

# P1901

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**Submitter Email:** jean-philippe.faure@progilon.com

**Type of Project:** Modify Existing Approved PAR

**PAR Request Date:** 19-Oct-2009

**PAR Approval Date:** 09-Dec-2009

**PAR Expiration Date:** 31-Dec-2011

**Status:** Modification to a Previously Approved PAR

**Root PAR:** P1901 **Approved on:** 09-Jun-2005

**Project Record:** 1901

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**1.1 Project Number:** P1901

**1.2 Type of Document:** Standard

**1.3 Life Cycle:** Full Use

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**2.1 Title:** Standard for Broadband over Power Line Networks: Medium Access Control and Physical Layer Specifications

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**3.1 Working Group:** Broadband Over Power Lines PHY/MAC Working Group (COM/SC/BPLPHMAC)

**Contact Information for Working Group Chair**

**Name:** Jean Philippe Faure

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**Contact Information for Working Group Vice-Chair**

None

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**3.2 Sponsoring Society and Committee:** IEEE Communications Society/Standards Committee (COM/SC)

**Contact Information for Sponsor Chair**

**Name:** Alexander Gelman

**Email Address:** adg@ieee.org

**Phone:** 609 644 2097

**Contact Information for Standards Representative**

**Name:** Alexander Gelman

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**4.1 Type of Ballot:** Entity

**4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot:** 07/2010

**4.3 Projected Completion Date for Submittal to RevCom:** 07/2011

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**5.1 Approximate number of entities expected to be actively involved in the development of this project:** 50

**5.2 Scope:** The project defines a standard for high speed (>100 Mbps at the physical layer) communication devices via electric power lines, so called Broadband over Power Line (BPL) devices. The standard uses transmission frequencies below 100 MHz. This standard is usable by all classes of BPL devices, including BPL devices used for the first-mile/last-mile connection (<1500m to the premise) to broadband services as well as BPL devices used in buildings for LANs, Smart Energy applications, transportation platforms (vehicle) applications, and other data distribution (<100m between devices). This standard focuses on the balanced and efficient use of the power line communications channel by all classes of BPL devices, defining detailed mechanisms for coexistence and interoperability between different BPL devices, and ensuring that desired bandwidth and quality of service may be delivered. The standard addresses the necessary security questions to ensure the privacy of communications between users and allow the use of BPL for security sensitive services. This standard is limited to the physical layer and the medium access sub-layer of

**Old Scope:** The project will develop a standard for high speed (>100 Mbps at the physical layer) communication devices via alternating current electric power lines, so called Broadband over Power Line (BPL) devices. The standard will use transmission frequencies below 100 MHz. This standard will be usable by all classes of BPL devices, including BPL devices used for the first-mile/last-mile connection (<1500m to the premise) to broadband services as well as BPL devices used in buildings for LANs and other data distribution (<100m between devices). This standard will focus on the balanced and efficient use of the power line communications channel by all classes of BPL devices, defining detailed mechanisms for coexistence and interoperability between different BPL devices, and ensuring that desired bandwidth and quality of service may be delivered. The standard will address the necessary security questions to ensure the privacy of communications between users and allow the use of BPL for security sensitive services. This standard is limited to the physical layer and the medium access sub-layer of the data link layer, as

the data link layer, as defined by the International Organization for Standardization (ISO) Open Systems Interconnection (OSI) Basic Reference Model.

defined by the International Organization for Standardization (ISO) Open Systems Interconnection (OSI) Basic Reference Model. The effort will begin with an architecture investigation, and this will form the basis for detailed scope of task groups that will work within P1901 to develop the components of the final standard.

**5.3 Is the completion of this standard dependent upon the completion of another standard?:** No

**5.4 Purpose:** New modulation techniques offer the possibility to use the power lines for high speed communications. This new high speed media is open, and locally shared by several BPL devices. Without an independent, openly defined standard, BPL devices serving different applications will conflict with one another and provide unacceptable service to all parties. The standard will provide a minimum implementation subset which allows the fair coexistence of the BPL devices. The full implementation will provide the interoperability among the BPL devices, as well as interoperability with other networking protocols, such as bridging for seamless interconnection via 802.1. It is also the intent of this effort to quickly progress towards a robust standard so powerline applications may begin to impact the marketplace. The standard will also comply with EMC limits set by national regulators, so as to ensure successful coexistence with wireless and telecommunications systems.

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**5.5 Need for the Project:** Coexistence of the BPL devices on the same power lines is a basic need of the BPL market. Devices from different vendors should continue to operate properly while using the same power lines. Interoperability will support the growth of the emerging BPL market. It will benefit the consumer market, enabling consumers to use devices from different vendors and warranting the availability of lower cost equipment. Interoperability will also benefit the access market, allowing low cost extensions of the services in the houses. It also will benefit the electric utility industry, enabling power companies to improve the efficiency and reliability of electricity distribution by creating low-cost, real-time connections across the distribution system, a capability rarely deployed today.

**5.6 Stakeholders for the Standard:** utility companies, home owners with home networks, broadband service providers, consumer electronics companies, internet service providers, telecommunication companies, transportation industry

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## Intellectual Property

**6.1.a. Is the Sponsor aware of any copyright permissions needed for this project?:** No

**6.1.b. Is the Sponsor aware of possible registration activity related to this project?:** Yes

**If yes please explain:** There may be a need for registration of device identities by the IEEE Registration Authority. It is likely this will use existing services such as the OUI for unique manufacturer ID.

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**7.1 Are there other standards or projects with a similar scope?:** No

## 7.2 International Activities

### a. Adoption

**Is there potential for this standard (in part or in whole) to be adopted by another national, regional or international organization?:** Do Not Know

**Organization:**

**Technical Committee Name:**

**Technical Committee Number:**

**Contact Name:**

**Phone:**

**Email:**

### b. Joint Development

**Is it the intent to develop this document jointly with another organization?:** No

### c. Harmonization

**Are you aware of another organization that may be interested in portions of this document in their standardization development efforts?:** Yes

**Organization:** ITU-T

**Technical Committee Name:** SG15

**Technical Committee Number:**

**Contact Name:** Richard Stuart

**Phone:**

**Email:**

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**8.1 Additional Explanatory Notes (Item Number and Explanation):** Regarding the change to the AC lines, the working group believes this is only editorial because the implementation is also applicable to DC lines. Regarding the addition of "Smart Energy," and "transportation platforms (vehicle)" this is also editorial because the draft is fully capable of supporting smart grid and transportation applications today. Since the working group is addressing these applications, it wants to ensure that the market is aware of the standard's applicability. The last sentence was removed due to the rule that the scope in the document shall exactly match the scope in the PAR.