Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
Title	**Proposed Text for Analog Feedback in Control Structure Section (15.9.2 UL Control Channels) for the IEEE 802.16m Amendment**
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Re:	"802.16m amendment text": IEEE 802.16m-08/053r1, "Call for Contributions on Project 802.16m Draft Amendment Content". Target topic: "11.9 UL PHY control structure, especially mapping".
Abstract	The contribution proposes the text of UL control structure section to be included in the 802.16m amendment.
Purpose	To be discussed and adopted by TGm for the 802.16m amendment.
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Proposed Text for Analog Feedback in Control Structure Section (15.9.2 UL Control Channels) for the IEEE 802.16m Amendment

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1. Introduction

The contribution proposes the text for analog feedback contained in the UL PHY Control structure section to be included in the 802.16m amendment. The proposed text is developed so that it can be readily combined with IEEE P802.16 Rev2/D8 [1], it is compliant to the 802.16m SRD [2] and the 802.16m SDD [3], and it follows the style and format guidelines in [4].

2. Reference to the SDD [2]

The text proposed in this contribution is based on subclauses 11.9.1.2 (MIMO Feedback), 11.9.2.1 (UL Fast Feedback Channel) and 11.8.2.2.3.2 (CSI Feedback) in the IEEE 802.16m SDD [3].

3. References

[1] IEEE P802.16 Rev2/D8, "Draft IEEE Standard for Local and Metropolitan Area Networks: Air Interface for Broadband Wireless Access," Oct. 2008.

[2] IEEE 802.16m-07/002r7, "802.16m System Requirements"

[3] IEEE 802.16m-08/003r6, "The Draft IEEE 802.16m System Description Document"

[4] IEEE 802.16m-08/043, "Style guide for writing the IEEE 802.16m amendment"

4. Text proposal for inclusion in the 802.16m amendment

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15. Advanced Air Interface

15.9.2   UL Control channel

15.9.2.6   UL Analog Feedback Channel

To facilitate analog-feedback-based precoding, the UL secondary fast feedback control channel can be configured to carry unquantized CSI-related information (e.g., an unquantized encoding of the DL spatial covariance matrix or an unquantized encoding of the eigenvectors of the DL spatial covariance matrix). The unquanitized CSI-related information can be specific to a particular specified portion of the band (narrowband feedback) or specific to the entire bandwidth (wideband feedback).

15.9.2.6.1   Multiplexing with other control channels and data channels

The UL Analog Feedback Channel is FDM with other UL control and data channels.

15.9.2.6.2   PHY structure

The minimum resource unit for UL fast feedback control channel is a UL feedback mini-tile (FMT) which contains 2 contiguous subcarriers by 6 OFDM symbols.

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