to "could".	

11	413-414	T	NIST-29	See comment NIST-26 about NIST selecting a "preferred" solution.	Replace "If the Executive Office and NIST feel compelled to choose a "preferred" solution for wireless or wired home area network communications, they should announce a competition to put ..." with "To quantitatively determine if the application of wired or wireless home area network communications, there should be a demonstration that puts .."	
----	---------	---	---------	--	--	--