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| 802.11Communication from Wireless Broadband Alliance (WBA) to IEEE 802.11 Working Group on 802.11ax |
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**Abstract**

This document contains a liaison statement from the Wireless Broadband Alliance (WBA) on “802.11ax – Enhanced Wi-Fi WBA Workstream”.

The liaison is included on the following pages; a response is requested:

*“The main objective of this initial communication is to confirm whether this information might be used by WBA on this paper or you would have any specific feedback.”*

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| date: | Thu, Jun 21, 2018 at 5:03 PM |
| subject: | WBA Communication to IEEE 802.11 on "802.11ax - Enhanced Wi-Fi WBA Workstream" |
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| security: | Standard encryption (TLS) [Learn more](https://support.google.com/mail?hl=en&p=tls&authuser=1) |

Hi Dorothy and Bruce,Hope you are doing well – I am sending this communication to IEEE 802.11 informing on recent progress made on our 802.11ax – Enhanced Wi-Fi Workgroup:WBA is looking to strengthening collaboration with IEEE by promoting 802.11 based technologies and is producing a whitepaper that have gathered contributions from more than 15 members on “Enhanced Wi-Fi - 802.11ax - Overview, Features, Use Cases, 5G Context”, covering the following Table of Contents: One specific item that was agreed to benefit the industry perception on what’s coming next, is an assessment of newly introduced 11ax features vs. 11ac improved features. For this effort Intel team (Chitto Ghosh) helped to build high-level tables that we are included as an annex of the paper (full tables attached). The main objective of this initial communication is to confirm whether this information might be used by WBA on this paper or you would have any specific feedback. The project team is looking to release this deliverable by early July 2018 and your guidance is much appreciated. Looking forward to strengthening the cooperation between our organizations. Do not hesitate in contacting me for any questions or comments.Best Regards,Bruno

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| Wireless Broadband Alliance Ltd | Registered Office: 8 Eu Tong Sen Street #14-94, The Central, Singapore 059818 | Company Registration No. 200819117R | Privileged/Confidential information may be contained in this message and any files attached in it (‘Message’). If you are not the intended recipient (or have received this Message in error), please notify the sender immediately and delete this Message. Any unauthorized copying, disclosure, use or distribution of this Message is strictly forbidden. Thank you |

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|  |  |  | **Matching w/ 802.11ax Section 2 & Annex "decoding IEEE 802.11ax features"** |
| **Feature Number** | **MAC Features** | **New /** **11AC Improv** |  **High Level Feature 1** |  **High Level Feature 2** |  **High Level Feature 3** |
| 1 | Basic trigger frame | **New** | OFDMA Uplink & Downlink | Transmission Scheduling |  |
| 2 | HE MU UL operation using UL OFDMA | **New** | OFDMA Uplink & Downlink | Transmission Scheduling |  |
| 3 | UL MU sensing rules: CS Required indication in trigger; ED sensing and NAV consideration requirement | **New** | Peak Speads | Transmission Scheduling |  |
| 4 | Channel Access Rules for Trigger-based PPDU transmission | **New** | OFDMA Uplink & Downlink |  |  |
| 5 | MU EDCA Parameter for channel access | **New** | OFDMA Uplink & Downlink | Transmission Scheduling |  |
| 6 | Beamforming Report Poll (BRP) - Trigger variant | **New** | OFDMA Uplink & Downlink | Transmission Scheduling |  |
| 7 | Tx beamforming (MU) Sequence Trigger-based sounding  | **New** | OFDMA Uplink & Downlink | Transmission Scheduling |  |
| 8 | MU\_BAR Trigger variant | **New** | OFDMA Uplink & Downlink | Transmission Scheduling |  |
| 9 | DL MU PPDU follwed by BlockAckReq or MU-BAR variant soliciting a BlockAck frame response | **New** | OFDMA Uplink & Downlink | Transmission Scheduling |  |
| 10 | MU-RTS Trigger variant | **New** | OFDMA Uplink & Downlink | Transmission Scheduling |  |
| 11 |  MU-RTS and CTS procedure | **New** | OFDMA Uplink & Downlink | Transmission Scheduling |  |
| 12 | BSRP Trigger variant | **New** | OFDMA Uplink & Downlink | Transmission Scheduling |  |
| 13 | Trigger frame MAC padding | **New** | OFDMA Uplink & Downlink | Transmission Scheduling |  |
| 14 | HE Variant of HT Control | **AC Improv** | Flexible Channel Sizes |  |  |
| 15 | Receive Operating Mode | **AC Improv** | Flexible Channel Sizes |  |  |
| 16 | Transmit Operating Mode | **AC Improv** | Flexible Channel Sizes |  |  |
| 17 | HE MU DL operation using DL OFDMA  | **New** | OFDMA Uplink & Downlink | Transmission Scheduling |  |
| 18 | DL MU PPDU soliciting an SU PPDU response which contains ACK/C-BA/M-BA | **New** | OFDMA Uplink & Downlink | Transmission Scheduling |  |
| 19 | DL MU PPDU soliciting an HE Trigger-based PPDU response which contains ACK/C-BA/M-BA | **New** | OFDMA Uplink & Downlink | Transmission Scheduling |  |
| 20 | Acknowledgement (ACK/C-BA) in DL OFDMA MU PPDU in response to UL data transmitted in MU PPDU | **New** | OFDMA Uplink & Downlink | Transmission Scheduling |  |
| 21 | Acknowledgement (M-BA) in SU PPDU in response to UL data transmitted in MU PPDU | **New** | OFDMA Uplink & Downlink | Transmission Scheduling |  |
| 22 | Multi-STA Block ACK  | **New** | OFDMA Uplink & Downlink | Transmission Scheduling |  |
| 23 | Compressed BA (C-BA) variant in BlockAck (BA) Frame with A-MSDUs ACKed=64 | **AC Improv** | Peak Speads |  |  |
| 24 | Compressed BA (C-BA) variant in BlockAck (BA) Frame with A-MSDUs ACKed=256 | **New** | Peak Speads |  |  |
| 25 | Tx beamforming (SU) Sequence: DL Non-trigger based Sounding | **AC Improv** | Transmission Scheduling |  |  |
| 26 | RTS enablement | **New** | Peak Speads | Transmission Scheduling |  |
| 27 | A-MPDU in a HE SU and MU PPDU | **New** | Peak Speads | OFDMA Uplink & Downlink | Transmission Scheduling |
| 28 | A-MPDU in a HE Triggered-based PPDU | **New** | Peak Speads | OFDMA Uplink & Downlink | Transmission Scheduling |
| 29 | Multi-TID A-MPDU in HE SU PPDU, HE MU PPDU, and HE TB PPDU  | **New** | Peak Speads | OFDMA Uplink & Downlink | Transmission Scheduling |
| 30 | Target Wake Time (TWT) and its variants | **New** | Target Wake Time |  |  |
| 31 | Spatial Reuse Operation | **New** | Spatial Re-Use/Colour Codes |  |  |
| 32 | HE Dynamic fragmentation | **AC Improv** | Peak Speads |  |  |
| 33 | Multi-BSSID: Multiple BSSID baseline | **AC Improv** | Peak Speads | Transmission Scheduling |  |
|  |  |  | Code |  |  |
|  |  | 1 | OFDMA Uplink & Downlink |  |  |
|  |  | 2 | Transmission Scheduling |  |  |
|  |  | 3 | Multi-User MIMO Uplink |  |  |
|  |  | 4 | Peak Speads |  |  |
|  |  | 5 | Flexible Channel Sizes |  |  |
|  |  | 6 | Target Wake Time |  |  |
|  |  | 7 | Spatial Re-Use/Colour Codes |  |  |
|  |  | 8 | Dual Band Frequencies |  |  |
|  |  | 9 | Self Optimizing Capability |  |  |
|  |  | 10 | Increased Guard Interval/Cyclic Prefix/Symbol Time |  |
|  |  | 11 | Support of New Frequency Ranges |  |

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