P802.15.12

This PAR is valid until 31-Dec-2020.

PAR Extension Request Date:
PAR Extension Approval Date:
Extension Request Submitter Email:
Number of Previous Extensions Requested: 0

1. Number of years that the extension is being requested: 2
2. Why an Extension is Required (include actions to complete): Good progress has been made but more time is needed to pull things together. Additionally the covid issues have not helped with moving things forward which is why 2 years are being requested rather than one.
3.1. What date did you begin writing the first draft: 11 Nov 2018
3.2. How many people are actively working on the project: 20
3.3. How many times a year does the working group meet?
   In person: 6
   Via teleconference: 6
3.4. How many times a year is a draft circulated to the working group: 6
3.5. What percentage of the Draft is stable: 70%
3.6. How many significant work revisions has the Draft been through: 4
4. When will/did initial Standards Association Balloting begin: Nov 2021

When do you expect to submit the proposed standard to RevCom: Jul 2022
Has this document already been adopted by another source? (if so please identify) No

For an extension request, the information on the original PAR below is not open to modification.

Submitter Email: bheile@ieee.org
Type of Project: New IEEE Standard
Project Request Type: Initiation / New
PAR Request Date: 19 Mar 2016
PAR Approval Date: 12 May 2016
PAR Expiration Date: 31 Dec 2020
PAR Status: Active

1.1 Project Number: P802.15.12
1.2 Type of Document: Standard
1.3 Life Cycle: Full Use

2.1 Project Title: Upper Layer Interface (ULI) for IEEE 802.15.4 Low-Rate Wireless Networks

3.1 Working Group: Wireless Personal Area Network (WPAN) Working Group(C/LM/802.15 WG)
   3.1.1 Contact Information for Working Group Chair:
   Name: Robert Heile
   Email Address: bheile@ieee.org
   3.1.2 Contact Information for Working Group Vice Chair:
   Name: PATRICK KINNEY
   Email Address: pat.kinney@kinneyconsultingllc.com
3.2 Society and Committee: IEEE Computer Society/LAN/MAN Standards Committee(C/LM)
   3.2.1 Contact Information for Standards Committee Chair:
   Name: Paul Nikolich
   Email Address: p.nikolich@ieee.org
   3.2.2 Contact Information for Standards Committee Vice Chair:
   Name: James Gilb
   Email Address: gilb@ieee.org
   3.2.3 Contact Information for Standards Representative:
   Name: James Gilb
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4.1 Type of Ballot: Individual
4.2 Expected Date of submission of draft to the IEEE SA for Initial Standards Committee Ballot:

4.3 Projected Completion Date for Submittal to RevCom: Aug 2018

5.1 Approximate number of people expected to be actively involved in the development of this project: 30

5.2 Scope of proposed standard: This standard defines an Upper Layer Interface (ULI) sublayer in Layer 2 (L2), between Layer 3 (L3) and the IEEE 802.15.4 Media Access Control (MAC) sublayer. The ULI provides data and management service access points (SAPs) for interface to the IEEE 802.15.4 MAC. The ULI adapts L3 protocols and provides operational configuration including network and radio regulation requirements of the IEEE 802.15.4 MAC. Furthermore, the ULI integrates optional upper Layer 2 functionalities focused on interfacing to the IEEE 802.15.4 MAC such as Key Management Protocols (KMPs), L2 routing (L2R) protocols, L2 fragmentation, and Internet Engineering Task Force (IETF) IPv6 over the TimeSlotted Channel Hopping (TSCH) mode of IEEE Std 802.15.4 (6TiSCH) Operation Protocol (6TOP). Finally, the ULI provides protocol differentiation, using mechanisms such as EtherType Protocol Differentiation (EPD) to support multiple, diverse higher layer protocols, and header compression.

5.3 Is the completion of this standard contingent upon the completion of another standard? No

5.4 Purpose: This standard defines an upper layer interface to support and harmonize the IEEE 802.15.4 ancillary functionality, e.g. fragmentation, protocol differentiation and configuration.

5.5 Need for the Project: As IEEE 802.15.4 devices have become widely deployed, deficiencies in the IEEE Std 802.15.4 became apparent as an expanding set of applications were addressed. To address these deficiencies numerous L2 protocols were independently developed to interface to the IEEE 802.15.4 MAC sublayer. These L2 protocols, such as KMP, L2R, and 6TOP often replicate ancillary functionality, e.g. fragmentation and protocol differentiation, in an inconsistent and often incompatible manner.

This project is needed to address these issues as an independent standard for use with IEEE Std 802.15.4. It will define and organize areas of operation that were intentionally left out of the IEEE 802.15.4 MAC in order to maintain simplicity and small size, but which are now needed in a growing set of applications. Providing an independent standardized approach eliminates the need for ad hoc work arounds, enables consistent and compatible implementations where needed, and generally makes IEEE Std 802.15.4 easier to use in an IP environment without requiring any changes to the 15.4 standard itself.

5.6 Stakeholders for the Standard: The stakeholders include silicon vendors, manufacturers and users of telecom, medical, environmental, energy, and consumer electronics equipment and manufacturers and users of equipment involving the use of wireless sensor and control networks

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6.1 Intellectual Property

   6.1.1 Is the Standards Committee aware of any copyright permissions needed for this project? No

   6.1.2 Is the Standards Committee aware of possible registration activity related to this project? Yes

   Explanation: As noted in the scope and need for the project, this project will use EPD for multiple higher layer protocols. Values of the Multiplex ID below 1500, as defined in IEEE Std 802.15.9 Key Management Protocol, will be administered by the IEEE 802.15 Assigned Number Authority (ANA).

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

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

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8.1 Additional Explanatory Notes : 5.2 Scope:

--EtherType Protocol Differentiation is defined in IEEE Std 802-2014: IEEE Standard for Local and Metropolitan Area Networks: Overview and Architecture

--IEEE 802.15.4: Low-Rate Wireless Networks

--IEEE 802.15.9: Recommended Practice for Transport of Key Management Protocol (KMP) Datagrams