IEEE P802.11  
Wireless LANs

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| Comment Resolution for CID 673 and CID 674 | | | | |
| Date: 2023-01-16 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Osama Aboul-Magd | Huawei Technologies |  |  | [osama.aboulmagd@huawei.com](mailto:osama.aboulmagd@huawei.com) |
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Abstract

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| 673 | The draft doesn't include Annex B on PICS. | I recognize it is still early in the process to develop a comprehensive Annex B. I volunteer to setup an initial Annex B and keep populating it as more items are added to the draft | Revised  TGbf Editor: Please make the changes shown beloe under CID 673 |
| 674 | The draft doesn't include Annex G on frame exchange | same as the comment on Annex B | Rejected  The ARC SC is working on changes related to Annex G. One change is Annex G is no longer normative. The suggestion is to wait for ARC SC to complete its recommendation instead of wasting the effort on a format that is no longer valid |

**CID 673**

***TGaf Editor: Please add to the PICS tables as shgown below***

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| * General abbreviations for Item and Support columns   SIGM Sub 1 GHz (S1G) medium access control (MAC) features  SIGP Sub 1 GHz (S1G) physical layer (PHY) features  SM spectrum management  TDLS tunneled direct-link setup  TVHTM television very high throughput medium access control (MAC) features  TVHTP television very high throughput physical layer (PHY) features  TVWS television white spaces  VHTM Very high throughput MAC  VHTP Very high throughput PHY  WNM wireless network management  WLS. Wireless LAN Sensing | | | | | | | | | | |
| * IUT configuration | | | | | | | | | | |
| Item | | | IUT configuration | | References | | Status | | Support | |
|  | | | What is the configuration of the IUT? | |  | |  | |  | |
| (11ay)\*CFEDMG | | | Enhanced directional multi-gigabit (EDMG) PHY | | 9.4.2.265 (EDMG Capabilities element(11ay)) | | CFEDMG: M | | Yes o No o | |
| (11ay)\*CFTDD | | | Time division duplex (TDD) features | | 9.4.2.127 (DMG Capabilities element) | | CFDMG:O  CFEDMG:O | | Yes o No o | |
| (11ba)\*CFWUR | | | Wake-up Radio features | | 9.4.2.291 (WUR Capabilities element(11ba)) | | O | | Yes o No o N/A o | |
| (11ba)\*CFWUR2G4 | | | WUR operation in the 2.4 GHz band | | Clause 30 (Wake-Up Radio (WUR) PHY specification(11ba)) | | CFWUR:O | | Yes o No o N/A o | |
| (11ba)\*CFWUR5G | | | WUR operation in the 5 GHz band | | Clause 30 (Wake-Up Radio (WUR) PHY specification(11ba)) | | CFWUR:O | | Yes o No o N/A o | |
| CFWLS | | | WLS operation | |  | | O | | Yes o No o N/A o | |
| CFWLS<7G | | | WLS operation in bands below 7GHz | | 11.55.1.3 Sensing session setup | | O | | Yes o No o N/A o | |
| CFWLS>45G | | | WLS operation in bands above 45 GHz | | 11.55.3 DMG sensing procedure | | O | | Yes o No o N/A o | |
| * MAC frames | | | | | | | | | | |
| Item | | | MAC frame | | References | | Status | | Support | |
|  | | | Is transmission of the following MAC frames supported? | | Clause 9 (Frame formats) | |  | |  | |
| FT1 | | | Association Request | | Clause 9 (Frame formats) | | CFSTAofAP:M  CFPBSSnotPCP:O | | Yes o No o N/A o | |
| FT2 | | | Association Response | | Clause 9 (Frame formats) | | (CFAP OR CFPCP):M | | Yes o No o N/A o | |
| FT3 | | | Reassociation Request | | Clause 9 (Frame formats) | | CFSTAofAP:M  CFPBSSnotPCP:O | | Yes o No o N/A o | |
| FT4 | | | Reassociation Response | | Clause 9 (Frame formats) | | (CFAP OR CFPCP):M | | Yes o No o N/A o | |
| FT5 | | | Probe Request | | Clause 9 (Frame formats) | | (CFSTAofAP or CFIBSS OR CFPBSSnotPCP OR CFMBSS):M | | Yes o No o N/A o | |
| FT6 | | | Probe Response | | Clause 9 (Frame formats) | | (CFAP OR CFIBSS OR CFPCP OR CFMBSS):M | | Yes o No o N/A o | |
| FT7 | | | Beacon | | Clause 9 (Frame formats) | | (CFAP OR CFIBSS OR CFMBSS) AND (not CFDMG AND (NOT CFS1G)):M | | Yes o No o N/A o | |
| FT8 | | | ATIM | | Clause 9 (Frame formats) | | CFIBSS:M | | Yes o No o N/A o | |
| FT9 | | | Disassociation | | Clause 9 (Frame formats) | | CFInfraSTA:M  CFPBSS:O | | Yes o No o N/A o | |
| FT10 | | | Authentication | | Clause 9 (Frame formats) | | CFInfraSTA:M  CFIBSS OR CFPBSS:O | | Yes o No o N/A o | |
| FT11 | | | Deauthentication | | Clause 9 (Frame formats) | | (NOT CFOCB):M  not CFDMG:M | | Yes o No o N/A o | |
| FT12 | | | Power save (PS)-Poll | | Clause 9 (Frame formats) | | not CFDMG AND CFSTAofAP:M | | Yes o No o N/A o | |
| FT13 | | | RTS | | Clause 9 (Frame formats) | | M | | Yes o No o | |
| FT14 | | | CTS | | Clause 9 (Frame formats) | | not CFDMG AND NOT CFS1G):M  (CFS1G AND VHTM3.1):O | | Yes o No o | |
| FT15 | | | Acknowledgment (Ack) | | Clause 9 (Frame formats) | | NOT CFS1G:M  CFS1G AND VHTM3.1 OR S1GM28):O | | Yes o No o | |
| FT16 | | | CF-End | | Clause 9 (Frame formats) | | not CFDMG | | Yes o No o N/A o | |
| FT17 | | | *Reserved* | |  | |  | |  | |
| FT18 | | | Data | | Clause 9 (Frame formats) | | not CFDMG:M | | Yes o No o | |
| FT19 | | | *Reserved* | |  | |  | |  | |
| FT20 | | | *Reserved* | |  | |  | |  | |
| FT21 | | | *Reserved* | |  | |  | |  | |
| FT22 | | | Null | | Clause 9 (Frame formats) | | not CFDMG:M | | Yes o No o | |
| FT23 | | | *Reserved* | |  | |  | |  | |
| FT24 | | | *Reserved* | |  | |  | |  | |
| FT25 | | | *Reserved* | |  | |  | |  | |
| FT26 | | | Timing Advertisement frame | | Clause 9 (Frame formats) | | O | | Yes o No o | |
| FT27 | | | QoS Data | | Clause 9 (Frame formats) | | CFQoS:M | | Yes o No o N/A o | |
| FT28 | | | QoS Null | | Clause 9 (Frame formats) | | CFQoS:M | | Yes o No o N/A o | |
| FT29 | | | BlockAckReq | | Clause 9 (Frame formats) | | CFDMG:M  CFQoS:O | | Yes o No o N/A o | |
| FT30 | | | BlockAck | | Clause 9 (Frame formats) | | CFDMG:M  CFQoS:O  CFHT:M | | Yes o No o N/A o | |
| FT31 | | | Poll | | Clause 9 (Frame formats) | | CFDMG:M | | Yes o No o N/A o | |
| FT32 | | | SPR | | Clause 9 (Frame formats) | | CFDMG:M | | Yes o No o N/A o | |
| FT33 | | | Grant | | Clause 9 (Frame formats) | | CFDMG:M | | Yes o No o N/A o | |
| FT34 | | | DMG CTS | | Clause 9 (Frame formats) | | CFDMG:M | | Yes o No o N/A o | |
| FT35 | | | DMG DTS | | Clause 9 (Frame formats) | | CFDMG:M | | Yes o No o N/A o | |
| FT36 | | | SSW | | Clause 9 (Frame formats) | | CFDMG:M | | Yes o No o N/A o | |
| FT37 | | | SSW-Feedback | | Clause 9 (Frame formats) | | CFDMG:M | | Yes o No o N/A o | |
| FT38 | | | SSW-Ack | | Clause 9 (Frame formats) | | CFDMG:M | | Yes o No o N/A o | |
| FT39 | | | DMG Beacon | | Clause 9 (Frame formats) | | CFDMG:M | | Yes o No o N/A o | |
| FT40 | | | VHT NDP Announcement | | Clause 9 (Frame formats) | | VHTM4.1:M  TVHTM4.1:M | | Yes o No o N/A o | |
| FT41 | | | Beamforming Report Poll | | Clause 9 (Frame formats) | | VHTM4.1:O  VHTM4.3:M  TVHTM4.1:O  TVHTM4.3:M | | Yes o No o N/A o | |
| FT42 | | | Transmission of Operating Mode Notification frame and Operating Mode Notification element | | 9.6.22.4 (Operating Mode Notification frame format), 9.4.2.165 (Operating Mode Notification element), 11.40 (Notification of operating mode changes) | | O | | Yes o No o N/A o | |
| FT43 | | | TACK | | Clause 9 (Frame formats) | | S1GM6.2:M  (CFS1G AND NOT S1GM6):O | | Yes o No o N/A o | |
| FT44 | | | S1G Beacon | | Clause 9 (Frame formats) | | ((CFAP OR CFIBSS) AND CFS1G):M | | Yes o No o N/A o | |
| FT45 | | | PV1 frame | | 9.8 (MAC frame format for PV1 frames) | | CFS1G:O | | Yes o No o N/A o | |
| FT45.1 | | | STACK frame | | 9.8 (MAC frame format for PV1 frames)(#2288) | | (S1GM6.2: OR S1GM6.1):M | | Yes o No o N/A o | |
| FT45.2 | | | BAT frame | | 9.8 (MAC frame format for PV1 frames)(#2288) | | (S1GM6.2 AND QB4.1):M | | Yes o No o N/A o | |
| FT45.3 | | | PV1 Action frame | | 9.8 (MAC frame format for PV1 frames)(#2288) | | CFS1G:O | | Yes o No o N/A o | |
| FT45.4 | | | PV1 Action No Ack frame | | 9.8 (MAC frame format for PV1 frames)(#2288) | | CFS1G:O | | Yes o No o N/A o | |
| FT45.5 | | | PV1 Probe Response frame | | 9.8 (MAC frame format for PV1 frames)(#2288) | | (CFAP AND CFS1G):O | | Yes o No o N/A o | |
| FT45.6 | | | PV1 Data frame | | 9.8 (MAC frame format for PV1 frames)(#2288) | | CFS1G:O  RL6:M  S1GM13:M | | Yes o No o N/A o | |
| FT45.7 | | | Resource Allocation | | 9.8 (MAC frame format for PV1 frames)(#2288) | | (CFAP AND S1GM22.5):O | | Yes o No o N/A o | |
| FT46 | | | NDP CMAC PPDUs | | 23.3.12 (NDP CMAC PPDUs) | | CFS1G: M | | Yes o No o N/A o | |
| FT46.1 | | | NDP CTS | | 23.3.12 (NDP CMAC PPDUs) | | CFS1G: M | | Yes o No o N/A o | |
| FT46.2 | | | NDP PS-Poll | | 23.3.12 (NDP CMAC PPDUs) | | (CFIndepSTA AND CFS1G): O | | Yes o No o N/A o | |
| FT46.3 | | | NDP Ack | | 23.3.12 (NDP CMAC PPDUs) | | CFS1G: M | | Yes o No o N/A o | |
| FT46.4 | | | NDP PS-Poll-Ack | | 23.3.12 (NDP CMAC PPDUs) | | (CFAP AND CFS1G AND FR47.2): M | | Yes o No o N/A o | |
| FT46.5 | | | NDP BlockAck | | 23.3.12 (NDP CMAC PPDUs) | | (CFS1G AND HTM5.3): M | | Yes o No o N/A o | |
| FT46.6 | | | NDP Beamforming Report Poll | | 23.3.12 (NDP CMAC PPDUs) | | CFS1G AND CFAP: O | | Yes o No o N/A o | |
| FT46.7 | | | NDP Paging | | 23.3.12 (NDP CMAC PPDUs) | | S1GM6.11: M | | Yes o No o N/A o | |
| FT46.8 | | | NDP Probe Request | | 23.3.12 (NDP CMAC PPDUs) | | (CFS1G AND CFIndepSTA AND S1GM4.5):M | | Yes o No o N/A o | |
| FT46.9 | | | NDP CF-End | | 23.3.12 (NDP CMAC PPDUs) | | CFS1G:O | | Yes o No o N/A o | |
| FT47 | | | Unprotected S1G Action frame | | 9.6.24 (Unprotected S1G Action frame details) | | CFS1G:M | | Yes o No o N/A o | |
| FT47.1 | | | AID Switch Request frame | | 9.6.24 (Unprotected S1G Action frame details) | | (CFIndepSTA AND CFS1G AND (S1GM13 OR S1GM18)):M | | Yes o No o N/A o | |
| FT47.2 | | | AID Switch Response frame | | 9.6.24 (Unprotected S1G Action frame details) | | (CFAP AND CFS1G AND (S1GM13 OR S1GM18)):M | | Yes o No o N/A o | |
| FT47.3 | | | Sync Control frame | | 9.6.24 (Unprotected S1G Action frame details) | | (CFAP AND CFS1G AND S1GM8.2):M | | Yes o No o N/A o | |
| FT47.4 | | | STA Information Announcement frame | | 9.6.24 (Unprotected S1G Action frame details) | | (CFIndepSTA AND CFS1G AND S1GM18):M | | Yes o No o N/A o | |
| FT47.5 | | | EDCA Parameter Set frame | | 9.6.24 (Unprotected S1G Action frame details) | | (CFAP AND CFS1G):O | | Yes o No o N/A o | |
| FT47.6 | | | EL Operation frame | | 9.6.24 (Unprotected S1G Action frame details) | | (CFIndepSTA AND CFS1G AND S1GM21):M | | Yes o No o N/A o | |
| FT47.7 | | | TWT Setup frame | | 9.6.24 (Unprotected S1G Action frame details) | | (CFS1G AND S1GM6.3):M | | Yes o No o N/A o | |
| FT47.8 | | | TWT Teardown frame | | 9.6.24 (Unprotected S1G Action frame details) | | (CFS1G AND S1GM6.5):M | | Yes o No o N/A o | |
| FT47.9 | | | Sectorized Group ID List frame | | 9.6.24 (Unprotected S1G Action frame details) | | (CFAP AND CFS1G AND S1GM11):M | | Yes o No o N/A o | |
| FT47.10 | | | Sector ID feedback frame | | 9.6.24 (Unprotected S1G Action frame details) | | (CFIndepSTA AND CFS1G AND S1GM11):M | | Yes o No o N/A o | |
| FT47.11 | | | Header compression frame as a request | |  | | (CFS1G AND S1GM16):O | | Yes o No o N/A o | |
| FT47.12 | | | Header Compression frame as a response | |  | | CFS1G:M | | Yes o No o N/A o | |
| FT47.13 | | | TWT Information frame | |  | | (CFS1G AND S1GM6.1):O  (CFS1G AND S1GM6.2):O | | Yes o No o N/A o | |
| FT48 | | | S1G Action frame | | 9.6.25 (S1G Action frame details) | | (RL1 OR S1GM6.13):M | | Yes o No o N/A o | |
| FT48.1 | | | Reachable Address Update frame | | 9.6.25 (S1G Action frame details) | | RL1:M | | Yes o No o N/A o | |
| FT48.2 | | | Relay Activation Request frame | |  | | RL1:O | | Yes o No o N/A o | |
| FT48.3 | | | Relay Activation Response frame | |  | | RL1:M | | Yes o No o N/A o | |
| FT48.4 | | | Protected TWT Setup frame | | 9.6.25 (S1G Action frame details) | | S1GM6.13:M | | Yes o No o N/A o | |
| FT48.5 | | | Protected TWT Teardown frame | | 9.6.25 (S1G Action frame details) | | S1GM6.13:M | | Yes o No o N/A o | |
| FT48.6 | | | Protected TWT Information frame | | 9.6.25 (S1G Action frame details) | | S1GM6.13:M | | Yes o No o N/A o | |
| FT49 | | | Flow Control Action frame | | 9.6.26 (Flow Control Action frame details) | | CFS1G:M | | Yes o No o N/A o | |
| FT49.1 | | | Flow Suspension frame | | 9.6.26 (Flow Control Action frame details) | | (CFS1G AND S1GM17.1):M | | Yes o No o N/A o | |
| FT49.2 | | | Flow Resumption frame | | 9.6.26 (Flow Control Action frame details) | | (CFS1G AND S1GM17.1):O | | Yes o No o N/A o | |
| FT50 | | | Control Response MCS Negotiation frame | | 9.6.27 (Control Response MCS Negotiation frame details) | | CFS1G AND S1GM28:M | | Yes o No o N/A o | |
| FT50.1 | | | Control Response MCS Negotiation Request | | 9.6.27 (Control Response MCS Negotiation frame details) | | (CFS1G AND S1GM28):O | | Yes o No o N/A o | |
| FT50.2 | | | Control Response MCS Negotiation Response | | 9.6.27 (Control Response MCS Negotiation frame details) | | (CFS1G AND S1GM28):M | | Yes o No o N/A o | |
| FT51 | | | LPD MSDU | | 5.1.4 (MSDU format) | | M | | Yes o No o N/A | |
| FT52 | | | EPD MSDU | | 5.1.4 (MSDU format), 11.51 (EPD operation) | | O | | Yes o No o N/A | |
| (11ax)FT53 | | | Trigger frame | | Clause 9 (Frame formats) | | CFHE:M | | Yes o No o N/A o | |
| (11ay)FT54 | | | Sector Ack | | Clause 9 (Frame formats) | | EDMG-M16.4:M | | Yes o No o | |
| (11ay)FT55 | | | Block Ack Schedule | | Clause 9 (Frame formats) | | EDMG-M9.2:M | | Yes o No o | |
| (11ay)FT56 | | | TDD Beamforming | | Clause 9 (Frame formats) | | CFTDD:M | | Yes o No o | |
| FT56.1 | | | DMG Sensing Request | | 9.3.1.25.5 | | CFWLS>45G:M | | Yes o No o N/A o | |
| FT56.2 | | | DMG Sensing Reponse | | 9.3.1.25.6 | | CFWLS>45G:M | | Yes o No o N/A o | |
| FT56.3 | | | DMG Sensing Poll | | 9.3.1.25.7 | | CFWLS>45G:M | | Yes o No o N/A o | |
| (11ba)FT57 | | | WUR Beacon frame | | 9.9.3.1 (WUR Beacon frame format) | | (CFWUR and CFAP):M | | Yes o No o N/A o | |
| (11ba)FT58 | | | Individually addressed and broadcast FL WUR Wake-up frame | | 9.9.3.2 (WUR Wake-up frame format) | | (CFWUR and CFAP):M | | Yes o No o N/A o | |
| (11ba)FT59 | | | FL WUR Wake-up frame with a WUR group ID | | 9.9.3.2 (WUR Wake-up frame format) | | (CFWUR and CFAP):O | | Yes o No o N/A o | |
| (11ba)FT60 | | | VL WUR Wake-up frame | | 9.9.3.2 (WUR Wake-up frame format) | | (CFWUR and CFAP):O | | Yes o No o N/A o | |
| (11ba)FT61 | | | WUR Short Wake-up frame | | 9.9.3.5 (WUR Short Wake-up frame format) | | (CFWUR and CFAP):O | | Yes o No o N/A o | |
| (11ba)FT62 | | | WUR Discovery frame | | 9.9.3.3 (WUR Discovery frame format) | | (CFWUR and CFAP):O | | Yes o No o N/A o | |
| (11ba)FT63 | | | WUR Vendor Specific frame | | 9.9.3.4 (WUR Vendor Specific frame format) | | (CFWUR and CFAP):O | | Yes o No o N/A o | |
| (11ba)FT64 | | | WUR Mode Setup frame | | 9.6.33.2 (WUR Mode Setup frame format) | | CFWUR:M | | Yes o No o N/A o | |
| (11ba)FT65 | | | WUR Mode Teardown frame | | 9.6.33.3 (WUR Mode Teardown frame format) | | CFWUR:M | | Yes o No o N/A o | |
| FTxx | | | Ranging/Sensing NDP Announcement frame | | 9.3.1.19 | | CFWLS<7G: M | | Yes o No o N/A o | |
| FTxx | | | Ranging/Sensing Trigger frame | | 9.3.1.22.1 | | CFWLS<7G: M | | Yes o No o N/A o | |
| FTxx.1 | | | Sensing Poll | | 9.3.1.22.14.1 | | CFWLS<7G: M | | Yes o No o N/A o | |
| FTxx.2 | | | Sensing Sounding | | 9.3.1.22.14.2 | | CFWLS<7G: M | | Yes o No o N/A o | |
| FTxx.3 | | | Sensing Report | | 9.3.1.22.14.3 | | CFWLS<7G: M | | Yes o No o N/A o | |
| FTxx.4 | | | Sensing Threshold-based Report Poll | | 9.3.1.22.14.4 | | CFWLS<7G: M | | Yes o No o N/A o | |
| FTxx | | | WLS Action frames | |  | |  | |  | |
| FTxx.1 | | | Sensing Measurement Setup Request | | 9.6.7.49 | | WLS1: M | | Yes o No o N/A o | |
| FTxx.2 | | | Sensing Measurement Setup Response | | 9.6.7.50 | | WLS1: M | | Yes o No o N/A o | |
| FTxx.3 | | | Sensing Measurement Report | | 9.6.7.51 | | WLS1: M | | Yes o No o N/A o | |
| FTxx.4 | | | Sensing Measurement Setup Terminationm | | 9.6.7.52 | | WLS1: M | | Yes o No o N/A o | |
| FTxx.5 | | | Sensing Measurement Setup Query | | 9.6.7.53 | | WLS1: M | | Yes o No o N/A o | |
| FTxx.6 | | | SBP Reuest | | 9.6.7.54 | | WLS2: M | | Yes o No o N/A o | |
| FTxx.7 | | | SBP Response | | 9.6.7.55 | | WLS2: M | | Yes o No o N/A o | |
| FTxx.8 | | | SBP Termination | | 9.6.7.56 | | WLS2: M | | Yes o No o N/A o | |
| FTxx.7 | | | SBP Report | | 9.6.7.57 | | WLS2: M | | Yes o No o N/A o | |
| FTxx | | | WLS DMG Action frames | |  | |  | |  | |
| FTxx.1 | | | Protected DMG Sensing Measurement Setup Request | | 9.6.19.24 | | WLS3: M | | Yes o No o N/A o | |
| FTxx.2 | | | Protected DMG Sensing Measurement Setup Response | | 9.6.19.25 | | WLS3: M | | Yes o No o N/A o | |
| FTxx.3 | | | Protected DMG Sensing SBP Request | | 9.6.19.26 | | WLS3: M | | Yes o No o N/A o | |
| FTxx.4 | | | Protected DMG Sensing SBP Response | | 9.6.19.27 | | WLS3: M | | Yes o No o N/A o | |
| FTxx.5 | | | Protected DMG Sensing SBP Report | | 9.6.19.28 | | WLS3: M | | Yes o No o N/A o | |
|  | | | Is reception of the following MAC frames supported? | | Clause 9 (Frame formats) | |  | |  | |
| \*FR1 | | | Association Request | | Clause 9 (Frame formats) | | (CFAP OR CFPCP):M | | Yes o No o N/A o | |
| \*FR2 | | | Association Response | | Clause 9 (Frame formats) | | (CFSTAofAP1 OR CFPBSSnotPCP):M | | Yes o No o N/A o | |
| FR3 | | | Reassociation Request | | Clause 9 (Frame formats) | | (CFAP OR CFPCP):M | | Yes o No o N/A o | |
| FR4 | | | Reassociation Response | | Clause 9 (Frame formats) | | (CFSTAofAP OR CFPBSSnotPCP):M | | Yes o No o N/A o | |
| FR5 | | | Probe Request | | Clause 9 (Frame formats) | | (CFAP OR CFIBSS OR CFPCP OR CFMBSS):M | | Yes o No o N/A o | |
| FR6 | | | Probe Response | | Clause 9 (Frame formats) | | (CFSTAofAP OR CFIBSS OR CFPBSSnotPCP OR CFMBSS):M | | Yes o No o N/A o | |
| FR7 | | | Beacon | | Clause 9 (Frame formats) | | (NOT CFOCB AND (NOT CFS1G)):M  not CFDMG AND (NOT CFS1G)):M | | Yes o No o N/A o | |
| FR8 | | | ATIM | | Clause 9 (Frame formats) | | (CFSTAofAP OR CFIBSS OR CFMBSS) AND not CFDMG:M | | Yes o No o N/A o | |
| FR9 | | | Disassociation | | Clause 9 (Frame formats) | | FR1 OR FR2:M | | Yes o No o N/A o | |
| FR10 | | | Authentication | | Clause 9 (Frame formats) | | CFAP AND not CFDMG:M  CFIBSS OR CFPBSS OR (CFAP AND CFDMG):O | | Yes o No o N/A o | |
| FR11 | | | Deauthentication | | Clause 9 (Frame formats) | | FR10:M | | Yes o No o N/A o | |
| FR12 | | | PS-Poll | | Clause 9 (Frame formats) | | CFAP:M | | Yes o No o N/A o | |
| FR13 | | | RTS | | Clause 9 (Frame formats) | | M | | Yes o No o | |
| FR14 | | | CTS | | Clause 9 (Frame formats) | | not CFDMG AND NOT CFS1G):M  (CFS1G AND VHTM3.1):O | | Yes o No o | |
| FR15 | | | Ack | | Clause 9 (Frame formats) | | NOT CFS1G:M  CFS1G AND VHTM3.1 OR S1GM28):O | | Yes o No o | |
| FR16 | | | CF-End | | Clause 9 (Frame formats) | | (NOT CFOCB):M | | Yes o No o N/A o | |
| FR17 | | | *Reserved* | |  | |  | |  | |
| FR18 | | | Data | | Clause 9 (Frame formats) | | not CFDMG:M | | Yes o No o | |
| FR19 | | | *Reserved* | |  | |  | |  | |
| FR20 | | | *Reserved* | |  | |  | |  | |
| FR21 | | | *Reserved* | |  | |  | |  | |
| FR22 | | | Null | | Clause 9 (Frame formats) | | not CFDMG:M | | Yes o No o | |
| FR23 | | | *Reserved* | |  | |  | |  | |
| FR24 | | | *Reserved* | |  | |  | |  | |
| FR25 | | | *Reserved* | |  | |  | |  | |
| FR26 | | | Timing Advertisement frame | | Clause 9 (Frame formats) | | O | | Yes o No o | |
| FR27 | | | QoS Data | | Clause 9 (Frame formats) | | CFQoS:M | | Yes o No o N/A o | |
| FR28 | | | QoS Null | | Clause 9 (Frame formats) | | CFQoS:M | | Yes o No o N/A o | |
| FR29 | | | BlockAckReq | | Clause 9 (Frame formats) | | CFQoS:O  HTM3.1:M | | Yes o No o N/A o | |
| FR30 | | | BlockAck | | Clause 9 (Frame formats) | | CFQoS:O  HTM3.5:M | | Yes o No o N/A o | |
| FR31 | | | Poll | | Clause 9 (Frame formats) | | CFDMG:M | | Yes o No o N/A o | |
| FR32 | | | SPR | | Clause 9 (Frame formats) | | CFDMG:M | | Yes o No o N/A o | |
| FR33 | | | Grant | | Clause 9 (Frame formats) | | CFDMG:M | | Yes o No o N/A o | |
| FR34 | | | DMG CTS | | Clause 9 (Frame formats) | | CFDMG:M | | Yes o No o N/A o | |
| FR35 | | | DMG DTS | | Clause 9 (Frame formats) | | CFDMG:M | | Yes o No o N/A o | |
| FR36 | | | *Reserved* | |  | |  | |  | |
| FR37 | | | SSW | | Clause 9 (Frame formats) | | CFDMG:M | | Yes o No o N/A o | |
| FR38 | | | SSW-Feedback | | Clause 9 (Frame formats) | | CFDMG:M | | Yes o No o N/A o | |
| FR39 | | | SSW-Ack | | Clause 9 (Frame formats) | | CFDMG:M | | Yes o No o N/A o | |
| FR40 | | | DMG Beacon | | Clause 9 (Frame formats) | | (CFSTAofAP OR CFIBSS OR CFPBSS) AND CFDMG:M | | Yes o No o N/A o | |
| FR41 | | | VHT NDP Announcement | | Clause 9 (Frame formats) | | VHTM4.2:M  TVHTM4.2:M | | Yes o No o N/A o | |
| FR42 | | | Beamforming Report Poll | | Clause 9 (Frame formats) | | VHTM4.2:O  VHTM4.4:M  TVHTM4.2:O  TVHTM4.4:M | | Yes o No o N/A o | |
| FR43 | | | Reception of Operating Mode Notification frame and Operating Mode Notification element | | 9.6.22.4 (Operating Mode Notification frame format), 9.4.2.165 (Operating Mode Notification element), 11.40 (Notification of operating mode changes) | | CFVHT:M  CFTVHT:M | | Yes o No o N/A o | |
| FR44 | | | TACK | | Clause 9 (Frame formats) | | (CFAP AND CFS1G):O  (CFIndepSTA AND CFS1G AND S1GM7.3 OR S1GM6.1):M | | Yes o No o N/A o | |
| FR45 | | | S1G Beacon | | Clause 9 (Frame formats) | | CFS1G:M | | Yes o No o N/A o | |
| FR46 | | | PV1 frame | | 9.8 (MAC frame format for PV1 frames)(#2288) | | CFS1G:O | | Yes o No o N/A o | |
| FR46.1 | | | STACK frame | | 9.8 (MAC frame format for PV1 frames)(#2288) | | (CFS1G AND S1GM6.1):M | | Yes o No o N/A o | |
| FR46.2 | | | BAT frame | | 9.8 (MAC frame format for PV1 frames)(#2288) | | (CFS1G AND S1GM6.1 AND QB4.1 OR):M | | Yes o No o N/A o | |
| FR46.3 | | | PV1 Action frame | | 9.8 (MAC frame format for PV1 frames)(#2288) | | CFS1G AND (S1GM20.1 OR S1GM20.3 OR S1GM20.5):M  CFS1G AND (S1GM20.2 OR S1GM20.5):O  :O | | Yes o No o N/A o | |
| FR46.4 | | | PV1 Action No Ack frame | | 9.8 (MAC frame format for PV1 frames)(#2288) | | CFS1G AND (S1GM20.1 OR S1GM20.3 OR S1GM20.5):M  CFS1G AND (S1GM20.2 OR S1GM20.5):O | | Yes o No o N/A o | |
| FR46.5 | | | PV1 Probe Response frame | | 9.8 (MAC frame format for PV1 frames)(#2288) | | CFS1G:O | | Yes o No o N/A o | |
| FR46.6 | | | PV1 Data frame | | 9.8 (MAC frame format for PV1 frames)(#2288) | | CFS1G AND (S1GM20.1 OR S1GM20.3 OR S1GM20.4):M  CFS1G AND (S1GM20.2 OR S1GM20.5):O | | Yes o No o N/A o | |
| FR46.7 | | | Resource Allocation | | 9.8 (MAC frame format for PV1 frames)(#2288) | | (CFIndepSTA AND CFS1G AND S1GM22.5):M | | Yes o No o N/A o | |
| FR47 | | | NDP CMAC PPDUs | | 23.3.12 (NDP CMAC PPDUs) | | CFS1G:M | | Yes o No o N/A o | |
| FR47.1 | | | NDP CTS | | 23.3.12 (NDP CMAC PPDUs) | | CFS1G:M | | Yes o No o N/A o | |
| FR47.2 | | | NDP PS-Poll | | 23.3.12 (NDP CMAC PPDUs) | | (CFAP AND CFS1G):O | | Yes o No o N/A o | |
| FR47.3 | | | NDP ACK | | 23.3.12 (NDP CMAC PPDUs) | | CFS1G:M | | Yes o No o N/A o | |
| FR47.4 | | | NDP PS-Poll-Ack | | 23.3.12 (NDP CMAC PPDUs) | | (CFIndepSTA AND CFS1G AND FT46.2):M | | Yes o No o N/A o | |
| FR47.5 | | | NDP BlockAck | | 23.3.12 (NDP CMAC PPDUs) | | (CFS1G AND HTM5.3):M | | Yes o No o N/A o | |
| FR47.6 | | | NDP Beamforming Report Poll | | 23.3.12 (NDP CMAC PPDUs) | | (CFIndepSTA AND CFS1G):O | | Yes o No o N/A o | |
| FR47.7 | | | NDP Paging | | 23.3.12 (NDP CMAC PPDUs) | | (CFS1G AND S1GM6.9):M | | Yes o No o N/A o | |
| FR47.8 | | | NDP Probe Request | | 23.3.12 (NDP CMAC PPDUs) | | (CFAP AND CFS1G):M | | Yes o No o N/A o | |
| FR47.9 | | | NDP CF-End | | 23.3.12 (NDP CMAC PPDUs) | | (CFIndepSTA AND CFS1G):O | | Yes o No o N/A o | |
| FR48 | | | Unprotected S1G Action frame | | 9.6.24 (Unprotected S1G Action frame details) | | CFS1G:M | | Yes o No o N/A o | |
| FR48.1 | | | AID Switch Request frame | | 9.6.24 (Unprotected S1G Action frame details) | | (CFIndepSTA AND CFS1G AND (S1GM13 OR S1GM18)):M | | Yes o No o N/A o | |
| FR48.2 | | | AID Switch Response frame | | 9.6.24 (Unprotected S1G Action frame details) | | (CFAP AND CFS1G OR (S1GM13 OR S1GM18)):M | | Yes o No o N/A o | |
| FR48.3 | | | Sync Control frame | | 9.6.24 (Unprotected S1G Action frame details) | | (CFIndepSTA AND CFS1G AND S1GM8.1):M | | Yes o No o N/A o | |
| FR48.4 | | | STA Information Announcement frame | | 9.6.24 (Unprotected S1G Action frame details) | | (CFAP AND CFS1G AND S1GM18):M | | Yes o No o N/A o | |
| FR48.5 | | | EDCA Parameter Set frame | | 9.6.24 (Unprotected S1G Action frame details) | | (CFIndepSTA AND CFS1G):M | | Yes o No o N/A o | |
| FR48.6 | | | EL Operation frame | | 9.6.24 (Unprotected S1G Action frame details) | | (CFAP AND CFS1G AND S1GM21):M | | Yes o No o N/A o | |
| FR48.7 | | | TWT Setup frame | | 9.6.24 (Unprotected S1G Action frame details) | | (CFS1G AND S1GM6.2):M | | Yes o No o N/A o | |
| FR48.8 | | | TWT Teardown frame | | 9.6.24 (Unprotected S1G Action frame details) | | (CFS1G AND S1GM6.5):M | | Yes o No o N/A o | |
| FR48.9 | | | Sectorized Group ID List frame | | 9.6.24 (Unprotected S1G Action frame details) | | (CFIndepSTA AND CFS1G AND S1GM11):M | | Yes o No o N/A o | |
| FR48.10 | | | Sector ID feedback frame | | 9.6.24 (Unprotected S1G Action frame details) | | (CFAP AND CFS1G AND S1GM11):M | | Yes o No o N/A o | |
| FR48.11 | | | Header Compression frame | |  | | CFS1G: M | | Yes o No o N/A o | |
| FR48.12 | | | Header Compression frame | |  | | (CFS1G AND FT47.11):M | | Yes o No o N/A o | |
| FR48.13 | | | TWT Information frame | |  | | (CFS1G AND S1GM6):M | | Yes o No o N/A o | |
| FR49 | | | S1G Action frame | | 9.6.25 (S1G Action frame details) | | (CFAP AND CFS1G):O | | Yes o No o N/A o | |
| FR49.1 | | | Reachable Address Update frame | | 9.6.25 (S1G Action frame details) | | RL1:M | | Yes o No o N/A o | |
| FR49.2 | | | Relay Activation Request frame | | 9.6.25 (S1G Action frame details) | | RL1:M | | Yes o No o N/A o | |
| FR49.3 | | | Relay Activation Response frame | | 9.6.25 (S1G Action frame details) | | RL1:M | | Yes o No o N/A o | |
| FR49.4 | | | Protected TWT Setup frame | | 9.6.25 (S1G Action frame details) | | S1GM6.13:M | | Yes o No o N/A o | |
| FR49.5 | | | Protected TWT Teardown frame | | 9.6.25 (S1G Action frame details) | | S1GM6.13:M | | Yes o No o N/A o | |
| FR49.6 | | | Protected TWT Information frame | | 9.6.25 (S1G Action frame details) | | S1GM6.13:M | | Yes o No o N/A o | |
| FR50 | | | Flow Control Action frame | | 9.6.26 (Flow Control Action frame details) | | (CFIndepSTA AND CFS1G):O | | Yes o No o N/A o | |
| FR50.1 | | | Flow Suspension frame | | 9.6.26 (Flow Control Action frame details) | | (CFIndepSTA AND CFS1G AND S1GM17):M | | Yes o No o N/A o | |
| FR50.2 | | | Flow Resumption frame | | 9.6.26 (Flow Control Action frame details) | | (CFIndepSTA AND CFS1G AND S1GM17):M | | Yes o No o N/A o | |
| FR51 | | | Control Response MCS Negotiation frame | | 9.6.27 (Control Response MCS Negotiation frame details) | | CFS1G AND S1GM28:M | | Yes o No o N/A o | |
| FR51.1 | | | Control Response MCS Negotiation Request frame | | 9.6.27 (Control Response MCS Negotiation frame details) | | (CFS1G AND S1GM28):M | | Yes o No o N/A o | |
| FR51.2 | | | Control Response MCS Negotiation Response frame | | 9.6.27 (Control Response MCS Negotiation frame details) | | (CFS1G AND S1GM28):M | | Yes o No o N/A o | |
| FR52 | | | LPD MSDU | | 5.1.4 (MSDU format) | | M | | Yes o No o N/A o | |
| FR53 | | | EPD MSDU | | 5.1.4 (MSDU format), 11.51 (EPD operation) | | FT52:M | | Yes o No o N/A o | |
| (11ax)FR54 | | | Trigger frame | | Clause 9 (Frame formats) | | CFHE:O | | Yes o No o N/A o | |
| (11ay)FR55 | | | Sector Ack | | Clause 9 (Frame formats) | | EDMG-M16.4:M | | Yes o No o | |
| (11ay)FR56 | | | Block Ack Schedule | | Clause 9 (Frame formats) | | EDMG-M9.2:M | | Yes o No o | |
| (11ay)FR57 | | | TDD Beamforming | | Clause 9 (Frame formats) | | CFTDD:M | | Yes o No o | |
| FR57.1 | | | DMG Sensing Request | | 9.3.1.25.5 | | CFWLS>45G:M | | Yes o No o N/A o | |
| FR57.2 | | | DMG Sensing Reponse | | 9.3.1.25.6 | | CFWLS>45G:M | | Yes o No o N/A o | |
| FR576.3 | | | DMG Sensing Poll | | 9.3.1.25.7 | | CFWLS>45G:M | | Yes o No o N/A o | |
| (11ba)FR58 | | | WUR Beacon frame | | 9.9.3.1 (WUR Beacon frame format) | | (CFWUR AND CFSTAofAP):M | | Yes o No o N/A o | |
| (11ba)FR59 | | | Individually addressed and broadcast FL WUR Wake-up frame | | 9.9.3.2 (WUR Wake-up frame format) | | (CFWUR AND CFSTAofAP):M | | Yes o No o N/A o | |
| (11ba)FR60 | | | FL WUR Wake-up frame with a WUR group ID | | 9.9.3.2 (WUR Wake-up frame format) | | (CFWUR AND CFSTAofAP):O | | Yes o No o N/A o | |
| (11ba)FR61 | | | VL WUR Wake-up frame | | 9.9.3.2 (WUR Wake-up frame format) | | (CFWUR AND CFSTAofAP):O | | Yes o No o N/A o | |
| (11ba)FR62 | | | WUR Discovery frame | | 9.9.3.3 (WUR Discovery frame format) | | (CFWUR AND CFSTAofAP):O | | Yes o No o N/A o | |
| (11ba)FR63 | | | WUR Vendor Specific frame | | 9.9.3.4 (WUR Vendor Specific frame format) | | (CFWUR AND CFSTAofAP):O | | Yes o No o N/A o | |
| (11ba)FR64 | | | WUR Mode Setup frame | | 9.6.33.2 (WUR Mode Setup frame format) | | CFWUR:M | | Yes o No o N/A o | |
| (11ba)FR65 | | | WUR Mode Teardown frame | | 9.6.33.3 (WUR Mode Teardown frame format) | | CFWUR:M | | Yes o No o N/A o | |
| (11ba)FR66 | | | WUR Short Wake-up frame | | 9.9.3.5 (WUR Short Wake-up frame format) | | CFWUR:O | | Yes o No o N/A o | |
| FRxx | | | Ranging/Sensing NDP Announcement frame | | 9.3.1.19 | |  | | Yes o No o N/A o | |
| FRxx | | | Ranging/Sensing Trigger frame | | 9.3.1.22.1 | |  | | Yes o No o N/A o | |
| FRxx.1 | | | Sensing Poll | | 9.3.1.22.14.1 | |  | | Yes o No o N/A o | |
| FRxx.2 | | | Sensing Sounding | | 9.3.1.22.14.2 | |  | | Yes o No o N/A o | |
| FRxx.3 | | | Sensing Report | | 9.3.1.22.14.3 | |  | | Yes o No o N/A o | |
| FTRxx.4 | | | Sensing Threshold-based Report Poll | | 9.3.1.22.14.4 | |  | | Yes o No o N/A o | |
| FRxx | | | WLS Action ftrames | |  | |  | |  | |
| FRxx.1 | | | Sensing Measurement Setup Request | | 9.6.7.49 | | WLS1: M | | Yes o No o N/A o | |
| FRxx.2 | | | Sensing Measurement Setup Response | | 9.6.7.50 | | WLS1: M | | Yes o No o N/A o | |
| FRxx.3 | | | Sensing Measurement Report | | 9.6.7.51 | | WLS1: M | | Yes o No o N/A o | |
| FRxx.4 | | | Sensing Measurement Setup Terminationm | | 9.6.7.52 | | WLS1: M | | Yes o No o N/A o | |
| FRxx.5 | | | Sensing Measurement Setup Query | | 9.6.7.53 | | WLS1: M | | Yes o No o N/A o | |
| FRxx.6 | | | SBP Reuest | | 9.6.7.54 | | WLS2: M | | Yes o No o N/A o | |
| FRxx.7 | | | SBP Response | | 9.6.7.55 | | WLS2: M | | Yes o No o N/A o | |
| FRxx.8 | | | SBP Termination | | 9.6.7.56 | | WLS2: M | | Yes o No o N/A o | |
| FTxx.7 | | | SBP Report | | 9.6.7.57 | | WLS2: M | | Yes o No o N/A o | |
| FTxx | | | WLS DMG Action frames | |  | |  | | Yes o No o N/A o | |
| FTxx.1 | | | Protected DMG Sensing Measurement Setup Request | | 9.6.19.24 | | WLS3: M | | Yes o No o N/A o | |
| FTxx.2 | | | Protected DMG Sensing Measurement Setup Response | | 9.6.19.25 | | WLS3: M | | Yes o No o N/A o | |
| FTxx.3 | | | Protected DMG Sensing SBP Request | | 9.6.19.26 | | WLS3: M | | Yes o No o N/A o | |
| FTxx.4 | | | Protected DMG Sensing SBP Response | | 9.6.19.27 | | WLS3: M | | Yes o No o N/A o | |
| FTxx.5 | | | Protected DMG Sensing SBP Report | | 9.6.19.28 | | WLS3: M | | Yes o No o N/A o | |

* WLS Features

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Item | Protocol capability | References | Status | Support |
| WLS1 | WLAN Sensing Procedure |  |  |  |
| \*WLS1.1 | Session Setup | 11.55.1.3 | CFWLS<7G:M | Yes o No o N/A o |
| WLS1.2 | Sensing Measurement Setup | 11.55.1.4 | WLS1.1: M | Yes o No o N/A o |
| WLS1.3 | Sensing measurement instance | 11.55.1.5 | WLS1.1: M | Yes o No o N/A o |
| WLS1.4 | Sensing Measurement setup termination | 11.55.1.6 | WLS1.1: M | Yes o No o N/A o |
| WLS1.5 | Sensing session termination |  | CFWLS<7G:M | Yes o No o N/A o |
| \*WLS2 | SBP Procedure | 11.55.2 | CFWLS<7G: O |  |
| WLS2.1 | SBP Setup | 11.55.2.2 | WLS2: M | Yes o No o N/A o |
| WLS2.2 | SBP Reporting | 11.55.2.3 | WLS2: M | Yes o No o N/A o |
| WLS2.3 | SBP Termination | 11.55.2.4 | WLS2: M | Yes o No o N/A o |
| \*WLS3 | DMG Sensing Procedure |  | CFWLS>45G: M |  |
| WLS3.1 | DMG Sensing Session Setup | 11.55.3.3 | WLS3: M | Yes o No o N/A o |
| WLS3.2 | DMG Sensing Measurement Setup | 11.5.3.4 | WLS3: M | Yes o No o N/A o |
| WLS3.3 | DMG Sensing burst | 11.5.3.5 | WLS3: M | Yes o No o N/A o |
| WLS3.4 | DMG Sensing instance | 11.5.3.6 | WLS3: M | Yes o No o N/A o |
| WLS3.5 | DMG sensing measurement setup termination | 11.5.3.7 | WLS3: M | Yes o No o N/A o |
| WLS3.6 | DMG sensing session termination | 11.5.3.8 | WLS3: M | Yes o No o N/A o |

**References:**