**IEEE P802.15**

**Wireless Personal Area Networks**

|  |  |
| --- | --- |
| Project | IEEE P802.15 Wireless Specialty Networks (WSNs) |
| Title | **D6 PICS Correction** |
| Date Submitted | 17 May 2022 |
| Source | Bober, Kai LennertFraunhofer HHI | Voice: -Fax: -E-mail: bober@ieee.org |
| Re: |  |
| Abstract | This document contains an updated PICS for D7 |
| Purpose | Aid comment resolution |
| Notice | This document has been prepared to assist the IEEE P802.15. It is offered as a basis for discussion and is not binding on the contributing individual(s) or organization(s). The material in this document is subject to change in form and content after further study. The contributor(s) reserve(s) the right to add, amend or withdraw material contained herein. |
| Release | The contributor acknowledges and accepts that this contribution becomes the property of IEEE and may be made publicly available by P802.15. |

**Legend:**

* Arial size 13 indicates subsections for individual comments
* Red underlined text needs to be adapted during the comment implementation (e.g., because it is a reference).
* Bold italic text is an instruction to the editor to implement the text

R2-59 R2-60 R2-61 R2-62 R2-63 R2-64 R2-65 R2-66

Replace term “device” with “member” in the whole document when considering a device that is a member of an OWPAN.

Add the following after P138L17:

(item number && item number) Applies if both conditions are supported at the same time, i.e., serves as a logical and.

Replace Tables in Annex D, D3 with the following tables and update the references within the tables accordingly:

|  |
| --- |
| **Table** Error! No text of specified style in document.**.1—Optional item groups** |
| **Item** | **Item description** |
| O.PHY | At least one PHY must be supported |
| O.TYPE | At least one device type must be supported. |

|  |
| --- |
| **Table** Error! No text of specified style in document.**.2—Device types** |
| **Item** | **Item description** | **Reference** | **Status** | **Support** |
| DT-COO | Coordinator of an OWPAN. | **Error! Reference source not found.** | O.TYPE |  |
| DT-MEM | Member device in an OWPAN. | **Error! Reference source not found.** | O.TYPE |  |

|  |
| --- |
| **Table** Error! No text of specified style in document.**.3—General device functions** |
| **Item** | **Item description** | **Reference** | **Status** | **Support** |
| GDF1 | Transmit an MPDU with Frame Version zero | **Error! Reference source not found.** | M |  |
| GDF1.1 | Assign sequence numbers to outgoing MPDUs. | 6.7.1 | M |  |
| GDF2 | Receive an MPDU with Frame Version zero | **Error! Reference source not found.** | M |  |
| GDF2.1 | Parse sequence numbers of incoming MPDUs | **Error! Reference source not found.** | M |  |
| GDF2.2 | Filter duplicate MPDUs | 6.2.4 | M |  |
| GDF2.3 | Check MPDU FCS | 7.2.8 | M |  |
| GDF3 | Supports MD-SAP.request | **Error! Reference source not found.** | M |  |
| GDF4 | Supports MD-SAP.indication | **Error! Reference source not found.** | M |  |
| GDF5 | MLME interface |  | M |  |
| GDF5.1 | MLME-ASSOCIATE | 8.3.3 | DT-COO:MDT-MEM:M |  |
| GDF5.2 | MLME-DISASSOCIATE | 8.3.4 | DT-COO:MDT-MEM:M |  |
| GDF5.3 | MLME-GET | 8.3.5 | DT-COO:MDT-MEM:M |  |
| GDF5.4 | MLME-SET | 8.3.6 | DT-COO:MDT-MEM:M |  |
| GDF5.5 | MLME-SCAN | 8.3.7 | DT-MEM:M |  |
| GDF5.6 | MLME-START | 8.3.8 | DT-COO:M |  |
| GDF5.7 | MLME-STOP | 8.3.9 | DT-COO:M |  |

|  |
| --- |
| **Table** Error! No text of specified style in document.**.4—MAC routines** |
| **Item number** | **Item description** | **Reference** | **Status** | **Support** |
| **OWPAN management** |
| MR-OM1 | Start and maintain an OWPAN as coordinator |  | O |  |
| MR-OM1.1 | Associate a new device as member |  | DT-COO:M |  |
| MR-OM1.2 | Disassociate a member |  | DT-COO:M |  |
| MR-OM1.3 | Change an attribute in a member device |  | DT-COO:M |  |
| MR-OM2 | Member of an OWPAN |  | O |  |
| MR-OM2.1 | Scan for active OWPANs | **Error! Reference source not found.** | DT-MEM:M |  |
| MR-OM2.2 | Request association from a coordinator | 6.4.6 | DT-MEM:M |  |
| MR-OM2.3 | Disassociate from an OWPAN | **Error! Reference source not found.** | DT-MEM:M |  |
| MR-OM2.4 | Change attribute according to coordinator | **Error! Reference source not found.** | DT-MEM:M |  |
| MR-OM2.5 | Notify the coordinator about observed interference | **Error! Reference source not found.** | O |  |
| **Data transmission** |
| MR-DA1 | Transmit and receive a single MSDU in a data frame |  | M |  |
| MR-DA2 | Transmit and receive multiple MSDUs with the same destination and source in a data frame |  | O |  |
| MR-DA3 | Transmit and receive multiple MSDUs with different destinations and sources in a data frame |  | O |  |
| **Beacon-enabled channel access** |
| MR-BECA1 | Respect MIFS when operating in half duplex mode |  | M |  |
| MR-BECA2 | Support beacon-enabled channel access as coordinator |  | DT-COO:M |  |
| MR-BECA2.1 | Synchronize members |  | DT-COO:M |  |
| MR-BECA2.2 | Allocate time slices (GTS and RTS) |  | DT-COO:M |  |
| MR-BECA2.3 | Assign time slices to members |  | DT-COO:M |  |
| MR-BECA2.4 | Respect guard time when allocating TS |  | DT-COO:M |  |
| MR-BECA3 | Support beacon-enabled channel access as member |  | DT-MEM:M |  |
| MR-BECA3.1 | Synchronize to a coordinator |  | DT-MEM:M |  |
| MR-BECA3.2 | Perform random channel access |  | DT-MEM:M |  |
| MR-BECA3.3 | Transmit in assigned GTS |  | DT-MEM:M |  |
| MR-BECA3.4 | Report Queue state |  | O |  |
| **Distributed MIMO transmission** |
| MR-MIMO1 | Transmit a single PPDU concurrently via multiple OFEs | **Error! Reference source not found.** | DT-COO:M |  |
| MR-MIMO2 | Feedback explicit MIMO CSI measured at the PHY | **Error! Reference source not found.** | DT-MEM:M |  |
| **Adaptive transmission** |
| MR-AT1 | Transmit essential elements with the PHYs base MCS |  | M |  |
| MR-AT2 | Request use of an MCS from a device |  | PL-PMPHY1:M |  |
| MR-AT3 | Request use of a BAT from a device |  | PL-HBPHY1:M |  |
| **Fragmentation** |
| MR-FRAG1 | Fragment outgoing MPDUs | **Error! Reference source not found.** | O |  |
| MR-FRAG2 | Reassemble fragmented MPDUs | **Error! Reference source not found.** | O |  |
| **Retransmission** |
| MR-RT1 | Retransmit an MPDU on timeout | **Error! Reference source not found.** | M |  |
| MR-RT2 | Send and receive single ACK |  | M |  |
| MR-RT3 | Send and receive block ACK |  | O |  |
| **Relaying** |
| MR-RELAY1 | Relayed device | 6.10 | O |  |
| MR-RELAY2 | Relay device | 6.10 | O |  |
| MR-RELAY3 | Coordinator supporting relaying | 6.10 | O |  |

|  |
| --- |
| **Table** Error! No text of specified style in document.**.4— MAC frames** |
| **Item** | **Item description** | **Reference** | **TX****Status** | **TX****Support** | **RX****Status** | **RX****Support** |
| MF-MPDU1 | MPDUs with type data | 7.3 | M |  | M |  |
| MF-MPDU2 | MPDUs with type management | 7.4 | M |  | M |  |
| MF-MPDU3 | MPDUs with type control | 7.5 | M |  | M |  |
| MF-MPDU4 | Relay Control field in the MPDU |  | MR-RELAY1:MMR-RELAY2:MMR-RELAY3:M |  | MR-RELAY1:MMR-RELAY2:MMR-RELAY3:M |  |
| MF-MPDU5 | Fragmentation Control field in the MPDU |  | MR-FRAG1:MMR-FRAG2:M |  | MR-FRAG1:MMR-FRAG2:M |  |
| MF-EL1 | Single MSDU element |  | M |  | M |  |
| MF-EL2 | Multiple Address Aggregated MSDU element |  |  |  |  |  |
| MF-EL3 | Single Address Aggregated MSDU element |  |  |  |  |  |
| MF-ELX | Vendor Specific element |  | O |  | O |  |
| MF-ELX | Multiple Element Container element |  |  |  |  |  |
| MF-ELX | Multiple Device Element Container element |  |  |  |  |  |
| MF-ELX | Management Procedure Container element |  | M |  | M |  |
| MF-ELX | Association Request element |  | M |  | M |  |
| MF-ELX | Association Response element |  | M |  | M |  |
| MF-ELX | Disassociation Notification element |  | DTCOO1:MDTMEM1:M |  | DTCOO1:MDTMEM1:M |  |
| MF-ELX | Supported MCS element |  | M |  | M |  |
| MF-ELX | Capability List element |  |  |  |  |  |
| MF-ELX | Announcement element |  |  |  |  |  |
| MF-ELX | Attribute Change Request element |  |  |  |  |  |
| MF-ELX | Attribute Change Response element |  |  |  |  |  |
| MF-ELX | Alien Signal element |  |  |  |  |  |
| MF-ELX | Block ACK Request Element |  |  |  |  |  |
|  |  |  |  |  |  |  |
| MF-ELX | Sync element |  |  |  |  |  |
| MF-ELX | GTS Descriptor List elements |  | M |  |  |  |
| MF-ELX | GTS Descriptor element |  | M |  |  |  |
| MF-ELX | RTS Descriptor |  | M |  |  |  |
| MF-ELX | MCS Request element |  | O |  | O |  |
| MF-ELX | BAT Request element |  |  |  |  |  |
| MF-ELX | PM-PHY MCS element |  | (MR-AT2 && PL-PMPHY1):M |  | PL-PMPHY1:M |  |
| MF-ELX | HB-PHY MCS element |  | PL-HBPHY1:M |  | PL-HBPHY1:M |  |
| MF-ELX | Explicit MIMO Feedback element |  | MR-MIMO2:M |  | O |  |
| MF-ELX | Reachable Address element |  | MR-RELAY1:MMR-RELAY3:M |  | MR-RELAY2:M |  |
| MF-ELX | Relay Device Configuration Request element |  | MR-RELAY1:M |  | MR-RELAY1:M |  |
| MF-ELX | Relay Device Configuration Response element |  | MR-RELAY1:M |  | MR-RELAY1:M |  |
| MF-ELX | Relayed Device Configuration Request element |  | MR-RELAY1:M |  | MR-RELAY1:M |  |
| MF-ELX | Relayed Device Configuration Response element |  | MR-RELAY1:M |  | MR-RELAY1:M |  |

|  |
| --- |
| **Table** Error! No text of specified style in document.**.5—Physical layers** |
| **Item** | **Item description** | **Reference** | **Status** | **Support** |
| **PM-PHY** |
| PL-PMPHY1 | PM-PHY is supported | 10 | O.PHY |  |
| PL-PMPHY1.1 | PM-PHY MIMO Pilots | 10.2.6 | O |  |
| PL-PMPHY1.2 | 12.5 MHz rate | 10.2.8 | PL-PMPHY1:M |  |
| PL-PMPHY1.4 | 25 MHz rate | 10.2.8 | O |  |
| PL-PMPHY1.5 | 50 MHz rate | 10.2.8 | O |  |
| PL-PMPHY1.6 | 100 MHz rate | 10.2.8 | O |  |
| PL-PMPHY1.7 | 200 MHz rate | 10.2.8 | O |  |
| **HB-PHY** |
| PL-HBPHY1 | HB-PHY is supported | 11 | O.PHY |  |
| PL-HBPHY1.1 | 50 MHz bandwidth | 11 | PL-HBPHY1:M |  |
| PL-HBPHY1.1 | 100 MHz bandwidth | 11 | O |  |
| PL-HBPHY1.1 | 200 MHz bandwidth | 11 | O |  |