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Title	Mode Selection processing time definition			
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Re:	IEEE P802.16e/D4			
Abstract	Insert missing definition for mode selection feedback processing time, and location in frame.			
Purpose				
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## Mode Selection processing time definition

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### 1. Motivation

When BS polls SS for mode selection feedback or using the mode selection feedback subheader, the feedback reply is due in the next OFDMA frame. However, a definition of processing time is required (similar to Tproc in table 340), since the DL of the current frame may be close to the UL of the next frame (in FDD or TDD when UL/DL ratio is dynamic).

In addition, the handling of mode selection is in some senses more demanding than handling of UL-MAP: The UL-MAP appears as the first burst in the DL subframe, however for mode selection feedback subheader, it can appear anywhere in the frame, can appear on any of the SS-s CIDs and may also be encrypted (being a subheader). It seems that this message is wrongly located as a subheader (subheaders are used in higher layers in the MAC such as frag/pack and may be handled off-line), and poses strict turnaround requirements on those layers, that otherwise would not be required.

This issue is similar to the issue of FAST-FEEDBACK subheader. A similar contribution will be submitted to 802.16REVd (16h) to define the processing time of FAST-FEEDBACK subheader.

## 2. Details

We propose the following definition:

- 1. The processing time for mode selection feedback will be frame duration in TDD and 1/2 frame duration in FDD. The processing time is defined from the end of the burst carrying the mode selection feedback subheader, to the start of the UL-subframe carrying the mode selection feedback response. Note that the SS may need to change the transmission power of normal bursts to accommodate mode selection feedback transmission, therefore in general case, it needs to finish parsing the mode selection feedback subheader before the start of the relevant UL-subframe.
- 2. To mitigate requirements on MAC, define that for each SS, mode selection feedback subheader must appear only in the first unicast PDU addressed to that SS.

# 3. Changes summary

#### 6.3.2.2.7 Mode Selection Feedback Subheader

[Add the following text at the end of the first paragraph]

For each SS, a Mode Selection Feedback subheader may appear only in the first unicast PDU addressed to that SS.

#### 10.1 Global values

Add the following entry in table 340				
System	Name	Time reference	Minimum value	

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BS,SS	Mode Selection	The time allowed between the end	TDD: Frame duration
	Feedback	of the burst carrying the Mode	FDD: 1/2 Frame duration
	processing time	Selection Feedback subheader and	
		the start of the UL-subframe	
		carrying the Mode Selection	
		Feedback response.	