**IEEE P802.15**

**Wireless Personal Area Networks**

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| Project | IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs) |
| Title | Suggested Primitive descriptions for RESET and SOUNDING |
| Date Submitted | September 2016 |
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| Re: | TG8 draft text for comment resolution for 802.15.8 |
| Abstract | This is the work in progress text of the MAC component for IEEE 802.15.8 group for PAC. |
| Purpose | This document provides the details of draft text to IEEE 802.15.8 |
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| Patent Policy | The contributor is familiar with the IEEE-SA Patent Policy and Procedures:<http://standards.ieee.org/guides/bylaws/sect6-7.html#6> and<http://standards.ieee.org/guides/opman/sect6.html#6.3>.Further information is located at <http://standards.ieee.org/board/pat/pat-material.html> and<http://standards.ieee.org/board/pat>. |

# [This is draft text to resolve comment submitted to TG8]

Suggestion: Delete Frame error notification primitive. As an alternative, add communication status notification primitive.

Reason: There is no usage in 15.8 of this primitive.

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6.1.5 Communication status indication primitive

This primitive is used to notify the next higher layer a communication status.

6.1.5.1 MLME-COMM-STATUS.indication

This primitive indicates a communications status. The semantics of this primitive are:

MLME-COMM-STATUS.indication {

SourceAddress;

DestinationAddress;

MulticastGroup\_ID;

Status;

}

The primitive parameters are defined in Table 42:

Table 42—MLME-COMM-STATUS.indication parameters

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Type** | **Valid range** | **Description** |
| SourceAddress | MAC address | PD specific | Address of the PD from which the frame causing an error originated. |
| DestinationAddress  | MAC address  | PD specific | Address of the PD from which the frame causing an error originated. |
| MulticastGroup\_ID | Integer | 0 to 216 −1  | Group ID of destination PD. |
| Status | Enumeration | SUCCESSCHANNEL\_ACCESS\_FAILURE, NO\_ACKINVALID\_PARAMETERUNSUPPORTED | The status of the communication |

6.1.5.1.1 When generated

This primitive is generated by the MLME and issued to its next higher layer following the result of a transmission.

**6.1.5.1.2 Effect on receipt**

Upon receiving this primitive, the status parameter shall be set to the following values in accordance to the results of transmission.

SUCCESS -- the request to transmit was successful

CHANNEL\_ACCESS\_FAILURE -- There was a failure in the CSMA-CA algorithm while attempting to

send the frame.

NO\_ACK -- An acknowledgment was expected but not received.

INVALID\_PARAMETER -- One or more of the parameters in the response primitive were in error.

UNSUPPORTED -- One or more of the parameters are not supported.

6.1.6 Reset MAC sublayer

These primitives are used to reset the MAC sublayer. The execution is implementation specific.

6.1.6.1 MLME-RESET.request

This primitive is used by the next higher layer to request a reset operation. The properties of this primitive are:

MLME-RESET.request{

ResetMode;

}

The primitive parameters are defined in Table 43.

Table 43—MLME-RESET.request parameters

|  |  |  |  |
| --- | --- | --- | --- |
| **Property** | **Type** | **Valid range** | **Description** |
|  ResetMode |  Boolean | TRUE, FALSE  | Reset the MAC sublayer. |

6.1.6.1.1 When generated

This primitive is generated by the next higher layer to request that the MLME resets the MAC to initial conditions. The MLME-RESET.request primitive shall be used prior to use of the MLME-START.request primitive.

**6.1.6.1.2 Effect on receipt**

Depending on the received value of the primitive, the following procedures shall be followed. If the value is TRUE, the MAC sublayer is reset and all MAC PIB fields are set to their default values. If the value is FALSE, the MAC sublayer is reset, but all MAC PIB fields retain their values prior to the generation of the MLME-RESET.request primitive.

6.1.6.2 MLME-RESET.confirm

This primitive reports the results of the reset operation. The properties of this primitive are:

MLME-RESET.confirm {

Status;

}

The primitive parameters are defined in Table 44.

Table 44—MLME-RESET.confirm parameters

|  |  |  |  |
| --- | --- | --- | --- |
| **Property** | **Type** | **Valid range** | **Description** |
|  Status | Enumeration  |  SUCCESS, FAIL |  The result of the reset operation. |

6.1.6.2.1 When generated

This primitive is generated after the MAC sublayer completed the procedure in accordance to the MLME-RESET.request primitive.

**6.1.6.2.2 Effect on receipt**

If the received value is SUCCESS, there no further procedure is required. If the received value is FAIL, the next high layer shall decide to resend the MLME-RESET.request primitive or not.

6.1.11 Channel sounding

These primitives are used to obtain the results of a channel sounding from PDs that supports the channel sounding capability.

6.1.11.1 MLME-CHANNEL-SOUNDING.request

The primitive is used by the next higher layer to request that the PHY performs channel sounding for PDs with sounding capability. The properties of this primitive are:

MLME-CHANNEL-SOUNDING.request{

ChannelNumber;

ChannelPage;

}

The primitive parameters are defined in Table 54.

Table 54—MLME-CHANNEL-SOUNDING.request

|  |  |  |  |
| --- | --- | --- | --- |
| **Property** | **Type** | **Valid range** | **Description** |
|  ChannelNumber | Integer  | Any valid channel number as defined in Table 76  |  The channel number on which to attempt channel sounding. |
| ChannelPage  | Integer  | Any valid channel page as defined in Table 76 | The channel page on which to attempt channel sounding. |

6.1.11.1.1 When generated

This primitive is generated by the next higher layer to request the MLME initiate channel sounding on particular channel pages and channel numbers.

**6.1.11.1.2 Effect on receipt**

Upon receiving this primitive, the PHY sublayer shall perform channel sounding on required channel pages and channel numbers.

6.1.11.2 MLME-CHANNEL-SOUNDING.confirm

The primitive reports the result of a request to the PHY to provide channel sounding information. Such information is an estimate of the SINR at the input antenna of the requestee PD. The properties of this primitive are:

MLME-CHANNEL-SOUNDING.confirm{

Status;

SINR;

CQI;

}

The primitive parameters are defined in Table 55.

Table 55—MLME-CHANNEL-SOUNDING.confirm parameters

|  |  |  |  |
| --- | --- | --- | --- |
| **Property** | **Type** | **Valid range** | **Description** |
|  Status |  Enumeration | SUCCESS, FAIL, UNSUPPORTED  | The status of the attempt to return channel sounding data. |
|  SINR |  Integer | −40 to 40 | SINR estimate at the input antenna in dBm. |
| CQI | Octet | 0 to 255 | CQI value measured during reception of the PSDU.0 – very good 1 – good 2 – medium3– bad 4 – 255 reserved  |

6.1.11.2.1 When generated

This primitive is generated after the PHY sublayer is requested to perform channel sounding.

**6.1.11.2.2 Effect on receipt**

If the received status value is SUCCESS or UNSUPPORTED, there no further procedure is required. If the received status value is FAIL, the next higher layer shall decide to resend the MLME-SOUNDING.request primitive or not.

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