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| Re: | 80216h-05_023: Call for Contributions IEEE 802.16's License-Exempt (LE) Task Group. 2005-10-17 | |
| Abstract | Examples for table format in 802.16-2004, to be followed in further contribution to 16h group | |
| Purpose | Presented on the further meeting and ask the contributor to take the reference when drafting the table in future contribution. | |
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Editorial examples on table format in 16h draft for the contributors

Wu Xuyong

Overview

There are so many style of tables in the contributions before, not compatible to the primary standard, neither compatible with each other, the group need to recommend the contributor to follow the primary standard style in the table format. This contribution gives some examples in the table format shown in the 802.16-2004

Reference:

[1] *IEEE802.16-2004: IEEE standard for Local and metropolitan area networks Part16: Air Interface for Fixed Broadband Wireless Access Systems 2004-10-01*

[2] *IEEE 802.16-05/022: working document Amendment for Improved Coexistence Mechanisms for License-Exempt Operation 2005-09-28*

Proposed Table Format to be standardized in further contributions:

1) message/ header format table:

a. Fixed

| <u>Name</u> <i>[Name of the field]</i> | <u>Length</u> | <u>Description</u> <i>[Description of the field including some related short encoding]</i> |
|---|---------------|--|
| | | |
| | | |

Example :

| Name | Length (bits) | Description |
|------|---------------|---|
| BR | 19 | Bandwidth Request The number of bytes of uplink bandwidth requested by the SS. The bandwidth request is for the CID. The request shall not include any PHY overhead. |
| CID | 16 | Connection identifier |
| EC | 1 | Always set to zero. |
| HCS | 8 | Header Check Sequence Same usage as HCS entry in Table 5 |
| HT | 1 | Header Type = 1 |
| Type | 3 | Indicates the type of bandwidth request header |

b. Conditional

| <u>Syntax</u> <i>[expression of the field with condition or loop]</i> | <u>Size</u> | <u>Notes</u> <i>[Description of the field including some related short encoding]</i> |
|--|-------------|--|
| AAA <i>[Field/section name]</i> { | | <i>[begin of section AAA]</i> |
| AAA1 <i>[Subfield name]</i> | 1 bit | <i>[0 – description for code 0 1 – description for code 1]</i> |
| if(condition a){ | | <i>[normal condition]</i> |
| AAA2 | ..bits | <i>[Conditional subfield]</i> |

| | | |
|------------------------|--------|---|
| } | | <i>[End of conditional part of condition a]</i> |
| for (i=0; i<=n; i++){ | | <i>[loop condition from 0~n]</i> |
| | ..bits | <i>[fields inside loop]</i> |
| } | | <i>[End of loop condition]</i> |
| Reserved | ..bits | <i>[Reserved size in the format]</i> |
| } | | <i>[end of section AAA]</i> |
| ... | | |
| | | |

Example :

Table 18—UL-MAP message format

| Syntax | Size | Notes |
|------------------------------------|----------|--------------------------------------|
| UL-MAP_Message_Format() { | | |
| Management Message Type = 3 | 8 bits | |
| Uplink Channel ID | 8 bits | |
| UCD Count | 8 bits | |
| Allocation Start Time | 32 bits | |
| Begin PHY Specific Section { | | See applicable PHY section. |
| for (i = 1; i <= n; i++) { | | For each UL-MAP element 1 to n. |
| UL-MAP_IE() | variable | See corresponding PHY specification. |
| } | | |
| } | | |
| if !(byte boundary) { | | |
| Padding Nibble | 4 bits | Padding to reach byte boundary. |
| } | | |
| } | | |

2) Attributes table example:

Table 30—Auth Reject attributes

| Attribute | Contents |
|---------------------------|---|
| Error-Code | Error code identifying reason for rejection of authorization request. |
| Display-String (optional) | Display String providing reason for rejection of authorization request. |

3) TLV format table example:

Table 354—UCD burst profile encodings—WirelessMAN-OFDM

| Name | Type (1 byte) | Length | Value (variable length) |
|-----------------------------------|---------------|--------|--|
| FEC Code type and modulation type | 150 | 1 | 0= BPSK (CC) 1/2 11 = 64-QAM (BTC) 2/3 1= QPSK (RS+CC/CC) 1/2 12 = 64-QAM (BTC) 5/6 2= QPSK (RS+CC/CC) 3/4 13 = QPSK (CTC) 1/2 3= 16-QAM (RS+CC/CC) 1/2 14 = QPSK (CTC) 2/3 4= 16-QAM (RS+CC/CC) 3/4 15 = QPSK (CTC) 3/4 5= 64-QAM (RS+CC/CC) 2/3 16 = 16-QAM (CTC) 1/2 6= 64-QAM (RS+CC/CC) 3/4 17 = 16-QAM (CTC) 3/4 7= QPSK (BTC) 1/2 18 = 64-QAM (CTC) 2/3 8= QPSK (BTC) 3/4 19 = 64-QAM (CTC) 3/4 9= 16-QAM (BTC) 3/5 20–255 = <i>Reserved</i> 10= 16-QAM (BTC) 4/5 |
| Focused contention power boost | 151 | 1 | The power boost in dB of focused contention carriers, as described in 8.3.7.3.3 |
| TCS_enable | 152 | 1 | 0 = TCS disabled 1 = TCS enabled 2–255 = <i>Reserved</i> |

TLV format with scope

Table 356—DCD channel encoding

| Name | Type (1 byte) | Length | Value (variable length) | PHY scope |
|-----------------------------|---------------|--------|---|------------------|
| Downlink_Burst_Profile | 1 | | May appear more than once (see 6.3.2.3.1). The length is the number of bytes in the overall object, including embedded TLV items | All |
| BS EIRP | 2 | 2 | Signed in units of 1 dBm. | All |
| Frame duration | 3 | 4 | The number of PSs contained in a Burst FDD or TDD frame. Required only for framed downlinks | SC |
| PHY Type | 4 | 1 | The PHY Type to be used. | SC |
| Power adjustment rule | 5 | 1 | 0=Preserve Peak Power 1=Preserve Mean Power Describes the power adjustment rule when performing a transition from one burst profile to another. | SC, SCa |
| Channel Nr | 6 | 1 | Downlink channel number as defined in 8.5. Used for license-exempt operation only. | SCa, OFDM, OFDMA |
| TTG | 7 | 1 | TTG (in PSs) | SCa, OFDM, OFDMA |
| RTG | 8 | 1 | RTG (in PSs) | SCa, OFDM, OFDMA |
| RSS _{TR,max} | 9 | 2 | Initial Ranging Max. Received Signal Strength at BS Signed in units of 1 dBm | All |
| Channel Switch Frame Number | 10 | 3 | Channel switch frame number as defined in 6.3.15.7. Used for license-exempt operation only | SCa, OFDM, OFDMA |
| Frequency | 12 | 4 | Downlink center frequency (kHz). | All |
| BS ID | 13 | 6 | Base Station ID | SCa, OFDM, OFDMA |
| Frame Duration Code | 14 | 1 | The duration of the frame. The frame duration code values are specified in Table 230. | OFDM |
| Frame Number | 15 | 3 | The number of the frame containing the DCD message. | OFDM |

4) Message list tables example:

| Type | Message name | Message description | Connection |
|------|--------------|-----------------------------|--------------------------|
| 0 | UCD | Uplink Channel Descriptor | Broadcast |
| 1 | DCD | Downlink Channel Descriptor | Broadcast |
| 2 | DL-MAP | Downlink Access Definition | Broadcast |
| 3 | UL-MAP | Uplink Access Definition | Broadcast |
| 4 | RNG-REQ | Ranging Request | Initial Ranging or Basic |
| 5 | RNG-RSP | Ranging Response | Initial Ranging or Basic |
| 6 | REG-REQ | Registration Request | Primary Management |
| 7 | REG-RSP | Registration Response | Primary Management |
| 8 | | reserved | |

5) Other frequently used tables:

tbc.