Wireless LANs

|  |
| --- |
| 802.11[802.11az Annex B - PICS](relative to REVmd Dx.x) |
| Date: 2018-10-01 |
| Author(s): |
| Name | Company | Address | Phone | Email |
| Jonathan Segev | Intel Corporation | 2200 Mission college BLVD, Santa Clara, Ca | +1-408-2033337 | Jonathan.segev@intel.com |
|  |  |  |  |  |

*

Protocol Implementation Conformance Statement (PICS) -proforma

* PICS proforma—IEEE Std 802.11-<year>

Change B.4.3 as follows:

|  |
| --- |
| * IUT configuration
 |
| Item | IUT configuration | References | Status | Support |
|  | What is the configuration of the IUT? |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| CFRSTA | 11az RSTA operation  | 11.22.6 (Fine timing measurement (FTM) procedure) | OCFHE ORCFVHT ORCFDMG ORCFEDMG | Yes  No  |
| CFISTA | 11az ISTA operation | 11.22.6 (Fine timing measurement (FTM) procedure) | OCFHE ORCFVHT ORCFDMG ORCFEDMG | Yes  No  |
| CFTB | support for 11az Trigge sounding | 11.22.6 (Fine timing measurement (FTM) procedure) | OCFHE | Yes  No  |
| CFNTB | support for 11az Non Trigger Base sounding | 11.22.6 | OCFVHT OR CFHE | Yes  No  |
| CFPASN | support for PASN | 12.13 | OCFTBCFNTB | Yes  No  |
| CFPSEC | Support for PHY security | 11.2.6.4.6(Trigger Based and Non Trigger Based Secure LTF Measurement Exchange Protocol) | OCFPASN | Yes  No  |

* MAC protocol

Change B.4.4.1 as follows:

|  |
| --- |
| * MAC protocol capabilities
 |
| Item | Protocol capability | References | Status | Support |
|  | Are the following MAC protocol capabilities supported? |  |  |  |
|  |  |  |  |  |
| FSTBFSNTB | Support for Trigger Based ranging sounding exchange sequence | 11.22.6 | OCFHE: M | Yes  No  |
| FSNTB | Support for EDCA based non trigger based ranging sounding exchange sequence. | 11.22.6 | OCFVHT: M | Yes  No  |
| FSPASN | Pre-association security negotiation | 12.13 | OCFPSAN:M ANDCFVHT ORCFHE | Yes  No  |

Change B.4.4.2 as follows:

|  |
| --- |
| * MAC frames
 |
| Item | MAC frame | References | Status | Support |
|  | Is transmission of the following MAC frames supported? | 9 (Frame formats) |  |  |
| FT43 | Trigger frame | 10 ~~9~~ (Frame formats) | CFHE:M | Yes  No  N/A  |
| FT ANA + 0 | Fine Timing Measurement Request | 11.22.6.3 | CFISTA:M CFTB:M OR CFNTB:M | Yes  No  N/A  |
| FT ANA + 2 | Fine Timing Measurement | 11.22.6.3 | CFRSTA:MCFTB:M ORCFNTB:M | Yes  No  N/A  |
| FT ANA + 3 | Location Measurement Report | 9.3.6.7.3711.22.6.4.3 | CFRSTA:M OR CFISTA:MANDCFTB ORCFNTB | Yes  No  N/A  |
| Need to check on NDPA transmission and reception | Transmission of NDPA in the EDCA based non Trigger based ranging sounding |  | CFISTACFNTBORCFRSTACFTB | TBD |
|  |  |  |  |  |
|  | Is reception of the following MAC frames supported? |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| FR44 | Trigger frame | 10 ~~9~~ (Frame formats) | CFHE:O | Yes  No  N/A  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| FR ANA + 0 | Fine Timing Measurement Request | 11.22.6.3 | CFRSTA:M ANDCFTB OR CFNTB | Yes  No  N/A  |
| FR ANA + 2 | Fine Timing Measurement | 11.22.6.3 | CFISTA:MAND CFTB ORCFNTB | Yes  No  N/A  |
| FR ANA + 3 | Location Measurement Report | 9.3.6.7.3711.22.6.4.3 | CFRSTA:M OR CFISTA:M ANDCFTB ORCFNTB  | Yes  No  N/A  |

|  |
| --- |
|  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

Insert a new subclause B.4.28 as follows:

B.4.28 Next Generation Positioning (NGP) features

|  |
| --- |
| B.4.28.1 |
| Item | Protocol capability | References | Status | Support |
|  | Are the following MAC protocol features supported? |  |  |  |
| NGPM1 | NGP capability Signaling |  |  |  |
| NGPM1.1 | NGP FTM support signaling | 11.22.6.211.22.6.3.1 | (CFTB OR CFNTB):M | Yes  No  N/A  |
| NGPM1.2 | NGP FTM capability negotiation | 11.22.6.3.1 | (CFTB OR CFNTB):M | Yes  No  N/A  |
| NGPM1.3 | NGP secured MAC operation | 12.1311.22.6.4.6 | (CFTB OR CFNTB):M | Yes  No  N/A  |
| NGPM2 | Trigger Based Ranging Operation |  |  |  |
| NGPM2.1 | Secured TB Ranging Operation | 12.1311.22.6.4.6 | (CFHE AND CFTB):M | Yes  No  N/A  |
| NGPM3 | Non Trigger Based Location Operation |  |  |  |
| NGPM3.1 | Secured Non Trigger Based Ranging Operation | 12.1311.22.6.4.6 | CFVHT :M | Yes  No  N/A  |
| NGPM4 | Passive Location operation |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A Yes  No  N/A NGPM4.1 | Operation as RSTA | 11.22.6.4.9 | CFTB:M | Yes  No  N/A  |
| NGPM4.2 | Operation as ASTA | 11.22.6.4.9 | CFTB:M | Yes  No  N/A  |
| NGPM4.3 | Operation as Passive ISTA | 11.22.6.4.9 | CFTB:M | Yes  No  N/A  |
| NGPM5 | EDMG/DMG operation | 11.22.6.4.7 | O | Yes  No  N/A  |
| NGPM5.1 | EDMG/DMG Direction Measurement as ISTA | 11.22.6.4.7.2 | CFISTA: O | Yes  No  N/A  |
| NGPM5.2 | EDMG/DMG Direction Measurement as RSTA | 11.22.6.4.7.2 | CFRSTA: O | Yes  No  N/A  |
| NGPM5.3 | EDMG FTM measurement with First Arrival Path as ISTA | 11.22.6.4.7.1 | (CFISTA and EMDG-M17.7): M | Yes  No  N/A  |
| NGPM5.4 | EDMG FTM measurement with First Arrival Path as RSTA | 11.22.6.4.7.1 | (CFRSTA and EMDG-M17.7): M | Yes  No  N/A  |
| NGPM5.5 | EDMG Direction measurement with First Arrival Path as ISTA | 11.22.6.4.7.2 | (CFISTA and EMDG-M17.7): O | Yes  No  N/A  |
| NGPM5.6 | EDMG Direction Measurement with First Arrival Path as RSTA | 11.22.6.4.7.2 | (CFRSTA and EMDG-M17.7): O | Yes  No  N/A  |
| NGPM5.7 | EDMG LOS Assessment as ISTA | 11.22.6.4.7.3 | (CFISTA and EMDG-M17.7 and EDMG-M17.8):O | Yes  No  N/A  |
| NGPM5.8 | EDMG LOS Assessment as RSTA | 11.22.6.4.7.4 | (CFRSTA and EMDG-M17.7 and EDMG-M17.8 ):O | Yes  No  N/A  |
| NGPM6 | Secure EDMG FTM operation  | 11.22.6.4.8 | (CFEDMG and (CFISTA or CFRSTA) and NGPP5 and NGPM1.3):O | Yes  No  N/A  |

|  |
| --- |
| B.28.2 NGP PHY features  |
| Item | Protocol capability | References | Status | Support |
|  | Are the following PHY protocol features supported? |  |  |  |
| NGPP1 | PHY operating modes |  |  |  |
| NGPP1.1 | Operation using management frames for sounding. | 11.22.6.4.2  |  | Yes  No  N/A  |
| NGPP1.2 | Trigger Based Ranging | 11.22.6.4.3 |  | Yes  No  N/A  |
| NGPP1.3 | Non Trigger Based Ranging | 11.22.6.4.4 |  | Yes  No  N/A  |
| NGPP2 | NGP PPDU formats | 28.3 |  |  |
| NGPP2.1 | TB SU sounding NDP PPDU | 28.3.17a |  | Yes  No  N/A  |
| NGPP2.2 | TB TB Sounding NDP PPDU | 28.3.17b  |  | Yes  No  N/A  |
| NGPP2.3 | TB SU secured NDP | 28.3.17a |  | Yes  No  N/A  |
| NGPP2.4 | TB SU secured NDP | 28.3.17a |  | Yes  No  N/A  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| NGPP4 | MIMO operation |  |  |  |
| NGPP4.1 | Multi transmit streams | 11.22.6.4.311.22.6.4.4 |  | Yes  No  N/A  |
| NGPP4.2 | Multi receive streams  | 11.22.6.4.311.22.6.4.4 |  | Yes  No  N/A  |
| NGPP5 | Secure ranging EDMG TRN field | 29.9.3.5, 29.9.3.6, 29.9.3.7 |  | Yes  No  N/A  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |