

Broadband over Power Line Meeting Notes
IEEE, Piscataway, NJ
20 July 2004

Revised 23 August 2004

The Meeting Chair Dujour, Alexander D. Gelman, began the meeting at 9:00 am. All attendees were asked to introduce themselves and provide a brief background statement.

1. Formulation of a mission statement for the group.

The following mission statement was discussed and agreed upon by all present.

The mission of this group is to draft BoPL R&D scenarios and establish a scope and produce recommendations for standardization at IEEE-SA and relevant positioning with respect to other industry and standards bodies.

The group discussed identification of stakeholders, core technology, global players, and the possible development of an IEEE white paper for what this group sees in research and development.

Among next steps possibility is to produce a White Paper on BoPL. It should indicate a united IEEE position on the state of technology, service and supplier value chains and IEEE-SA's role in standardization of core technologies

2. Position Statements. Presentations or positions were given by the following:

- Utilities – Mike Macenka – PPL Electric Utilities
- IEEE-ComSoc - *Alex Gelman*
Target: Increase a perceived value of ComSoc to the industry by projecting relevance of ComSoc in later phases of Intellectual Property creation value chain
Approach:
 - Sponsor standardization within IEEE-SA of core technologies and running technical activities in conjunction with IEEE-SA groups
 - Offer technical activities in conjunction and in sync with IEEE-SA WGs
 - Facilitate industry's IPR value chain evolution
- IEEE-EMC – The EMC Society will provide future participation; a representative was not available for this meeting.
- IEEE-PES - *John Newbury*
John Newbury, chair of PES Power Systems Communication Committee, reported that a Project Authorization Request (PAR) for IEEE P1675, Standard for Broadband over Power Line Hardware, was approved by the IEEE Standards Board in June. The scope is limited to providing testing and verification standards for the commonly used hardware, primarily couplers and enclosures, for Broadband over Power Line (BPL) installations, and providing standard installation methods to ensure compliance with applicable codes and standards. A joint meeting of the Power Systems Communication Committee and Power System Relaying Committee will be held in January, 2005.

John also reported on the 9th International Symposium on Power-Line Communications and its Applications to be held in Vancouver, British Columbia, 6-8 April 2005. See http://conferences.ece.ubc.ca/isplc2005/frame_m_home.htm for additional information.

- HomePlug – *Oleg Logvinov*

Mr. Logvinov stated that HomePlug standards development is an open process and invited all present to participate.

1. HomePlug 1.0 technology is already present on the electric wires and it is important to take this fact into the account. The desire to create a harmonized portfolio of technologies, technologies that can peacefully co-exist, motivates HomePlug to develop a BPL specification.
2. HomePlug membership is open to all interested parties.
3. Currently, HomePlug technology is the only powerline communication technology that has a multi-vendor support.
4. HomePlug Alliance has demonstrated the ability to develop powerline communication specifications. HomePlug 1.0 is commercially available and HomePlug AV is poised for a debut in a near future.
5. HomePlug believes that it is important to focus on what is the core expertise (development centered on PHY and MAC in HomePlug's case) and collaborate with other organizations to build the industry. HomePlug is open to such collaborations and welcomes all interested parties.

- Telcordia Technologies – *Jeff Boksiner*

Mr. Boksiner stated that safety issues need to be looked at, and suggested that existing standards and their revision processes should be used to address new issues (e.g., tentative interim amendments [TIA] for the National Electrical Safety Code [NESC]). Other standards such as the National Electrical Code and UL 60950 are affected. He also recommended that IEEE P1675 coordinate with the NESC.

- ARRL - *Paul Rinaldo*

ARRL, with 160,000 members in the U.S, is concerned only with potential interference. Mr. Rinaldo indicated that some systems shut down as a result of interference. He referred to Notice of Proposed Rulemaking, FCC ET Docket 04-37, issued in February 2004.

- Ambient -- *Yehuda Cern*

Mr. Cern's presentation addressed existing safety standards and recommended adoption of sections of existing standards, e.g. insulators, surge withstand levels, as well as recommending compatibility with existing lineman practice at utilities.

- PLCA – *Alan Shark*

A PLCA meeting will be held 28-29 Oct Alexandria, VA. Mr. Shark extended an invitation to all present to become a member of PLCA, www.plca.net.

- Victor Dominguez – *DS2*

- DS2 fully supports and strongly encourages IEEE to jointly develop with ETSI the standards that the plc industry and the market require
- A joint committee between IEEE and ETSI should be created.
- Parallel simultaneous approach, not sequentially, with a universal view

- IEEE and ETSI have a unique opportunity to jointly satisfy the requirements for plc standards worldwide that the industry and market require; huge synergies
- Top down approach—
 - co-existence first
 - continue with detailed interoperability standards
 - notching
- IEEE should liaise with other industry orgs (Home Plug, PCLA, PCLForum, PLC-J, PLC-K, PUA, UPLC, etc.)
- CENELEC may develop Installation practice, immunity

3. Discussion Items: BoPL – The Big Picture and IEEE-SA Strategy

- Service Value Chain
- Supplier Value Chain
- Standardization Value Chain
- IEEE-SA Scope

Discussion took place regarding 1) the definition of broadband over powerline and how it will drive the scope of this initiative; and 2) defining what this group is (i.e., interest group, advisory group).

PLC technologies have as a subset:

- BoPL = access
- In-home

Alex Gelman made a motion to change “BPL” with “PLC (Access and Associated Technologies). This motion was later reversed for consistency, since the FCC uses BPL in its terminology.

The group considered as a discussion item the following:

Among next steps possibility is to produce a White Paper on BoPL. It should indicate a united IEEE position on the state of technology, service and supplier value chains and IEEE-SA's role in standardization of core technologies

The group agreed to call this effort a Study Group (ad hoc). It may recommend standards, working groups, and will issue its findings and deliberations in the form of a recommendation.

3.1 Discovery/positions of stakeholders (include summary of each position) – Alan Shark

- Amateur radio concerns (Paul Rinaldo)
- Safety (Yehuda Cern)
- Access/in-home compatibility (Oleg Logvinov)
- Service management (ISP, utility, ASP, CP supplier) (Brian Wenger)
- Compatibility with other wireline services (DSL, cable, etc.) (Jeff Boksiner)

- Technology supplies (open call) (Jim Mollenkopf)
- Compatibility with utility distribution systems (Mike Macenka)
- PLC professional profile (John Newbury)
- Security and privacy, authentication (Brian Wenger)
- Compatibility with wireless services (Fred Marks*)

*tentative

3.2 BPL

3.2.1 Use Cases

- Consumer (Alex Gelman)
- Business (Keith Brightfield)
- Utility services (Ram Rao)

3.2.2 Possible service architectures and service value chains (Keith Brightfield) (open access, last mile, transformer bypass vs transmission through the transformer, backhaul, resilience)

3.2.3 System elements and associated possible service value chains (Victor Dominguez Richards) (OSS, EMS, NMS, data collection, ISP equipment, couplers, network nodes, CPE, chip sets, power distribution equipment [separable connectors, power cable, fuse disconnect] OSS = provisioning installation, fault isolation, network planning, SLA's

3.2.4 PLC and other applicable standards and specifications map (Aron Viner) regulatory map (quantifiable data only – no value add)

3.3 Recommendation for IEEE-SA role (Terry Burns)

Existing projects (PES P1675; others?)

Future projects

Are there clear identified regulations and what rules or standards apply?

What about personnel regulations?

4. Next Steps

Discussion took place on accomplishing the next steps. Leaders with items as assigned in item 3 above may form working groups to develop the required text; group leaders will provide the preliminary draft of each section and summary presentations made at the next meeting

The next meeting will be held Wednesday, October 13, at the IEEE in Piscataway, NJ. (Note: It was determined by staff that meeting in conjunction with Power System Conference and Expo, Grand Hyatt, New York, will not be possible).

Other subsequent meetings:

IEEE PSRC in January, 2005

PLC conf in Vancouver in April, 2005

PES General Meeting meeting in San Francisco, June, 2005

As no overwhelming support was received for an overall and ongoing chair of this effort, Alan Shark and Alex Gelman agreed to co-chair the next meeting, with each meeting to be chaired on a rotational basis, with the former chair du jour assisting as co-chair.

The meeting was adjourned at 5:15 p.m.