

Meeting minutes and notes from - October 11, 2011

Agenda:

- 1 - Gather & attendance (3 min)
- 2 - Review, revise and accept agenda (2 min)
- 3 - Review and approve minutes of previous meeting(s) (5 min)
- 4 - OFFIS/EPRI report on Tools and Models Survey [10 min]
- 5 - Discussion: Steffen Steffen Schütte will kick off the sub-task of studying architecture and requirements for next-generation Smart Grid modeling and simulation [30-40 min]
- 6 - Any new WG business [5mn]
- 7 - Any other items, close [5mn]

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11:05: Gather and attendance:

Craig: Called meeting to order, and attendees registered.

Attendees:

Bojan Kriznar  
Bruce Kramer  
Jason Taylor  
Jen Schoene  
Mark Chapman  
Ron Cunningham  
Steffen Schütte

Craig Rodine (Chair)  
Martin Mak (minutes)

11:07: Craig reviewed today's meeting agenda and objectives.

11:08: Craig called for approval of the minutes from last meeting.  
Note - The meeting notes had been posted on the SP earlier on 10/11  
(Martin M.)

11:10: Steffen Schütte - Status report out on Models & Tools Survey.

High number (60?) of signup respondents.

Question and brief discussion on the need to maintain confidentiality/privacy of the names. Craig suggested posting using only the first names.

Steffen and Jason to provide the modified names list.

11:15: Craig - Reviewed the efforts, from earlier in the year, to define "Architectural Simulation Strategies & Methodologies". (System Requirements)

Steffen: Provided a brief overview of investigations by Martin Tröschel and himself (working under OFFIS).

Power flow and Optimal Power flow solvers employing low voltage (AC and/or DC) methodologies.

Specifically - OFFIS Open Source IEC CIM to PyPower tool set.  
Provides conversion from mport Circuit/feeder models in XML format  
Output in IEC CIM format.

Craig: Question for Jason - How does this compare with other tools at  
EPRI / EnerNex?

Jen Schoene (EnerNex): Not aware of Steffen's tool but it looks  
(sounds) like it could be very useful (and interesting).

Craig: Question about IEEE models and compatibility between U.S. and  
European models.

Steffen: There appears to be a need for converting from line topologies  
to CIM compliant formats. Currently not an Open Source tool for this.

11:30: Craig: One of the challenges will be how much we can count on  
having/getting 'canonical' model representations.

Martin M: Brought up the GridLAB-D Modern Grid Initiative Feeder study  
(a document) and subsequent definition of 24 representative models.

Craig: Development of IEC 61968/61970 "Wires" model as an effort in  
this direction,

Steffen: There is a need to define 'some' topologies that will used as  
standards and which other canonical feeders can be compared...

Craig: Different solns from different solvers - These will need to be  
studied to ensure 'convergence' or 'like' solutions and results.

See OpenSG mail archive for Steffen's PyPower e-mail.

11:35 - Craig: Reviewed and re-introduced "Model decomposition and modular  
modeling/simulation framework" (Mack McKenzie)

Study of several models and simulations in a single domain (e.g.  
distribution?) and analysis and mapping of purpose, ontologies,  
aspects, interfaces, etc. Extraction of principles for the design of a  
modular modeling/simulation framework.

Enabling variable fidelity and granularity as needed for different  
Simulation objectives...

Steffen has agreed to pick up where 'we' left off:

Steffen: This is a very large and very ambitious task.  
Plan to leverage the results of the Tools Survey to help define the  
problem and soln space - in order to establish Requirements  
definitions.

The 'goal' being a reference architecture for doing SG Simulations?

Craig: There is a BIG need for integrating Communications and  
Information Systems with the Power Sims

EPRI Co-Simulation paper: ***Modeling Smart Grid Applications with Co-Simulation.***

Ron Cunningham: The need for 'Study Architectures' as requirements for future SG architecture:

The need to bridge Power and Communications domains being critically important in defining meaningful architectures... and there is also a need for supplementing the existing tool sets with new capabilities...

Craig: This is the challenge going forward! In addition to the other requirements discussed the overarching challenge will be integrating mathematical models for solvers with the additional Communication dimension.

Emphasized the importance of Steffen's efforts to try and move 'this' forward.

Steffen: Acknowledged the necessity for Comms as an integral component.

11:55 - Craig/Mark Chapman: Reference to the NIST/PAP 2.0 work on Communication Sims.

Asked for input from the group on problems that need to be addressed.

12:00 - Call for any new WG business?

Craig: A reminder about the upcoming IEEE Conference on SG Communications (October 17 - 20 Brussels, Belgium). Noted the great work by Chris Develder (Ghent University) in support of this event:

- Static and dynamic models for generators, transmission & distribution system components, and loads
- Steady state & transient simulation of the grid
- Integration of renewable generation and bulk-energy storage technologies to the grid
- Retail Market Competition, Dynamic Pricing & Demand Response
- Impact of Wholesale Market Competition
- Distributed Energy Resources, Micro-Grids, Distributed Storage, and Electric Vehicles
- Modeling of communication network characteristics and protocols
- Smart Grid Data Analytics
- Generation, Load, and Price forecasting in deregulated markets
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12:00 - Call for any additional items?

Meeting adjourned.