P802.16t

Submitter Email: tim.godfrey@ieee.org
Type of Project: Amendment to IEEE Standard 802.16-2017
PAR Request Date: 06-Oct-2019
PAR Approval Date:
PAR Expiration Date:
Status: Unapproved PAR, PAR for an Amendment to an existing IEEE Standard

1.1 Project Number: P802.16t
1.2 Type of Document: Standard
1.3 Life Cycle: Full Use

2.1 Title: Standard for Air Interface for Broadband Wireless Access Systems
Fixed and Mobile Wireless Access in Narrowband Channels

3.1 Working Group: Broadband Wireless Access Working Group (C/LM/WG802.16)
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3.2 Sponsoring Society and Committee: IEEE Computer Society/LAN/MAN Standards Committee (C/LM)
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3.3 Joint Sponsor: IEEE Microwave Theory and Techniques Society/Standards Coordinating Committee (MTT/SCC)
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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: 03/2022
4.3 Projected Completion Date for Submittal to RevCom
Note: Usual minimum time between initial sponsor ballot and submission to Revcom is 6 months.: 10/2022

5.1 Approximate number of people expected to be actively involved in the development of this project: 15
5.2.a. Scope of the complete standard: This standard specifies the air interface, including the medium access control layer (MAC) and physical layer (PHY), of combined fixed and mobile point-to-multipoint broadband wireless access (BWA) systems providing multiple services. The MAC is structured to support multiple PHY specifications, including WirelessMAN-SC,

Changes in scope: This standard specifies the air interface, including the medium access control layer (MAC) and physical layer (PHY), of combined fixed and mobile point-to-multipoint broadband wireless access (BWA) systems providing multiple services. The MAC is structured to support ~~the~~multiple PHY specifications, including WirelessMAN-SC, ~~WirelessMANOFDM~~WirelessMAN-OFDM, and

WirelessMAN-OFDM, and WirelessMAN-OFDMA PHY specifications, each suited to a particular operational environment.

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5.2.b. Scope of the project: This project specifies ~~Time Division Duplexing (TDD)~~ operation in licensed spectrum with channel bandwidths greater than or equal to 5 kHz and less than 100 kHz. The project will specify a new PHY, and changes to the MAC as necessary to support the PHY. The amendment is frequency independent but focuses on spectrum less than 2 GHz. The range and data rate supported by the narrower channels are commensurate with those of the base standard, as scaled by the reduced channel bandwidth. The project also amends IEEE Std 802.16 as required to support aggregated operation in adjacent and non-adjacent channels.

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

5.4 Purpose: This document will not include a purpose clause.

Changes in purpose: This standard enables rapid worldwide deployment of innovative, cost-effective, and interoperable multivendor broadband wireless access products, facilitates competition in broadband access by providing alternatives to wireline broadband access, encourages consistent worldwide spectrum allocation, and accelerates the commercialization of broadband wireless access systems.

5.5 Need for the Project: Mission critical entities have a strong preference for private, licensed networks for their data communications needs. Licensed channels from 5 kHz to 1 MHz may be available from the FCC and other regulators, or may be purchased in secondary markets at a lower cost than commercial channels. Examples of operating frequencies include 160 MHz, 450 MHz, 700 MHz, and 900 MHz. Furthermore, VHF/UHF channels have superior propagation characteristics requiring less infrastructure and are capable of meeting capacity needs of private networks. The amendment facilitates the development of innovative, cost-effective, and interoperable multivendor products for private licensed wireless access systems for mission critical networks. Applications include smart grids supporting generation, transmission, and distribution; field area networks; smart fields and smart pipes for oil and gas; intelligent transportation for rail systems; and federal, state and local uses for homeland security, environmental and seismic monitoring and military communications.

5.6 Stakeholders for the Standard: Stakeholders include users and customers in various markets, including electric, water, and natural gas utilities, oil and gas companies, transportation including commercial and public rail, and public sector entities including federal, state, and local governments. Stakeholders also include spectrum license holders, equipment and chipset manufacturers with an interest in standardized products to achieve economies of scale.

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?: Yes

If Yes please explain: Narrowband Internet of Things (IoT) is part of the family of 3GPP standards first included in Release 13. NB-IoT is designed to operate in blocks of spectrum 180 KHz wide. NB-IoT cannot operate in contiguous spectrum less than 180 KHz.

and answer the following

Sponsor Organization: 3GPP

Project/Standard Number: Release 13

Project/Standard Date: 06-Jan-2016

Project/Standard Title: LTE Advanced Pro

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: 5.2.a In the names of the WirelessMAN PHY alternatives, OFDM is used to signify Orthogonal Frequency-Division Multiplexing, OFDMA is used to signify Orthogonal Frequency-Division Multiple Access, and SC is used to signify Single Carrier.

5.2.b Private Land Mobile Radio (PLMR) channels are typically allocated with a channel size of 12.5 KHz, but the size may vary by regulatory region and application.

5.2b Aggregated operation means combining adjacent or non-adjacent channels (less than 100 kHz) into a single larger logical channel

5.5 The term "private wireless access" is used to describe wireless access systems in which the spectrum, infrastructure, and terminal devices are all privately owned by a business or entity for purposes other than offering the wireless access as a commercial product. The term "commercial channels" refers to spectrum used by a cellular operator to provide commercial wireless access and services.

5.5 IEEE 802.16, and thus this amendment, do not specify specific operating frequencies.

7.1 The following abbreviations are used - 3GPP: 3rd Generation Partnership Project; IoT: Internet of Things.