Relay-Station Power Control and Channel Reuse

IEEE 802.16 Presentation Submission Template (Rev. 8.3)

Document Number:

IEEE S802.16j-06/216

Date Submitted:

2006-11-07

Source:

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Venue:

EEE 802.16 Session #46, Dallas, USA

Base Document:

IEEE C802.16j-06/216r0 and URL <http://ieee802.org/16/… C80216j-06_216r0.pdf>

Purpose:

Propose the text regarding relay-station power control and channel reuse

Introduction

- In the MR-BS system, neighboring RS coverage areas may be overlapped with different preamble segment values as defined in PUSC mode

- RS power control with step size of 1 dB applying to each data burst to reduce the unnecessary channel interference from the neighboring RS/BS transmissions

- For further increasing channel reuse possibility, we may utilize the network channel management to group the set of MSs from each of different RSs within the MR-BS coverage

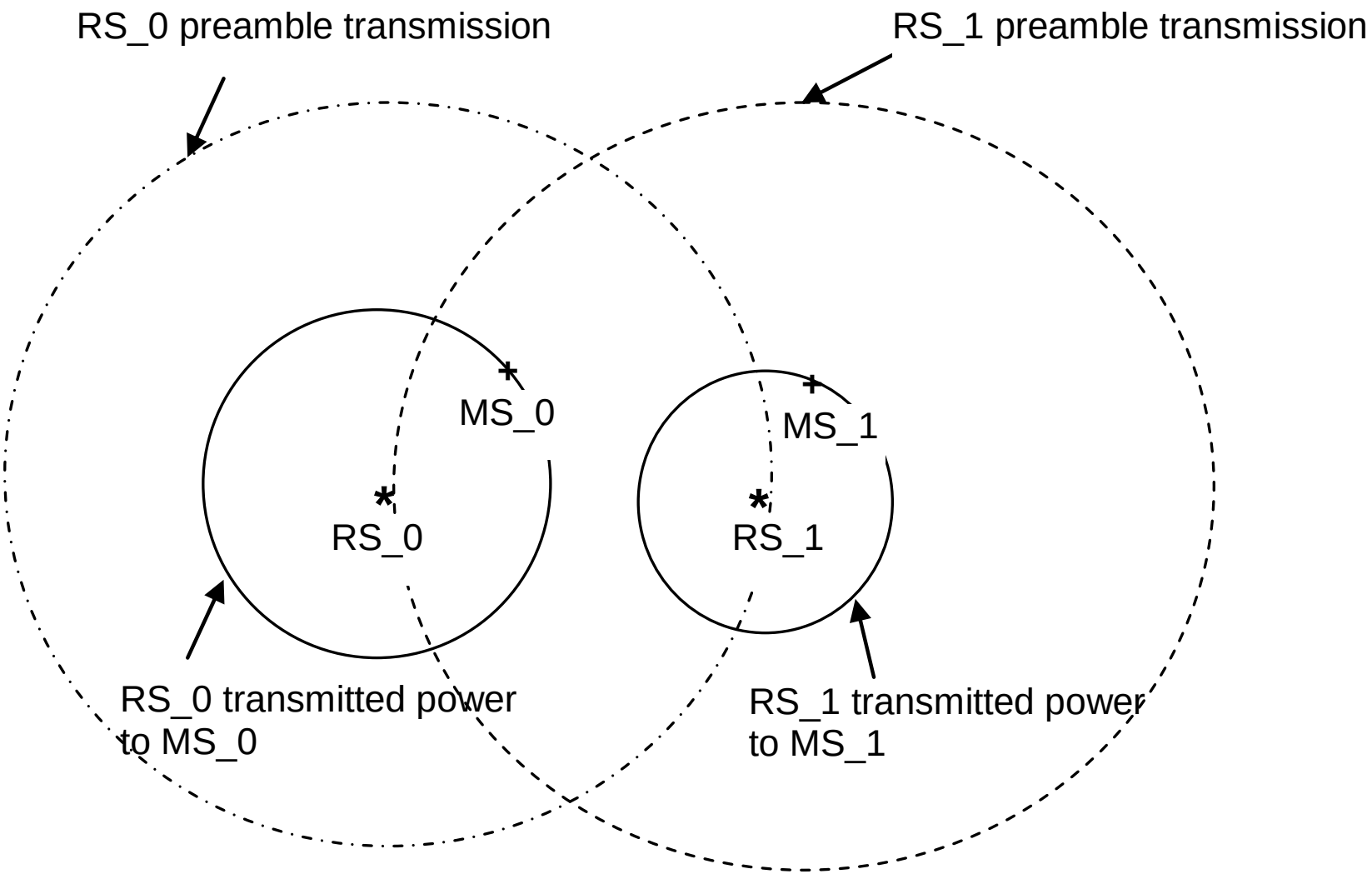
RS Power Control for Each Data Burst (1/2)

- MS reports channel measurement results during the handover process which provides the serving and the neighboring cell RSSI measurements

- If the MS with the estimated C/I result is higher than the pre-defined threshold value, the serving RS will decrease its transmission power to that particular MS, thereby maintaining that all the MSs under its control with a similar receive power from its serving RS

- By applying this RS power control mechanism, it can reduce the channel interference from the neighboring RSs

RS Power Control for Each Data Burst (2/2)



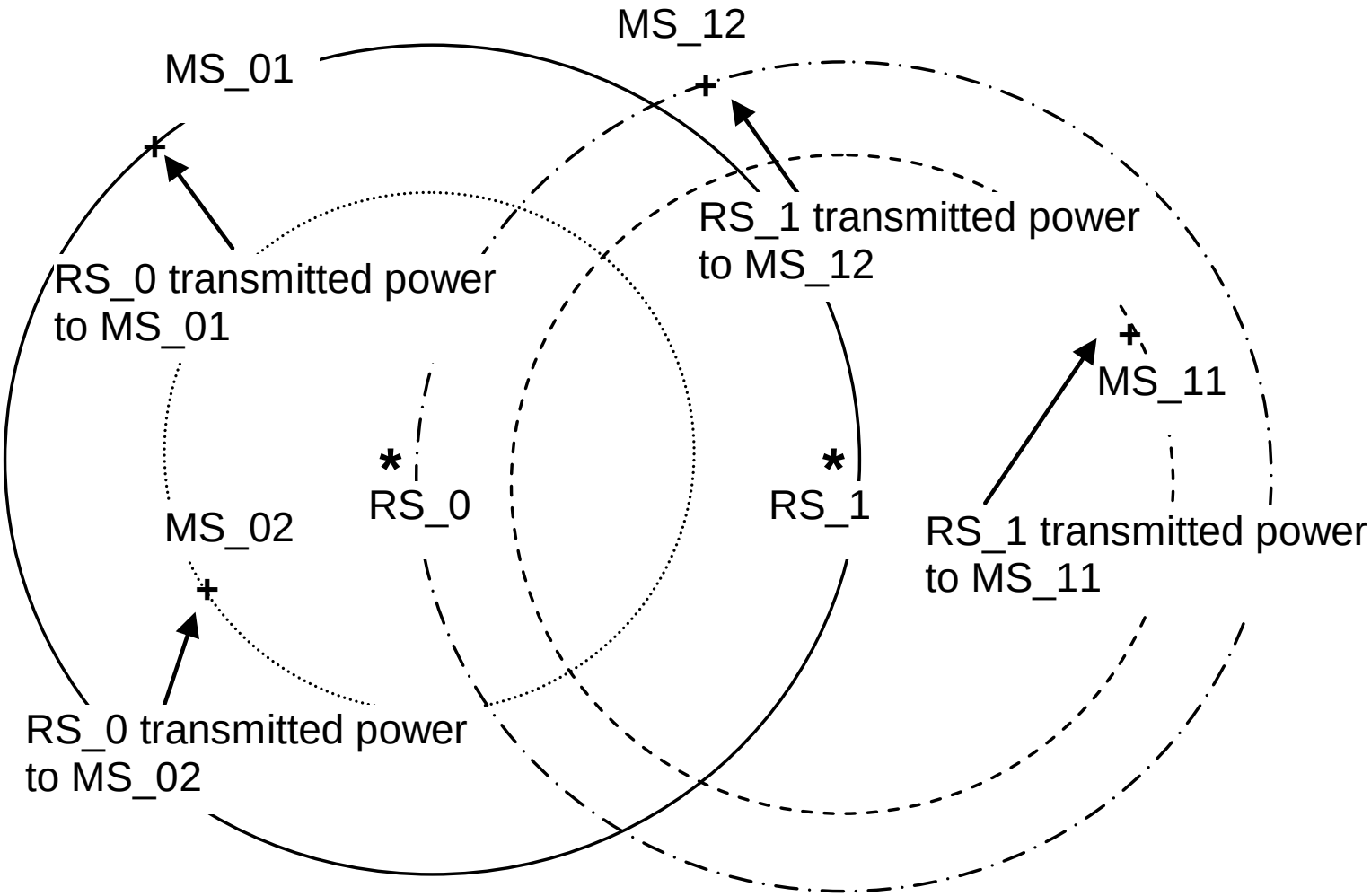
MS_0 and MS_1 can have channel reuse without interference

Channel Reuse Handled by Network Management (1/2)

- Even applying the RS power control scheme at each data burst , the MS C/I at adjacent RSs may still interfere with each other

- Using network channel management so that channel reuse is applied to the group of MSs which can further increase channel reuse capability

Channel Reuse Handled by Network Management (2/2)



The 1st group of MS_01 & MS_11 and a 2nd group of MS_02 & MS_12 can have channel reuse without interference, but MS_01 & MS_12 would not be an accepted group for channel reuse due to interference.

Summary

- Using RS power control to reduce the channel interference from the neighboring RS/RS
- Applying network channel management to further increase channel reuse capability
- Proposing RS power control with step size of 1 dB to each data burst transmission