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| Project | IEEE 802.16 Broadband Wireless Access Working Group < http://ieee802.org/16 > | |
| Title | Zone-based Multicast Broadcast Service (MBS) with Cooperative Relays | |
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| Re: | [Cite the specific document number of the appropriate Call for Contributions, the ballot number, etc. Contributions that are not responsive to this section of the template, may be refused or assigned a low priority for review.] | |
| Abstract | Integrating the relay station (RS) into existing cellular architecture gives benefits such as coverage and capacity enhancements. Coverage enhancement by providing improved signal reception quality to the users in the cell edge is especially important in MBS. We propose the methods for MBS transmission with cooperative relays. | |
| Purpose | To be discussed and adopted by TGM for use in the 802.16m SDD | |
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Zone-based Multicast Broadcast Service (MBS) with Cooperative Relays

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Suggested ToC Topic for IEEE 802.16m SDD: Enhancements on Multicast and Broadcast Services (MBS)

Title: Zone-based MBS with Cooperative Relays

Description: Current cellular communications are based on single hop transmission from the base station (BS) to the multiple mobile stations for MBS transmission. Integrating the relay station (RS) into existing cellular architecture gives benefits such as coverage and capacity enhancements. Coverage enhancement by providing improved signal reception quality to the users in the cell edge is especially important in MBS because the performance of MBS system is normally described in terms of the coverage area that supports a certain amount of data with predefined performance metrics, e.g., bit error rate (BER). The RS can simply repeat the signal from the BS or can introduce redundancy smartly by coordinating with other RS or BS. In zone-based MBS, the cells at the zone edge suffer from interference from neighboring zones due to different content transmissions. We propose transmission methods for zone-based MBS using cooperative relaying concept. Figure 1 and Figure 2 show the concept of MBS with cooperative relay and the timing relationship between BS and RS transmissions assuming TDD operation, respectively.

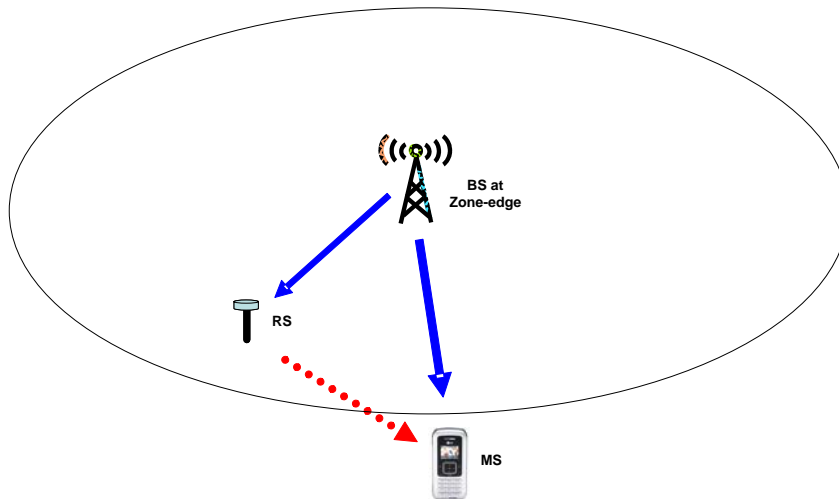


Figure 1: Concept of Zone-based MBS with a Relay

Related Area(s) in SRD: Section 6.7: Enhanced multicast broadcast service

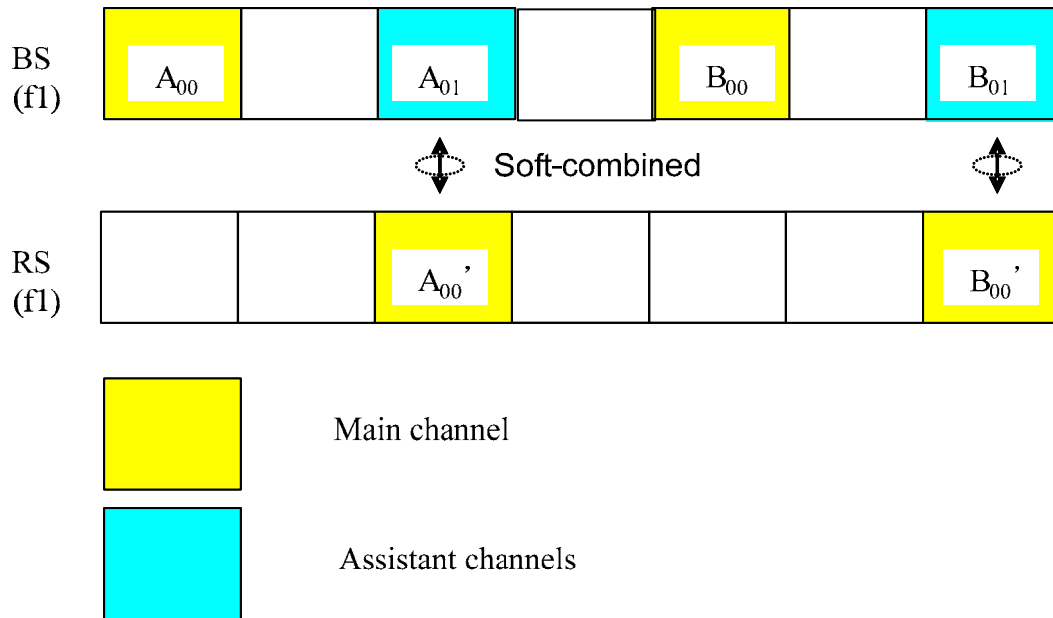


Figure 2: Exemplary Timing Relationship between BS and RS Transmissions