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Re:	[If this is a proposed revision, cite the original document.]
Abstract	This document contains the concept of Quasi-Random Selection of Ranging Code and Ranging Sub-channel for the 802.16a system
Purpose	This proposal should be used for the Ranging design.
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Quasi-Random Ranging Code and Ranging Sub-channel Selection in OFDMA System

KiHo Chung

Instructions

On CDMA based ranging procedure, each terminal selects Ranging Code and Ranging Sub-channel randomly. we propose the Quasi-random selection of Ranging Code and Ranging Sub-channel for avoiding the confliction due to selecting the same Ranging Code and Ranging Sub-channel.

This document proposes extended concept, following our recent contribution, IEEEPC80216aP-02_19r1[1].

Quasi-Random Selection of Ranging Code and Ranging Sub-channel

AP doesn't have any information for SSs that attempt Initial Ranging with all zero Connection ID.

AP knows SSs that enter the Bandwidth Ranging Domain upon receiving the Connection ID after successfully finishing the Initial Ranging procedure.

Because Connection ID is unique, SS can choose the Ranging Code and Ranging Sub-channel using the following equation like a random selection quasi-randomly.

Ranging Code Index = Connection ID mod The number of Ranging Codes on AP

Ranging Sub-channel Index = Connection ID mod The number of Ranging Sub-channel on AP

Here, Ranging Code Index and Ranging Sub-channel Index are numbered with ascending order from 0.

As you known, Connection ID is assigned uniformly and uniquely per each connection with SS. So, the selection probability of one Ranging Code or Ranging Sub-channel is very low.

Changes in Subsections

Replace the figure 141 of subsection 6.2.6.5 with the following

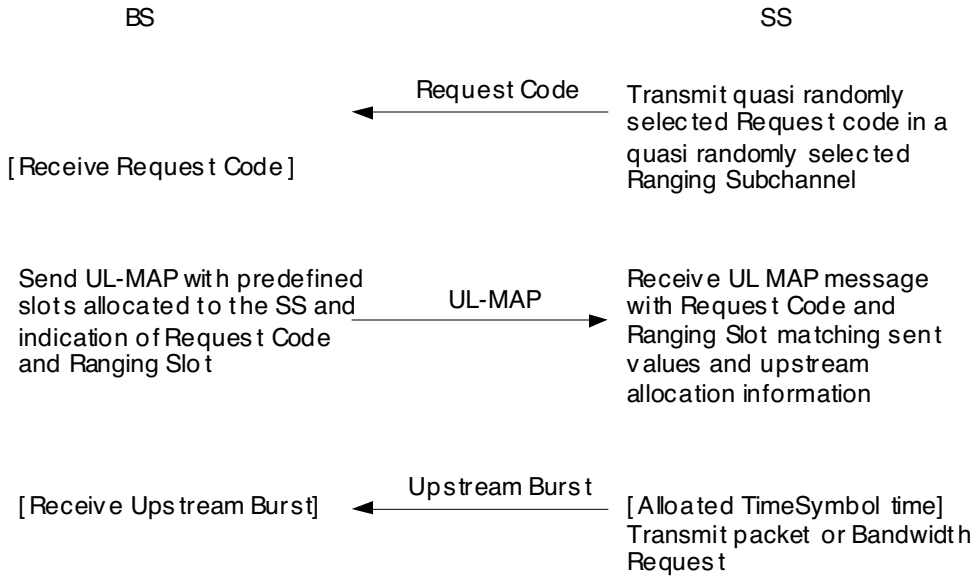

Figure 141 - Bandwidth Request in OFDMA

Conclusion

Using the Quasi-random selection of Ranging Code and Ranging Sub-channel instead of random selection is avoiding way of conflictions due to choosing same Ranging Code and Ranging Sub-channel by several SSs.

References

[1] C802.16aP-02/19r1, Concept of Ranging Code Set in BWA, KiHo Chung, JungMin Ro, DaeEop Kang.