IEEE P802.11
Wireless LANs

|  |
| --- |
| **Specification Framework for TGbe** |
| **Date:** 2019-10-09 |
| **Author(s):** |
| **Name** | **Affiliation** | **Address** | **Phone** | **email** |
| Edward Au | Huawei | 400-303 Terry Fox Drive, Ottawa, ON, K2K 3J1 |  | edward.ks.au@gmail.com |

Abstract

This document provides the framework from which the draft TGbe amendment will be developed. The document provides an outline of each the functional blocks that will be a part of the final amendment. The document is intended to reflect the working consensus of the group on the broad outline for the draft specification. As such it is expected to begin with minimal detail reflecting agreement on specific techniques and highlighting areas on which agreement is still required. It may also begin with an incomplete feature list with additional features added as they are justified. The document will evolve over time until it includes sufficient detail on all the functional blocks and their inter-dependencies so that work can begin on the draft amendment itself.

# Revision history

|  |  |  |
| --- | --- | --- |
| Revision | Date | Changes |
| 0 | July 15, 2019 | Initial draft version for task group review |
| 1 | July 18, 2019 | Revised draft version based on the inputs from task group members |
| 2 | July 18, 2019 | Further revised draft version based on the inputs from task group members |
| 3 | October 9, 2019 | Incorporated the text approved in the September 2019 interim. |

**Table of Contents**

[Revision history 2](#_Toc21520660)

[1. Abbreviations and acronyms 4](#_Toc21520661)

[2. EHT PHY 4](#_Toc21520662)

[2.1 General 4](#_Toc21520665)

[2.2 Channelization and tone plan 4](#_Toc21520666)

[2.3 EHT preamble 4](#_Toc21520667)

[2.3.1 L-STF, L-LTF, and L-SIG 4](#_Toc21520668)

[2.4 Resource unit 4](#_Toc21520669)

[3. EHT MAC 4](#_Toc21520670)

[3.1 General 4](#_Toc21520672)

[3.2 MAC TBD #1 5](#_Toc21520673)

[4. Coexistence and regulatory rules 5](#_Toc21520674)

[4.1 General 5](#_Toc21520676)

[4.2 Coexistence feature #1 5](#_Toc21520677)

[5. Wideband and noncontiguous spectrum utilization 5](#_Toc21520678)

[5.1 General 5](#_Toc21520680)

[5.2 Feature #1 5](#_Toc21520681)

[6. Multi-band and multichannel aggregation and operation 5](#_Toc21520682)

[6.1 General 5](#_Toc21520684)

[6.2 Feature #1 5](#_Toc21520685)

[7. Spatial stream and MIMO protocol enhancement 5](#_Toc21520686)

[7.1 General 5](#_Toc21520688)

[7.2 Feature #1 5](#_Toc21520689)

[8. Multi-AP operation 6](#_Toc21520690)

[8.1 General 6](#_Toc21520692)

[8.2 Feature #1 6](#_Toc21520693)

[9. Link adaptation and retransmission protocols 6](#_Toc21520694)

[9.1 General 6](#_Toc21520696)

[9.2 Feature #1 6](#_Toc21520697)

[10. Low latency 6](#_Toc21520698)

[10.1 General 6](#_Toc21520700)

[10.2 Feature #1 6](#_Toc21520701)

[11. References 6](#_Toc21520702)

# Abbreviations and acronyms

BPSK binary phase shift keying

EHT extremely high throughput

L-LTF non-HT long training field

L-SIG non-HT SIGNAL field

L-STF non-HT short training field

MAC medium access protocol

PHY physical layer

PPDU PHY protocol data unit

RU resource unit

STA station

# EHT PHY

1.
2.

## General

This section describes the functional blocks in the EHT PHY.

## Channelization and tone plan

11be supports 320 MHz and 160+160 MHz PPDU.

[Motion 10, [1] and [2]]

11be uses the same subcarrier spacing for the data portion of EHT PPDU as 11ax data portion.

[Motion 11, [1] and [2]]

## EHT preamble

### L-STF, L-LTF, and L-SIG

For EHT PPDU, L-STF, L-LTF and L-SIG shall be transmitted at the beginning of the EHT PPDU.

For EHT PPDU, the first symbol after L-SIG shall be BPSK modulated.

[Motion 1, [1] and [3]]

## Resource unit

11be shall allow more than one RUs to be assigned to a single STA

Coding and interleaving schemes for multiple RUs assigned to a single STA are TBD.

Maximum number of RUs (>1) assigned to a single STA is also TBD.

[Motion 6, [1] and [4]]

# EHT MAC

1.

## General

This section describes the functional blocks in the EHT MAC.

## MAC TBD #1

Description for MAC feature #1

# Coexistence and regulatory rules

1.

## General

This section describes the functional blocks that support coexistence. It additionally describes, if needed, adaption to regulatory rules specific to 6 GHz spectrum.

## Coexistence feature #1

Description for coexistence feature #1

# Wideband and noncontiguous spectrum utilization

1.

## General

This section describes features related to the support of wider bandwidth and utilization of noncontiguous spectrum.

## Feature #1

Description for feature #1

# Multi-band and multichannel aggregation and operation

1.

## General

This section describes features related to multi-band and multichannel aggregation and operation.

## Feature #1

Description for feature #1

# Spatial stream and MIMO protocol enhancement

1.

## General

This section describes features related to 16 spatial stream operation and MIMO protocol enhancement.

## Feature #1

Description for feature #1

# Multi-AP operation

1.

## General

This section describes features related to multi-AP operation.

## Feature #1

Description for feature #1

# Link adaptation and retransmission protocols

1.

## General

This section describes features related to enhanced link adaptation and retransmission protocols.

## Feature #1

Description for feature #1

# Low latency

1.

## General

This section describes features related to low latency.

## Feature #1

Description for feature #1

# References

# Bibliography

|  |  |
| --- | --- |
| [1]  | TGbe, “Compendium of motions related to the contents of the TGbe specification framework document,” *19/1755r0,* October 2019.  |
| [2]  | Alice Chen (Qualcomm), “320MHz channelization and tone plan,” *19/0797r1,* September 2019.  |
| [3]  | Ross Yu (Huawei), “Preamble structure,” *19/1099r2,* September 2019.  |
| [4]  | Jianhan Liu (MediaTek), “Enhanced resource allocation schemes for 11be,” *19/1126r1,* September 2019.  |