Project	**IEEE 802.16e Broadband Wireless Access Working Group <http://ieee802.org/16>**	
Title	**CID for Dedicated Pilot Zones**	
Date Submitted	**2007-02-14**	
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Re:	Call for comments to Cor2/D2	
Abstract	This document describes a simple restrictive measure on CID Switch IE operation for dedicated pilot zones that can significantly reduce MS complexity and power consumption	
Purpose	Approve and adopt in Cor2	
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CID for Dedicated Pilot Zones

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Problem Statement

1. In dedicated pilot zones, an MS can exploit only those pilots within the bursts intended for the said MS.
2. When the use of CID is toggled off via CID Switch IE, i.e., INC_CID = 0 in DL-MAP IE, an MS can determine the location of the bursts intended for the MS, only after all bursts are fully decoded and PDU header parsed.

These suggest that, when a burst in a dedicated pilot zone is assigned to an MS via DL-MAP IE with INC_CID = 0 (CID off), there can exist unnecessary latency, complexity, and/or performance loss in any MS operation that use pilot information. Such operations can include various synchronization functions, automatic gain control, channel estimation, and CINR measurements.

Above potential grievance can be alleviated with a simple restriction on CID Switch IE operation. Specifically, we can require DL-MAP CID inclusion mode to be toggled on, for all DL-MAP IEs allocating bursts in dedicated pilot zones. HARQ DL-MAP IE is an exception to this restriction, since RCID is always included in this IE.

Proposed Remedy

Add additional text as follows:

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Section 8.4.5.4.3 Space-Time Coding (STC)/DL_Zone switch IE format

Dedicated Pilots

The optional fields Dedicated Pilots are used to support the use of open loop precoding or closed loop transmissions in which the MS has no knowledge of the precoding/beamforming matrix. When the data allocations are precoded/beamformed, then setting the Dedicated Pilots bit to 1 means the pilot symbols are precoded/beamformed in the same way as are the corresponding data subcarriers. In this case, an MS should use only the pilots that are specific to its allocation for channel estimations. In addition, a BS should toggle CID-Switch IE() such that INC_CID = 1 in all non-HARQ DL-MAP IEs that allocate dedicated pilot zones.

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References

[1] IEEE Std 802.16 Cor1/D2 (Amendment and Corrigendum to IEEE Std 802.16 2004)