

Project	IEEE 802.16 Broadband Wireless Access Working Group < http://ieee802.org/16 >	
Title	Fast Feedback Request message	
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Re:	IEEE P802.16e/D5	
Abstract	To extend the Fast Feedback sub header functionality by defining Fast Feedback request message.	
Purpose	Adopt contribution.	
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Fast Feedback Request message

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Motivation

The motivation is to define additional way to signal an MSS about an uplink FFB allocation.

The advantages of the proposed technique are:

1. Signaling an MSS about FFB request by the BS when no DL data is available. In that case the FFB sub header cannot be used as it does not have any payload to be piggyback on.
2. Multiple FFB indication to multiple MSSs in the same payload – with an adaptive burst profile capability (no need to stick to the DL MAP burst descriptor).
3. Header is not encrypted and hence can give better response time to meet the processing time requirements.

Proposed solution

We propose to define a new MAC message in the DL to request Fast Feedback. The message can be used to aggregate one or more feedback allocations to a single message.

For the case response time of using encrypted FFB subheader cannot be used by low processing power device (capability added), the message defined in the proposal or a DL MAP FFB IE should be used instead.

Changes summary

[Add the following at end of table 45]

Type	Message name	Message description	Connection
Xx	FFB-REQ	Fast Feedback Request	Basic, broadcast

[Add the following to the end of section 6.3.2.3]

6.3.2.3.xx Fast Feedback Request (FFB-REQ) message

A BS sends a FFB-REQ message to list Fast Feedback allocations to one or more MSSs. The message shall be transmitted on the basic or broadcast CIDs.

Table xxx— Fast Feedback Request (FFB-REQ) message format

Syntax	Size	Notes
FF_REQ_Message_Format() {		
Management message type = xxx	8 bits	
If (Message is not transmitted on the broadcast CID) {		
Allocation offset	6 bits	
Feedback type	2 bits	
} else {		
While (not end of message) {		
Basic CID	16 bits	
Allocation offset	6 bits	
Feedback type	2 bits	
}		
}		



Parameters shall be as follows:

Allocation offset

Defines the offset, in units of slots, from the beginning of the FAST-FEEDBACK uplink bandwidth allocation (8.4.5.4.9), of the slot in which the SS servicing the CID appearing in the MAC generic header, must send an FAST-FEEDBACK feedback message for the connection associated with the CID value. Range of values 0 to 63. The allocation applies to the UL sub-frame of the next frame.

Feedback type

- 00 – Fast DL measurement
- 01 – Fast MIMO feedback, antenna #0
- 10 – Fast MIMO feedback, antenna #1
- 11 – MIMO mode and permutation mode feedback

[Add the following to the end of the table in section 11.8.3.7.7]

Type	Length	Value	Scope
	1	bit #0: FAST_FEEDBACK bit #1: Enhanced FAST_FEEDBACK bit #2: UL ACK bit #3: Enhanced UL ACK bit #4: Optional FAST_FEEDBACK for the 4-bit payload bit #5: Optional FAST_FEEDBACK for the 5-bit payload bit #6: No support for FAST-FEEDBACK allocation subheader Bit 7: reserved; shall be set to zero	SBC-REQ (see 6.3.2.3.23) SBC-RSP (see 6.3.2.3.24)