**IEEE P802.15**

**Wireless Personal Area Networks**

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| Project | IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs) |
| Title | **D2 Comments Resolution Based PHY VI MAC Frame Format Specification Revision**  |
| Date Submitted | May, 2017 |
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| Re: | Draft D2 Comment Resolution based PHY VI MAC Frame Format Specification Revision |
| Abstract | Details of Resolutions regarding to the submitted Comments on D2 are suggested for PHY VI MAC Frame Format Specification Revision. The PHY VI is designed to operate on the application services like LED ID, LiFi/CamCom, Digital Signage with Advertisement Information etc. |
| Purpose | Draft D2 Comments Resolutions and Editorial Revision. |
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# **1. PHY VI MAC Frame Format**

**5.2.1.1 Frame control field**

**5.2.1.1.4 PHY VI**

**VTASC frame control**

The frame version subfield specifies the version number corresponding to the frame. This subfield shall be set to 0b01 to indicate a frame compatible with IEEE Standard 802.15.7r1 and all other subfield values shall be reserved for future use.

The frame type subfieldspecifies the Frame Type used in VTASC MAC Frame. This field shall be set to one of the non-reserved values listed in Table 14.



**Table** **5- 1 – VTASC Frame Type Subfield**

The security enabled subfieldspecifies the Security on Data Frame is enable or not on transmission. This field is 1 bit in length, and it shall be set to one if the frame is protected by the MAC sublayer and shall be set to zero otherwise. The Auxiliary Security Header field of the MHR shall be present only if the Security Enabled subfield is set to one.

The frame pending subfield specifies the Pending on Data Frame is available or not on transmission. This field is 1 bit in length and shall be set to one if the device sending the frame has more data for the recipient. This subfield shall be set to zero otherwise.

The acknowledgment request subfield specifies whether an acknowledgment is required from the recipient device on receipt of a data or MAC command frame. This field is 1 bit in length and this subfield is set to one, the recipient device shall send an acknowledgment frame. If this subfield is set to zero, the recipient device shall not send an acknowledgment frame.

**Sequential Scalable 2D Code frame control**

The Sequential scalable 2D code frame control follows the same format as VTASC frame control. Refer VTASC frame control for more details.

**Invisible Data Embedding frame control**

The Invisible Data Embedding frame control follows the same format as VTASC frame control. Refer VTASC frame control for more details.

**5.2.1.2 Sequence Number field**

**5.2.1.2.4 PHY VI**

**VTASC Sequence Number**

The Sequence Number field is 1 octet in length and specifies the sequence identifier for the frame.

For a beacon frame, the Sequence Number field shall specify a BSN. For a data, acknowledgment, or MAC command frame, the Sequence Number field shall specify a DSN that is used to match an acknowledgment frame to the data or MAC command frame.

**Sequential Scalable 2D Code Sequence Number**

The Sequential scalable 2D code sequence number follows the same format as VTASC sequence number. Refer VTASC sequence number for more details.

**Invisible Data Embedding Sequence Number**

The Invisible Data Embedding sequence number follows the same format as VTASC sequence number. Refer VTASC sequence number for more details.

**5.2.1.4 Destination Address field**

**5.2.1.4.4 PHY VI**

**VTASC destination address**

The Destination Address field, when present, is either 2 octets or 8 octets in length, according to the value specified in the Destination Addressing Mode subfield of the frame control field, and specifies the address of the intended recipient of the frame.

A 16-bit value of 0xffff in this field shall represent the broadcast short address, which shall be accepted as a valid 16-bit short address by all devices currently listening to the channel.

This field shall be included in the MAC frame only if the Destination Addressing Mode subfield of the frame control field is nonzero.

**Sequential Scalable 2D Code destination address**

The Sequential scalable 2D code destination address field follows the same format as VTASC destination address field. Refer VTASC destination address field for more details.

**Invisible Data embedding destination address**

The Invisible Data Embedding destination address field follows the same format as VTASC destination address field. Refer VTASC destination address field for more details.

**5.2.1.6 Source Address field**

**5.2.1.6.4 PHY VI**

**VTASC source address**

The Source Address field, when present, is either 2 octets or 8 octets in length, according to the value specified in the Source Addressing Mode subfield of the frame control field, and specifies the address of the originator of the frame.

This field shall be included in the MAC frame only if the Source Addressing Mode subfield of the frame control field is 10 or 11.

**Sequential Scalable 2D Code source address**

The Sequential scalable 2D code source address field follows the same format as VTASC source address field. Refer VTASC source address field for more details.

**Invisible Data embedding source address**

The Invisible Data Embedding source address field follows the same format as VTASC source address field. Refer VTASC source address field for more details.

**5.2.1.8 Frame Payload field**

**5.2.1.8.4 PHY VI**

**VTASC payload field**

The Frame Payload field has a variable length and contains information specific to individual frame types. If the Security Enabled subfield is set to one in the frame control field, the frame payload is protected as defined by the security suite selected for that frame.

**Sequential Scalable 2D Code payload field**

The Sequential scalable 2D code payload field follows the same format as VTASC payload field. Refer VTASC payload field for more details.

**Invisible Data embedding payload field**

The Invisible Data Embedding payload field follows the same format as VTASC payload field. Refer VTASC payload field for more details.

**5.2.1.9 FCS field**

**5.2.1.9.4 PHY VI**

**VTASC FCS field**

The FCS field is 2 octets in length and the FCS is calculated over the MHR and MSDU parts of the frame. The FCS shall be only generated for payloads greater than zero bytes.

The FCS is an optional filed in MAC frame format and the field information generated based on payload and FCS option used in the MAC frame from RS (64, 32) / RS (160,128) / None.

The FEC support for VTASC is given in Table YYY.

|  |  |  |
| --- | --- | --- |
| **No** | **RS Method**  | **FECRate** |
| 1 | None | 1 |
| 2 | RS(64,32) | 32/64 |
| 3 | RS(160,128) | 128/160 |

**Table YYY - VTASC FEC Support**

**Sequential Scalable 2D Code FCS field**

The Sequential scalable 2D code FCS field follows the same format as VTASC FCS field. Refer VTASC FCS field for more details.

**Invisible Data embedding FCS field**

The Invisible Data Embedding FCS field follows the same format as VTASC FCS field. Refer VTASC FCS field for more details.