

Proposed UL Control Structure for 802.16m system

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Hwasun Yoo, Si-Hyun Park, Sangheon Kim,
Jaehee Cho, Hokyu Choi, Heewon Kang
Samsung Electronics Co., Ltd

Voice: +82-31-279-4983

E-mail: hwasun.yoo@samsung.com

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None

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To be discussed and adopted by TGM for the 802.16m SDD

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*Hwasun Yoo, Si-Hyun Park, Sangheon Kim,
Jaehee Cho, Hokyuu Choi, Heewon Kang*

Samsung Electronics Co., Ltd

Categorization of UL Feedback Information

- ACKCH & CQICH
 - Are DL-related feedback for all MSs including cell edge users
 - Should be carried in robust transmission such as orthogonal modulation
- Enhanced CQICH
 - For some MSs who are located at inner-cell
 - Support various DL transmission such as MIMO and band selection
 - Carries CQI per MIMO layer, RI(rank information) and PMI(Precoding Matrix Indication) for CL-MIMO, CINR per AMC subband
- Ranging
 - Allow contention and timing offset

Resource Structure for UL Control Channels

- ACK/CQI/Enhanced-CQI
 - Carry small number of information bits
 - Support robust transmission techniques
 - Orthogonal modulation is applicable to small resource blocks (smaller than coherent time and frequency)
 - Need only diversity subchannelization
 - For reliable transmission of UL feedback w/o HARQ support,
 - Each control information should be transmitted over at least 3 different resource units
 - Require small-sized RUs for UL Control channels

Resource Structure for Ranging Region

- UL Ranging region
 - Exists only in 1st UL mini-frame
 - To reduce the effect of timing offset
 - Consists of multiple UL DRUs
 - For frequency diversity and detection performance
 - Remaining resource should be multiples of default resource unit

Text Proposal for Chapter 11 – PHY Layer

Insert the following text into Physical Layer Clause (i.e. Chapter 11 in [3]):

----- Text Start -----

11. Physical Layer

11.x UL Control Channel

11.x.1 CQICH

11.x.2 ACKCH

11.x.3 Enhanced CQICH

11.x.4 Ranging Channel

11.x.5 Resource Mapping for UL control channel

----- Text End -----

References

- [1] IEEE C802.16m-08/062r1, “Proposed 802.16m Frame Structure”
- [2] IEEE 802.16m-07/002r4, “IEEE 802.16m System Requirements”
- [3] IEEE 802.16m-08/003, “Draft IEEE 802.16m System Description Document”
- [4] IEEE 802.16m-07/037r2, “(Draft) IEEE 802.16m Evaluation Methodology Document ”