

IEEE 802.11 TGbd Update for ITU-T CITS

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IEEE 802.11 TGbd Chair

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Background

- **In the ITU-T CITS conference in Mar 2019, IEEE 802.11bd was firstly introduced to the group.**
 - https://www.itu.int/en/ITU-T/extcoop/cits/Documents/Meeting-20190308-Geneva/10_IEEE%20802.11-TGbd-Introduction.pdf
- **In the ITU-T CITS conference in Oct 2019, the progress of IEEE 802.11bd was updated**
 - https://www.itu.int/en/ITU-T/extcoop/cits/Documents/Meeting-20191028-e-meeting/13_IEEE802.11-TGbd_update_for_CITS.pdf
- **This document provide the update information of the IEEE 802.11bd progress since the latest update.**
- **All information in this document can be obtained from public sources and this document should be understood with the author's personal view.**

Note: “At lectures, symposia, seminars, or educational courses, an individual presenting information on IEEE standards shall make it clear that his or her views should be considered the personal views of that individual rather than the formal position, explanation, or interpretation of the IEEE.” IEEE-SA Standards Board Operation Manual (subclause 5.9.3)

Re-cap of IEEE 802.11bd

- **Formed in Dec 2018**
- **Leadership:**
 - Chair: Bo Sun;
 - Vice Chair: Hongyuan Zhang; Joseph Levy
 - Tech Editor: Bahar Sadeghi
 - Secretary: James Lepp
- **Target:**
 - Develop IEEE P802.11bd amendment standard
- **PAR Duration: Dec 2018 ~ Sep 2021**
- **First meeting: Jan 2019, St. Louis, USA; latest meeting: Jan 2020, Irvine, CA, USA**
- **Public website:** http://www.ieee802.org/11/Reports/tgbd_update.htm
- **Public contributions server:** https://mentor.ieee.org/802.11/documents?is_group=00bd

Key Progress

2 f2f meetings have been held since Oct 2019, to develop 802.11bd spec draft

Averagely two teleconferences between two successive f2f meetings

Over 50 tech submissions presented and discussed since Oct 2019

Over 50 tech motions passed in TGbd to develop 802.11be spec draft

IEEE P802.11bd D0.2 was released assembling consensus of TGbd members

Joint discussion with IEEE 1609 on interface between 802.11bd and upper layer

Important TG documents: https://mentor.ieee.org/802.11/documents?is_group=00bd

TG Document	Baseline Version	Latest Revision
Definition and requirements	11-19/0202r1	11-19/0202r1
Selection Procedure document	11-19/0030r6	11-19/0030r6
Functional Requirement document	11-19/0495r0	11-19/0495r3
Spec Framework document	11-19/0497r0	11-19/0497r5
Liaison response to IEEE VT/ITS 1609 WG	11-19/0437r3	11-19/0437r3
Liaison response to ITU-T CITS	11-19/0843r0	11-19/0843r0
TBbd FRD/SFD Motion Booklet	11-19/0514r0	11-19/0514r14
TGbd Use Case document	11-19/1342r0	11-19/1342r1

Key Technology Features

- **PHY Layer**
 - Re-use 11ac PHY as much as possible.
 - Support backward compatibility with 11p, e.g. keeping 10 MHz L-STF, L-LTF and L-SIG.
 - Support 10 MHz and 20 MHz bandwidth, e.g. 2x down-clock of IEEE 802.11ac 20 MHz and 40 MHz signal.
 - Support LDPC and DCM
 - Support Midamble
 - Support MCS up to 256 QAM.
 - Support Round-Trip-Time Ranging

- **MAC Layer.**
 - Modification adaptive to new NGV PHY.
 - Backward compatible and co-exist with 11p
 - Support 20 MHz channel access
 - Improve SAP interface with upper layer protocols.
 - Support of A-MPDU and A-MSDU

IEEE 802.11bd Timeline

- **PAR approved** Dec 2018
- **First TG meeting** Jan 2019
- **D0.1** Nov 2019
- **D1.0 Letter Ballot** Mar 2020
- **D2.0 LB recirculation** Jul 2020
- **Form Sponsor Ballot Pool** Sep 2020
- **D3.0 LB recirculation** Sep 2020
- **D3.0 unchanged recirculation** Nov 2020
- **Initial Sponsor Ballot (D4.0)** Jan 2021
- **Final 802.11 WG approval** Nov 2021
- **802 EC approval** Nov 2021
- **RevCom and SASB approval** Dec 2021

Note: the IEEE 802.11bd timeline is to be updated in coming Mar meeting

Future Meeting Plan

- **IEEE 802.11 #180, plenary meeting, Mar 15~20, Atlanta, GA, USA**
- **IEEE 802.11 #181, interim meeting, May 10~15, Warsaw, Poland**
- **IEEE 802.11 #182, plenary meeting, Jul 12~17, Montreal, Canada**
- **IEEE 802.11 #183, interim meeting, Sep 13~18, Atlanta, GA, USA**
- **IEEE 802.11 #184, plenary meeting, Nov 8~13, Bangkok, Thailand**

Thank You and Welcom to IEEE 802.11bd!