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Source(s)	Yeongmoon Son, Geunhwi Lim, Brian Shim Samsung Electronics	Voice: +82-31-279-5845 E-mail: ym1004.son @samsung.com
	Vladimir Yanover Alvarion	E-mail: vladimir.yanover@alvarion.com *<http://standards.ieee.org/faqs/affiliationFAQ.html>
Re:	LB26b	
Abstract	This contribution proposes the scheme to resume multiple ertPS connections with single ertPS codeword on CQICH.	
Purpose	Accept the proposed specification changes on IEEE P802.16Rev2/D3.	
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ertPS resumption with single ertPS codeword on CQICH

Yeongmoon Son, Geunhwi Lim*, Brian Shim*, and Vladimir Yanover***
Samsung Electronics*, Alvarion**

Problem description

There is a CQICH codeword for ertPS resumption in Table 381 on page 777.

Table 381—Encoding of payload bits for MIMO mode feedback with enhanced fast-feedback channel

Value (binary)	Description
101000	STTD and PUSC/FUSC permutation
101001	STTD and adjacent-subcarrier permutation
101010	SM and PUSC/FUSC permutation
101011	SM and adjacent-subcarrier permutation
101100	Hybrid and PUSC/FUSC permutation
101101	Hybrid and adjacent-subcarrier permutation
101110–110110	Interpretation according to Table 382, Table 383 or Table 384, depending on if antenna grouping, antenna selection or a reduced precoding matrix codebook is used.
110111	Closed-loop precoding with 1 stream.
111000	Closed-loop precoding with 2 streams.
111001	Closed-loop precoding with 3 streams.
111010	Closed-loop precoding with 4 streams.
111011	Extended rtPS bandwidth request (see 8.4.5.4.10.14)
111100	Indication Flag Feedback (see 8.4.5.4.10.12)

However an MS may have multiple ertPS connections(e.g. for Voice and Video) and some ertPS connections have been stopped by transmission of BR header with BR=0 from the MS. In that case, when a BS receives the ertPS codeword(i.e. 111011) on CQICH from the MS, the BS cannot know which ertPS connection the MS wants to resume. Moreover, MS cannot resume more than a ertPS connections at the same time (e.g. ertPS for voice and ertPS for video).

Proposed Changes

1. When a BS receives the ertPS codeword on CQICH from an MS, the BS shall allocate the MS UL burst corresponding to the largest ‘Maximum Sustained Traffic Rate’ among ertPS connections in order to avoid insufficient BW for anonymous ertPS connection. BS can know the resumed ertPS connection by referring to CID of MAC PDU on the UL burst from MS. Afterward, BS or MS can increase/decrease proper BW for ertPS connection.

[Modify the section 8.4.5.4.10.14 on page 783, line 35]

8.4.5.4.10.14 Extended rtPS BR

In ~~the~~ case ~~of~~ an MS has Extended rtPS connections~~service~~, the MS may inform a BS of the existence of pending ertPS data ~~request~~

~~bandwidth allocation, which is defined as the Maximum Sustained Traffic Rate in service flow encodings~~. The codeword 0b111011 is used for that purpose. If the BS receives the codeword (i.e. 111011) on CQICH from the MS, the BS shall allocate the MS an UL burst corresponding to the largest Maximum Sustained Traffic Rate among schedule-stopped ertPS connections which the MS has.

2. MS may want to resume more than a ertPS connection at the same time.

[Add the following new section at the end of the section 6.3.2.2.7.8 on page 78, line 26]

6.3.2.2.7.9 ertPS resumption bitmap extended subheader

An MS may have the multiple ertPS connections which have been stopped by BR headers with BR = 0. In that case, when the MS has more than an ertPS connections to resume at the same time, MS may include the extended subheader in MAC PDU to request the BS to resume scheduling of several ertPS connections at the same time. In this case, BS shall allocate the MS UL burst for each ertPS connection to be resumed according to this extended subheader.

Table XX- ertPS resumption bitmap extended subheader format

Name	Size (bit)	Description
ertPS resumption bitmap	8	A bit is assigned to ertPS connection in descending order of SFID (i.e. MSB is mapped to ertPS connection with the biggest SFID). 1 : Request for resumption of ertPS connection 0 : No Request for resumption of ertPS connection

References

[IEEE802.16-Rev2/D3] IEEE Computer Society and IEEE Microwave Theory and Techniques Society, “DRAFT Standard for Local and Metropolitan Area Networks Part 16: Air Interface for Broadband Wireless Access Systems”, P802.16Rev2/D3 (February 2008). Revision of IEEE Std 802.16-2004 and consolidates material from IEEE Std 802.16e-2005, IEEE Std 802.16-2004/Cor1-2005, IEEE Std 802.16f-2005 and IEEE Std802.16g-2007.