IEEE P802.15
Wireless Personal Area Networks

Project	IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs)	
Title	**Frame format figure fixes**	
Date Submitted	[May, 2010	
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Re:	[d1P802-15-4g_Draft_Standard.pdf]	
Abstract	[This document describes changes to clear up the frame format figures in the overview clause of the draft.]	
Purpose	[To resolve comments in LB51.]	
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1. Comments resolved

Comment IDs: 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 251, 252.

5. General description

5.5 Functional overview

5.5.3 Frame structure

Change subclause as shown.

The frame structures have been designed to keep the complexity to a minimum while at the same time making them sufficiently robust for transmission on a noisy channel. Each successive protocol layer adds tothe structure with layer-specific headers and footers. This standard defines four MAC frame structures:

- A beacon frame, used by a coordinator to transmit beacons
- A data frame, used for all transfers of data
- An acknowledgment frame, used for confirming successful frame reception
- A MAC command frame, used for handling all MAC peer entity control transfers

~~The structure of each of the four frame types is described in 5.5.3.1 through 5.5.3.4. The diagrams in these subclauses illustrate the fields that are added by each layer of the protocol.~~

Add the following to the end of 5.5.3 as shown.

The MAC frames are passed to the PHY as the PHY service data unit (PSDU), which becomes the PHY payload. The PHY frame structure is illustrated in Figure 9a

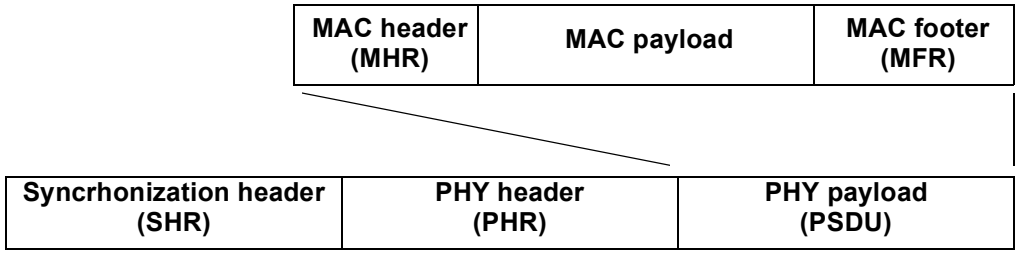

Figure 9a—Schematic view of the PHY packet

For PHYs other than the OFDM PHY, the SHR structure is illustrated in Figure 9b.

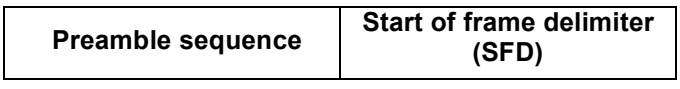

Figure 9b—Schematic view of the SHR for PHYs other than the OFDM PHY

For the OFDM SUN PHY, as defined in <xref 6.12b>, the SHR structure is illustrated in Figure 9c.

Short training field (STF)	Long training field (LTF)

Figure 9c—Schematic view of the SHR structure for the OFDM PHY

The format of the PHR is defined in Clause 6 for each of the PHYs.

The MHR structure for frames other than the Acknowledgment frame is illustrated in Figure 9d..

Frame control	Sequence number	Addressing fields	Auxiliary security header

Figure 9d—Schematic view of the MHR structure for MAC frames other than the Acknowledgment frame

The MHR structure for frames the Acknowledgment frame is illustrated in Figure 9e..

Frame control	Sequence number

Figure 9e—Schematic view of the MHR structure for the Acknowledgment frame

The contents of the MAC payload depends on the MAC frame type.

The MFR contains a cyclic redundancy check, as defiend in 7.2.19, that is used to verify that the PSDU was received correctly.

5.5.3.1 Beacon frame

Change 5.5.3.1 as shown and replace Figure 10 with the new figure shown:

Figure 10 shows the structure of the beacon frame, which originates from within the MAC sublayer. ~~A coordinator can transmit network beacons in a beacon-enabled PAN. The MAC payload contains the superframe specification, GTS fields, pending address fields, and beacon payload (see 7.2.2.1). The MAC payload is prefixed with a MAC header (MHR) and appended with a MAC footer (MFR). The MHR contains the MAC Frame Control field, beacon sequence number (BSN), addressing fields, and optionally the auxiliary security header. The MFR contains a 16-bit frame check sequence (FCS). The MHR, MAC payload, and MFR together form the MAC beacon frame (i.e., MPDU).~~

MHR	Superframe specification	GTS fields	Pending address fields	Beacon payload	MFR

Figure 10—Schematic view of the beacon frame

~~The MAC beacon frame is then passed to the PHY as the PHY service data unit (PSDU), which becomes the PHY payload. The PHY payload is prefixed with a synchronization header (SHR), containing the Preamble Sequence and Start-of-Frame Delimiter (SFD) fields, and a PHY header (PHR) containing the length of the PHY payload in octets. The SHR, PHR, and PHY payload together form the PHY packet (i.e., PPDU).~~

5.5.3.2 Data frame

Change 5.5.3.2 as shown and replace Figure 11 with the new figure shown:

Figure 11 shows the structure of the data frame, which originates from the upper layers.

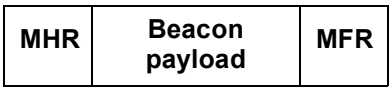

Figure 11—Schematic view of the data frame

The data payload is passed to the MAC sublayer and is referred to as the MAC service data unit (MSDU). ~~The MAC payload is prefixed with an MHR and appended with an MFR. The MHR contains the Frame Control field, data sequence number (DSN), addressing fields, and optionally the auxiliary security header.The MFR is composed of a 16-bit FCS. The MHR, MAC payload, and MFR together form the MAC data frame, (i.e., MPDU).~~

~~The MPDU is passed to the PHY as the PSDU, which becomes the PHY payload. The PHY payload is prefixed with an SHR, containing the Preamble Sequence and SFD fields, and a PHR containing the length of the PHY payload in octets. The preamble sequence and the data SFD enable the receiver to achieve symbol synchronization. The SHR, PHR, and PHY payload together form the PHY packet, (i.e., PPDU).~~

5.5.3.3 Acknowledgment frame

Change 5.5.3.3 as shown and replace Figure 12 with the new figure shown:

Figure 12 shows the structure of the acknowledgment frame, which originates from within the MAC sublayer. The MAC acknowledgment frame ~~is constructed from an MHR and an MFR; it~~ has no MAC payload. ~~The MHR contains the MAC Frame Control field and DSN. The MFR is composed of a 16-bit FCS. The MHR and MFR together form the MAC acknowledgment frame (i.e., MPDU)~~.

~~The MPDU is passed to the PHY as the PSDU, which becomes the PHY payload. The PHY payload is prefixed with the SHR, containing the Preamble Sequence and SFD fields, and the PHR containing the length of the PHY payload in octets. The SHR, PHR, and PHY payload together form the PHY packet, (i.e., PPDU).~~

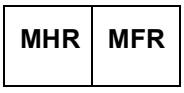

Figure 12—Schematic view of the acknowledgment frame

5.5.3.4 MAC command frame

Change 5.5.3.4 as shown and replace Figure 13 with the new figure shown:

Figure 13 shows the structure of the MAC command frame, which originates from within the MAC sublayer. ~~The MAC payload contains the Command Type field and the command payload (see 7.2.2.4). The~~

~~MAC payload is prefixed with an MHR and appended with an MFR. The MHR contains the MAC Frame Control field, DSN, addressing fields, and optionally the auxiliary security header. The MFR contains a 16-bit FCS. The MHR, MAC payload, and MFR together form the MAC command frame, (i.e., MPDU).~~

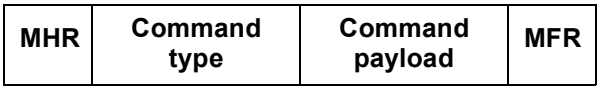

Figure 13—Schematic view of the command frame

~~The MPDU is then passed to the PHY as the PSDU, which becomes the PHY payload. The PHY payload is prefixed with an SHR, containing the Preamble Sequence and SFD fields, and a PHR containing the length of the PHY payload in octets. The preamble sequence enables the receiver to achieve symbol synchronization. The SHR, PHR, and PHY payload together form the PHY packet, (i.e., PPDU).~~