P1901

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Type of Project: Revision to IEEE Standard 1901-2010
PAR Request Date: 15-Mar-2019
PAR Approval Date: 21-May-2019
PAR Expiration Date: 31-Dec-2023
Status: PAR for a Revision to an existing IEEE Standard
Root Project: 1901-2010

1.1 Project Number: P1901
1.2 Type of Document: Standard
1.3 Life Cycle: Full Use

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

3.1 Working Group: Broadband Over Power Lines PHY/MAC Working Group (COM/PLC/BPLPHMAC)
Contact Information for Working Group Chair
Name: Jean Philippe Faure
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Contact Information for Working Group Vice-Chair
None

3.2 Sponsoring Society and Committee: IEEE Communications Society/Power Line Communications (COM/PLC)
Contact Information for Sponsor Chair
Name: Jean Philippe Faure
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Contact Information for Standards Representative
None

4.1 Type of Ballot: Entity
4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot: 09/2019
4.3 Projected Completion Date for Submittal to RevCom
Note: Usual minimum time between initial sponsor ballot and submission to Revcom is 6 months.: 05/2020

5.1 Approximate number of entities expected to be actively involved in the development of this project: 10
5.2 Scope: The scope of this standard is to define medium access control (MAC) and physical layer (PHY) specifications for high-speed (>100 Mbps at the physical layer) communication devices via electric power lines, so-called broadband over power line (BPL) devices as well as lower speed Internet of Things communication devices. This standard uses transmission frequencies below 100 MHz. It is usable by all classes of BPL devices, including BPL devices used for the first-mile/last-mile connection (<1500 m to the premise) to broadband services as well as BPL devices used in buildings for local area networks (LANs), Smart Energy / Smart Grid applications, transportation platform (vehicle) applications, Internet of Things applications and other data distribution (<100 m 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 assuring that desired bandwidth and quality of service may be delivered. The standard addresses the necessary security questions to provide privacy of communications between users and allow the use of BPL for security-sensitive services. It is limited to

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the physical layer and the medium access sublayer of the data link layer, as defined by the International Organization for Standardization (ISO) Open Systems Interconnection (OSI) Basic Reference Model. BPL for security-sensitive services. It is limited to the physical layer and the medium access sublayer of the data link layer, as defined by the International Organization for Standardization (ISO) Open Systems Interconnection (OSI) Basic Reference Model.

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 medium 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 that allows fair coexistence of the BPL devices. The full implementation will provide interoperability among BPL devices, as well as interoperability with other networking protocols, such as bridging for seamless interconnection via IEEE Std 802.1X-2010.1 It is also the intent of this effort to progress quickly toward a robust standard so power line applications may begin to impact the marketplace. The standard also complies with electromagnetic compatibility (EMC) limits set by national regulators, so as to enable successful coexistence with wireless and telecommunications systems.

5.5 Need for the Project: The reason for this project is to incorporate amendment IEEE P1901a into IEEE 1901-2010 and to maintain IEEE 1901 active (It is up for the 10-year review cycle). It will also address errors and ambiguities in the description of existing functionality.

5.6 Stakeholders for the Standard: Electric utilities, home owners with home networks, broadband service providers, consumer electronics companies, internet service providers, telecommunication companies, transportation industry, equipment manufacturers, silicon manufacturers, software developers, IoT developers, implementers and operators and Smart City implementers.

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?: No

7.1 Are there other standards or projects with a similar scope?: Yes
If Yes please explain: 1901, 1901.1 and 1901.2 form a family of PLC standards. Coexistence is ensured using IEEE 1901-2010 Inter-System Protocol (ISP).

and answer the following

  Sponsor Organization: COM/PLC
  Project/Standard Number: 1901.1 and 1901.2
  Project/Standard Date:
  Project/Standard Title: IEEE Std 1901.1-2018 Standard for medium frequency (less than 15 MHz) Power Line Communications for Smart Grid Applications
  IEEE Std 1901.2-2013 Standard for Low-Frequency (less than 500 kHz) Narrowband Power Line Communications for Smart Grid Applications

7.2 Joint Development
  Is it the intent to develop this document jointly with another organization?: No

8.1 Additional Explanatory Notes: #5.5 IEEE P1901a Standard for Broadband over Power Line Networks: Medium Access Control and Physical Layer Specifications Amendment: Enhancement for Internet of Things applications