P802.15.3d

Submitter Email: bheile@ieee.org
Type of Project: Modify Existing Approved PAR
PAR Request Date: 15-Sep-2015
PAR Approval Date:
PAR Expiration Date:
Status: Unapproved PAR, Modification to a Previously Approved PAR for an Amendment
Root PAR: P802.15.3d **Approved on:** 27-Mar-2014

1.1 Project Number: P802.15.3d
1.2 Type of Document: Standard
1.3 Life Cycle: Full Use

2.1 Title: Standard for Information technology-- Local and metropolitan area networks-- Specific requirements-- Part 15.3: Wireless Medium Access Control (MAC) and Physical Layer (PHY) Specifications for High Rate Wireless Personal Area Networks (WPAN) Amendment for a 100Gbps wireless switched point-to-point physical layer

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3.1 Working Group: Wireless Personal Area Network (WPAN) Working Group (C/LM/WG802.15)
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Name: Robert Heile
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3.2 Sponsoring Society and Committee: IEEE Computer Society/LAN/MAN Standards Committee (C/LM)
Contact Information for Sponsor Chair
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4.1 Type of Ballot: Individual
4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot: 03/2017
4.3 Projected Completion Date for Submittal to RevCom: 10/2017

5.1 Approximate number of people expected to be actively involved in the development of this project: 100

5.2.a. Scope of the complete standard: This standard defines PHY and MAC specifications for high data rate wireless connectivity (typically over 200 Mbps) with fixed, portable and moving devices. Data rates are high enough to satisfy a set of consumer multimedia industry needs, as well as to support emerging wireless switched point-to-point and high rate close proximity point to point applications.

Changes in scope: This ~~project~~standard ~~will~~defines ~~define the~~ PHY and MAC specifications for high data rate wireless connectivity (typically over 200 Mbps) with fixed, portable and moving devices. Data rates ~~will~~are ~~be~~ high enough to satisfy a set of consumer multimedia industry needs, ~~and~~as well as to support emerging wireless switched point-to-point and high rate close proximity point to point applications.

5.2.b. Scope of the project: This amendment defines a wireless switched point-to-point physical layer to IEEE Std. 802.15.3 operating at a nominal PHY data rate of 100 Gbps with fallbacks to lower data rates as needed. Operation is considered in bands from 252 GHz to 325 GHz at ranges as short as a few centimeters and up to several 100m. Additionally, modifications to the Medium Access Control (MAC) layer, needed to support this new physical layer, are defined.

Changes in scope of the project: This amendment defines a wireless switched point-to-point physical layer to IEEE Std. 802.15.3 operating at a nominal PHY data rate of 100 Gbps with fallbacks to lower data rates as needed. Operation is considered in bands from ~~60~~252 GHz ~~up~~ to ~~and~~325 ~~including optical wireless~~GHz at ranges as short as a few centimeters and up to several 100m. Additionally, modifications to the Medium Access Control (MAC) layer, needed to support this new physical layer, are defined.

5.3 Is the completion of this standard dependent upon the completion of another standard: Yes
If yes please explain: This project is dependent on the completion of the 15.3 Revision1, which will implement the conversion of 15.3 from 64 to 48 bit MAC addresses needed by this amendment..

5.4 Purpose: The purpose of this standard is to provide for low complexity, low cost, low power consumption, high data rate wireless connectivity among devices supporting a variety of applications such as a set of consumer multimedia industry needs, wireless switched point-to-point applications in data centers, wireless backhaul/fronthaul intra-device communications and a wide variety of additional use cases such as rapid large multimedia data downloads and file exchanges between two devices in close proximity, including between mobile devices and stationary devices (kiosks, ticket gates, etc.), and/or wireless data storage devices.

Changes in purpose: The purpose of this standard is to provide ~~a standard~~ for low complexity, low cost, low power consumption, ~~and~~ high data rate wireless connectivity among devices~~.~~ ~~Data~~supporting ~~rates~~a ~~will~~variety ~~be~~of ~~high~~applications ~~enough~~such ~~to~~as ~~satisfy~~ a set of consumer multimedia industry needs, ~~and to support emerging~~ wireless switched point-to-point applications in data centers, wireless backhaul/fronthaul intra-device ~~communication~~communications and ~~kiosk~~a ~~downloading~~wide variety of additional use cases such as rapid large multimedia data downloads and file exchanges between two devices in close proximity, including between mobile devices and stationary devices (kiosks, ticket gates, etc.), and/or wireless data storage devices.

5.5 Need for the Project: In data centers wireless links will make frequent reconfiguration easier and more cost-effective. In the case of backhaul and fronthaul, wireless solutions will reduce costs for the case when installing a fiber network is not cost-effective. In the cases of close-proximity kiosk-downloading and intra-device communication, a minimum data rate achievable with high probability, is required, which should be possible because of the operation in a controlled environment. No wireless standard with all these properties, operating at a primary data rate of 100 Gbps, with fallbacks to lower data rates as required and suitable for operation in a switched point-to-point-configuration exists today.

5.6 Stakeholders for the Standard: Chip vendors, server vendors, radio frequency (RF) and optical component manufacturers, equipment manufacturers, enterprise infrastructure providers and wireless operators.

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

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7.1 Are there other standards or projects with a similar scope?: No
7.2 Joint Development
Is it the intent to develop this document jointly with another organization?: No

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8.1 Additional Explanatory Notes (Item Number and Explanation): 5.2a: The scope of the standard has been updated to be the same as the scope of the completed standard as it appears in the approved 15.3 Revision1 PAR

5.2b: The project scope has been modified to more tightly specify the intended the frequency bands of operation for this application.

5.2b: In this context the term switching is used to describe reconfiguration of a set of elsewise fixed wireless links. This means that the physical beams of a device at one end of the wireless links are switched between stationary devices at the other end of the links resulting in an different configuration. Fronthaul is the link between the PHY control unit of a base station and a remote radio unit.

5.4: The purpose of the standard has been updated to be the same as the purpose of the completed standard as it appears in the approved 15.3 Revision1 PAR

5.5: In close proximity kiosk-downloading the link distance is at the order of a few centimeters.