IEEE P802.11
Wireless LANs

|  |
| --- |
| **Specification Framework for TGax** |
| **Date:** 2015-01-15 |
| **Author(s):** |
| **Name** | **Affiliation** | **Address** | **Phone** | **email** |
| Robert Stacey | Intel | 2111 NE 25th Ave, Hillsboro OR 97124, USA | +1-503-724-893 | robert.stacey@intel.com |

Abstract

This document provides the framework from which the draft TGax 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 | January 13, 2015 | As approved by TG motion at the November 2014 meeting |
| 1 | January 13, 2015 | Added motioned text from PM1 session January 13, 2015 |
| 2 | January 15, 2015 | Added motioned text from January 14, 2014 |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

# 1 Definitions

# 2 Abbreviations and acronyms

HE High Efficiency

UL Uplink

DL Dowlink

OFDMA Orthogonal Frequency-Division Multiple Access

# 3 High Efficiency (HE) Physical Layer

This section describes the functional blocks in the physical layer.

## 3.1 HE preamble

An HE PPDU shall include the legacy preamble (L-STF, L-LTF and L-SIG), duplicated on each 20 MHz, for backward compatibility with legacy devices. [PHY Motion #3, January 2015]

HE-SIG-A (using a DFT period of 3.2 µs and subcarrier spacing of 312.5 kHz) is duplicated on each 20 MHz after the legacy preamble to indicate common control information. [Motion #4, January 2015]

## 3.2 HE Data field

Data symbols in an HE PPDU shall use a DFT period of 12.8 µs and subcarrier spacing of 78.125 kHz. [PHY Motion #1, January 2015]

Data symbols in an HE PPDU shall support guard interval durations of 0.8 µs, 1.6 µs and 3.2 µs. [PHY Motion #2, January 2015]

# 4 Multi-user (MU) features

This section describes MU related features. MU features include UL and DL OFDMA and UL and DL MU-MIMO.

The amendment shall define a mechanism for multiplexing DL acknowledgments sent in response to UL MU transmissions. [MU Motion #1, January 2015]

# 5 Coexistence

This section describes the functional blocks that support coexistence.

## 5.1 Features for operation in dense environments

This section describes features that improve overlapping BSS (OBSS) operation in dense environments. This includes features such as deferral rules and CCA levels.

# 6 MAC

This section describes general MAC functional blocks.

The amendment shall define a mechanism to allow the AP to configure the use of RTS/CTS initiated by non-AP STA. [MAC Motion #1, January 2015]

## 6.1 Power Save

# References:

14/1453r2 Proposed Spec Framework Document for TGax

15/0099r4 Payload Symbol Size for 11ax

15/0101r1 Preamble structure for 11ax system

15/0064r1 Consideration on UL-MU overheads

15/0059r1 Uplink RTS/CTS Control