Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
Title	**Pre-defined Burst Profile information**
Date Submitted	**2004-11-01**
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Re:	
Abstract	**Adopting the pre-defined burst profile feature in UCD/DCD messages to reduce UCD/DCD message size**
Purpose	Adoption of proposed changes into P802.16d /D5-2004
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1 Introduction

1.1 Problem statement

As UCD/DCD messages have more TLV fields, the size of the messages increases severely. These heavy messages can cause performance degradation since they should be broadcast periodically. In addition, in the worst case, the messages cannot be sent in a frame. (In case UCD/DCD messages for OFDMA PHY have all TLV fields, the size of each message is about 300 bytes) In this document, we propose to adopt a pre-defined burst profile feature into UCD/DCD messages. This pre-defined burst profile feature can reduce the size of the messages dramatically by omitting many burst profile related TLV fields.

1.2 Proposed solution

Most TLV fields in UCD/DCD messages are used to represent UL/DL burst profiles. Based on this observation, we propose a new method to represent UL/DL burst profiles effectively. The basic idea is that both BS and MSS store the pre-defined burst profiles in advance. For efficiency, a set of pre-defined burst profiles can be stored in the format of a table. This enables the UCD/DCD messages to represent UL/DL burst profile information only by indicating an index of pre-stored tables. Table XXX shows an example of the table representing a set of pre-defined DL burst profiles.

To adopt the above pre-defined burst profile feature, we use only one bit of 4 reserved bits in UL/DL burst profiles (refer to Table 301/302). The one bit is used as "Pre-defined Profile Flag". In other words, if the flag is set into 1, the following four bits are interpreted as the table index field that represents the index of pre-defined burst profile tables. And if the flag is set into 0, the following four bits are interpreted as the original UIUC/DIUC field.

Table XXX – Pre-defined Downlink Burst profile table

Index number	**Downlink Burst profile encodings**				
	DIUC 1	**DIUC 2**	**DIUC 3**	**DIUC 4**	...
0					
1					
2					
...					

2 Proposed Text

In page 549, Line 52, Section 8.4.5.5 Burst profile format, Table 301, 302.

Table 301—OFDMA Downlink_Burst_Profile TLV format

Syntax	Size	Notes
Downlink_Burst_Profile {		
Type = 1	8 bits	

Length	8 bits	
Reserved	4 3 bits	Shall be set to zero
Pre-defined Profile Flag	1 bits	0 : no pre-defined profile 1 : pre-defined profile
If (Pre-defined Profile Flag == 1) {		
Table index	4bits	represents the index of pre-defined burst profile tables
} else {		
DIUC	4 bits	
}		
TLV encoded information	*variable*	
}		

Pre-defined Profile Flag
This field indicates whether DL pre-defined burst profiles are used or not. If pre-defined profile flag set to “1”, the following four bits represent an index of the DL pre-defined burst profile tables. Otherwise, the four bits represents the original DIUC field.
Table index
If Pre-defined Profile Flag set to “1,” this value represents the index of pre-defined burst profile tables

Table 302—OFDMA Uplink_Burst_Profile TLV format

Syntax	Size	Notes
Uplink_Burst_Profile {		
Type = 1	8 bits	
Length	8 bits	
Reserved	4 3 bits	Shall be set to zero
Pre-defined Profile Flag	1 bits	0 : no pre-defined profile 1 : pre-defined profile
If (Pre-defined Profile Flag == 1) {		
Table index	4bits	represents the index of pre-defined burst profile tables
} else {		
UIUC	4 bits	
}		
TLV encoded information	*variable*	
}		

Pre-defined Profile Flag
This field indicates whether UL pre-defined burst profiles are used or not. If pre-defined profile flag set to “1”, the following four bits represent an index of the UL pre-defined burst profile tables. Otherwise, the four bits represents the original UIUC field.
Table index
If Pre-defined Profile Flag set to “1,” this value represents the index of pre-defined burst profile tables.