



Report to the SGIP Governing Board: PAP10 Plan

Tuesday, June 15, 2010

Governing Board Request and Background Information

At the May 24, 2010 Governing Board meeting, in response to George Arnold's May 21, 2010 memo on the status of customer energy usage information standardization, the Governing Board requested that the PAP10 leadership team provide a consensus plan and expedited schedule (measured in months, not years) for production of a standard for consumer energy usage information by a recognized Standards Developing Organization (SDO), compliant with the definition of a "voluntary consensus standards body" per the National Technology Transfer and Advancement Act (NTTAA) and OMB Circular A-119, and acceptable for reference by federal and state regulators.

PAP10 "Standard Energy Usage Information," which had been initiated last summer, had completed a series of tasks leading towards its goals:

- Work in the UCA International Users Group (UCAIug) completed a draft specification of Open Automatic Data Exchange (OpenADE) (version 1.0) for immediate satisfaction of regulatory requirements in California.
- A new organization, EIS Alliance, formed from stakeholders with a facility-side perspective, developed some key Use Cases and preliminary information models concentrating on PAP10 requirements.
- ZigBee Smart Energy Version 2.0 (SEP2.0), work of the ZigBee Alliance, has become generally available for input and comment.

In addition, work had begun to formalize the requirements for a PAP10 deliverable, traceable to and based on the NIST Framework and Roadmap for Smart Grid Interoperability Standards, Release 1.0, with consensus review by the PAP10 community.

However, convergence of these efforts to produce a final deliverable for PAP10 was still needed, based on the PAP10 task on construction of a plan to implement a plan for standardization in multiple SDOs. (This previous PAP10 Task 8 is now repurposed on the PAP10 TWiki electronic collaboration site).

George Arnold's and the Governing Board's request to produce a standard for consumer energy usage information by a recognized Standards Developing Organization (SDO) has helped to provide impetus and closure criteria to drive the PAP10 effort to the desired solution.

Progress during and after ConnectivityWeek

During ConnectivityWeek, the PAP10 leadership convened a series of previously planned meetings of representatives from SDOs capable of fulfilling the PAP10 charter to create a referenceable standard in a short timeframe. Based on these discussions and with the consensus of the PAP10 community as expressed during public PAP10 meetings at ConnectivityWeek, a plan was developed and approved with the following elements and agreements:

- **Constrain Scope of PAP10:** PAP10 Basic Energy Usage Information shall be a single limited-scope information model. That is, PAP10 will not cover all interactions associated with energy in the home or commercial space. Additional standard information models will be necessary to support load management, for example. Additionally, the proposed standard will be limited to defining an information model only. The implementation of messaging using the model and the syntax by which messaging is encoded is left to SDOs and Standards Setting Organizations that will use the “seed” standard.
- **Referenceable Standard Creation:** The North American Energy Standards Board (NAESB) is called upon and agrees to lead an effort to complete a PAP10 Standard in ~6 months by December 2010.
- **Facility Side Modeling Effort Started:** The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) will lead a facility energy information models effort in parallel with the PAP10 effort of NAESB. These models will complement the PAP10 model.
- **Ensuring that Supplier- and Consumer-side Requirements are Met:** Cross pollination of NAESB and ASHRAE leadership for both efforts will facilitate addressing of stakeholder requirements, and will help to ensure that the broad range of interested parties are well represented in both NAESB and ASHRAE standardization efforts.
- **Tiger Team to Assemble Straw Model:** A Tiger Team will be rapidly convened to assemble a unified “data table” list with maximized reuse and minimized impact upon existing work – UML Model in Enterprise Architect (EA) + IEC Common Information Model (CIM)¹:
 - SEP2.0
 - EIS Alliance
 - ASHRAE
 - NAESB
- **Key Sources of Model Components:** Core document contributions to be free and clear of constraints; data models only.
 - SEP2.0, OpenADE, and EIS Alliance

¹ IEC 61970, 61968

- Coordination With and Use of Content from PAPs 3, 4, and 9:** It is recognized that pricing and demand response efforts and the PAP10 model will need to be coordinated, with the goal that relevant content is used appropriately and consistently.

Since ConnectivityWeek

The planned Tiger Team was assembled and conducted a modeling unification exercise at NIST in Gaithersburg, Maryland on June 2-4, 2010. This effort was successful at reaching a consensus concrete Straw Model in UML based on CIM, SEP 2, and EIS Alliance models.

A white paper was written and the model and white paper were posted on the TWiki on Monday, June 7, 2010. (see [TWiki PAP10 Tiger Team Results](#))

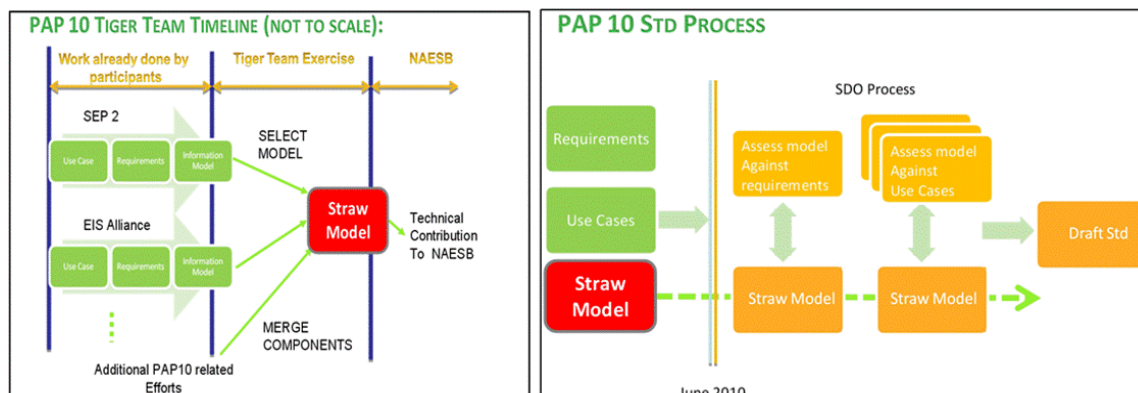
NAESB rapidly initiated the formation of a standards committee co-chaired by the collaborators that inspired the consensus plan now underway. A meeting schedule was established allowing for completion of the standard before the end of the year (December 2010). (see [TWiki description NAESB PAP10 Task Force](#))

The ASHRAE Standards Committee approved the title, purpose, and scope (TPS) for an effort to standardize additional and complementary facility-side models and also to reuse the results of PAP10.

PAP10 has completed its requirements document that can be utilized to assess the NAESB result, as well as to guide their progress.

The Plan Going Forward

PAP10 plans to support the NAESB effort, focusing our work in that forum. The following figure illustrates how the tiger team Straw Model can be used as a technical contribution and matured into a consensus standard:



The graphic on the left shows how the Straw Model was assembled from the prior work and then enters the NAESB process as a technical contribution. The rightmost graphic shows how that Straw Model evolves through the NAESB process:

- 1) with requirements review against the Straw Model, followed by,
- 2) assessment of PAP10 Use Cases against the Straw Model

At each step the model can be matured as needed with the input of the broad range of interested stakeholders under the formal procedures of NAESB, an ANSI-accredited SDO.

It is anticipated that a new PAP may be desirable to support and facilitate the SGIP stakeholder involvement in the ASHRAE-led standards development effort. This new PAP could be expected to involve the same participants as does PAP10 and may be implemented in tandem with PAP10, albeit under a new PAP charter appropriate to its content. Once developed, this potential PAP would be brought to the Governing Board in the usual process.

Finally, we anticipate that the NAESB production of a standard by December 2010 will meet the core goals of PAP10, which can be deemed successfully completed at that time.

Report submitted on behalf of the PAP10 leadership team by David Wollman, NIST lead for PAP10.