Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
Title	**Clarification on uplink MIMO for relay station with multiple antennas**
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Re:	Call for Reply Comments to "IEEE 802.16 Working Group Letter Ballot #28"
Abstract	The document clarifies the undefined symbols about uplink MIMO for relay station in P802.16j/D1.
Purpose	To incorporate the proposed text into the P802.16j/D1 Baseline Document.
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Clarification on Uplink MIMO for Relay Station with Multiple Antennas

1. Introduction

In IEEE 802.16 working group letter ballot #28, some comments point out that the superscripts in figure 306a and 306b are not clearly defined [1][2] and the meaning of the pilot subcarrier are ambiguous [3]. In this contribution, the meanings of the superscripts are clarified and in order to avoid the ambiguous meaning of the pilot subcarrier, the "pilot subcarrier" and "+ pilot subcarrier" are incorporated as "+ pilot subcarrier" in figure 306a and 306b because they have the same meaning.

2. Proposed Text

In the following, the text in black denotes the original text in IEEE P802.16j/D1[4] and the text in blue denotes the new added text.

++++++++++++++++++++++++++++++++ Start of the text ++

8.4.8.1.5 Uplink using STC

Insert the following at the end of 8.4.8.1.5

For RS using three antennas, the MIMO coding matrices defined in 8.4.8.3.4 shall be mapped to the tile according to Figure 306a. One tile shall contain two MIMO coding matrices. S^1_{mn} denotes the m^{th} row n^{th} column element of the first MIMO coding matrix and S^2_{mn} denotes the m^{th} row n^{th} column element of the second MIMO coding matrix in the Figure 306a.

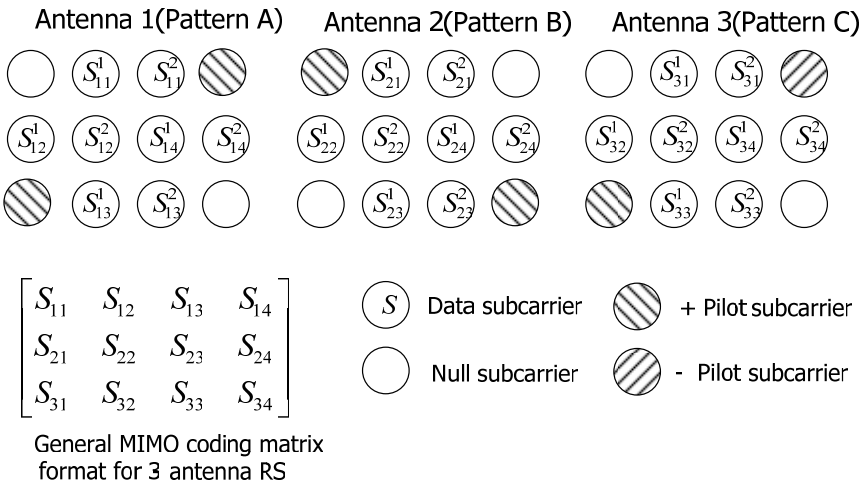

Figure 306a Mapping of data subcarriers for 3-antenna RS

For RS using four antennas, the MIMO coding matrices defined in 8.4.8.3.5 shall be mapped to the tile according to Figure 306b. One tile shall contain two MIMO coding matrices. S^1_{mn} denotes the m^{th} row n^{th} column element of the first MIMO coding matrix and S^2_{mn} denotes the m^{th} row n^{th} column element of the second MIMO coding matrix in the Figure 306b.

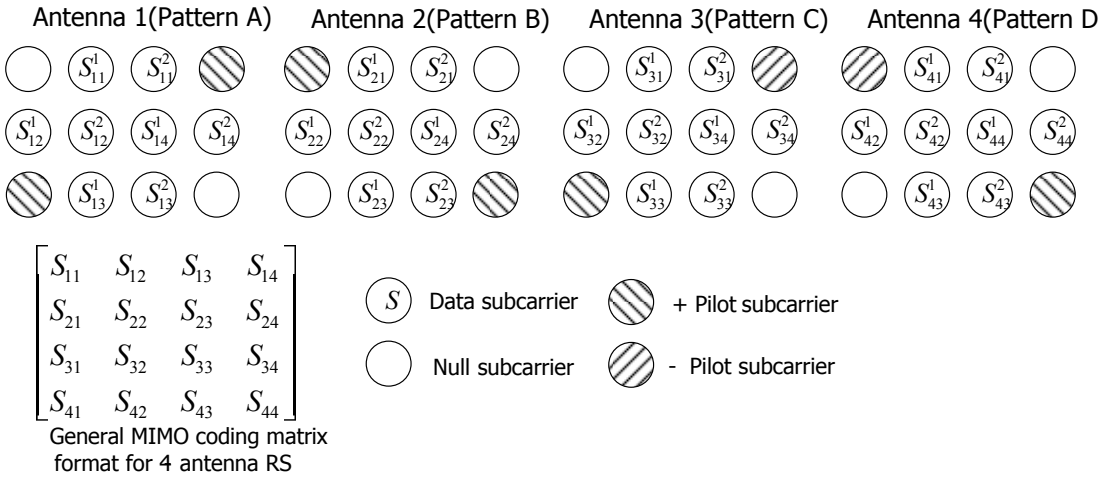

Figure 306b Mapping of data subcarriers for 4-antenna RS

++++++++++++++++++++++++++++++++++ End of the text ++

3. References

[1] IEEE 80216-07_045, Comment # 0973, Eugene Visotsky, IEEE 802.16 Working Group Letter Ballot #28, Sep. 2007

[2] IEEE 80216-07_045, Comment # 0974, Eugene Visotsky, IEEE 802.16 Working Group Letter Ballot #28, Sep. 2007

[3] IEEE 80216-07_045, Comment # 0972, Avi Freedman, IEEE 802.16 Working Group Letter Ballot #28, Sep. 2007

[4] IEEE Part 16: Air Interface for Fixed and Mobile Broadband Wireless Access Systems- Multihop Relay Specification, P802.16j/D1, Aug. 2007