Relay-Station Preamble Segment Assignment/Re-Assignment

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Peter Wang, Adrian Boariu,
Shashikant Maheshwari, Yousuf Saifullah
Nokia
6000 Connection Drive, Irving, TX

Voice: +1 214-912-4613
Fax:
E-mail: peter.wang@nokia.com

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Purpose:

Propose the text regarding relay-station preamble segment assignment for multi-hop relay

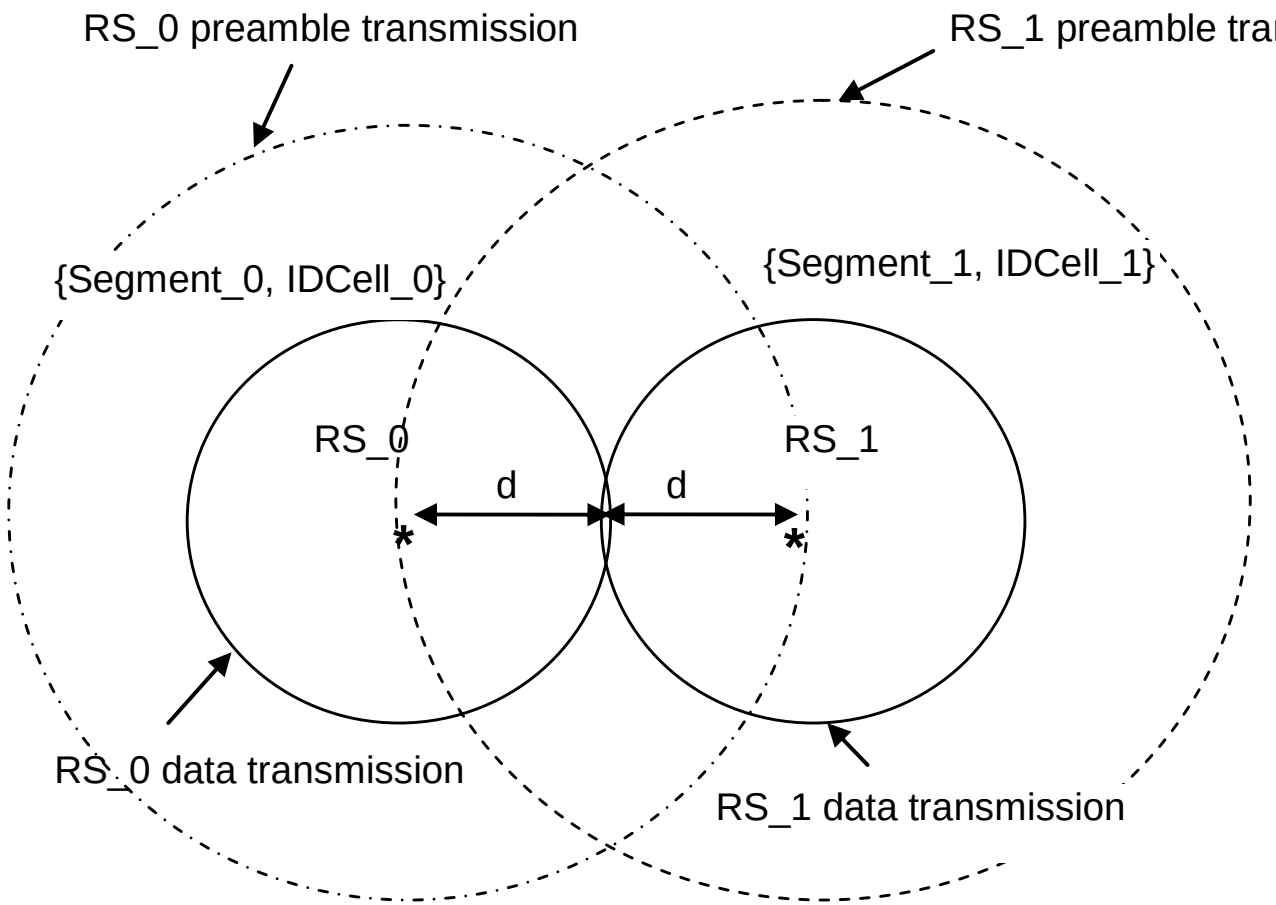
Introduction

- In the frame structure, the first OFDMA symbol of the DL transmission is preamble
- Three types of preamble carrier-sets (Segment 0, 1, and 2)
- In the DL PUSC mode, any segment used in the preamble shall be allocated at least one group of subchannels in the DL First Zone that contains FCH and DL-MAP
- The First Zone PUSC subchannels used do not have the DL permutation

Interference Possibility

- RS can be turned on at anytime/anywhere and with mobility
- If the RS overlaps in coverage with its neighboring RSs/BSs and the same segment values are used
- Than MS/SS could not decode the Cell-ID and the control messages (such as FCH and DL-MAP signals)

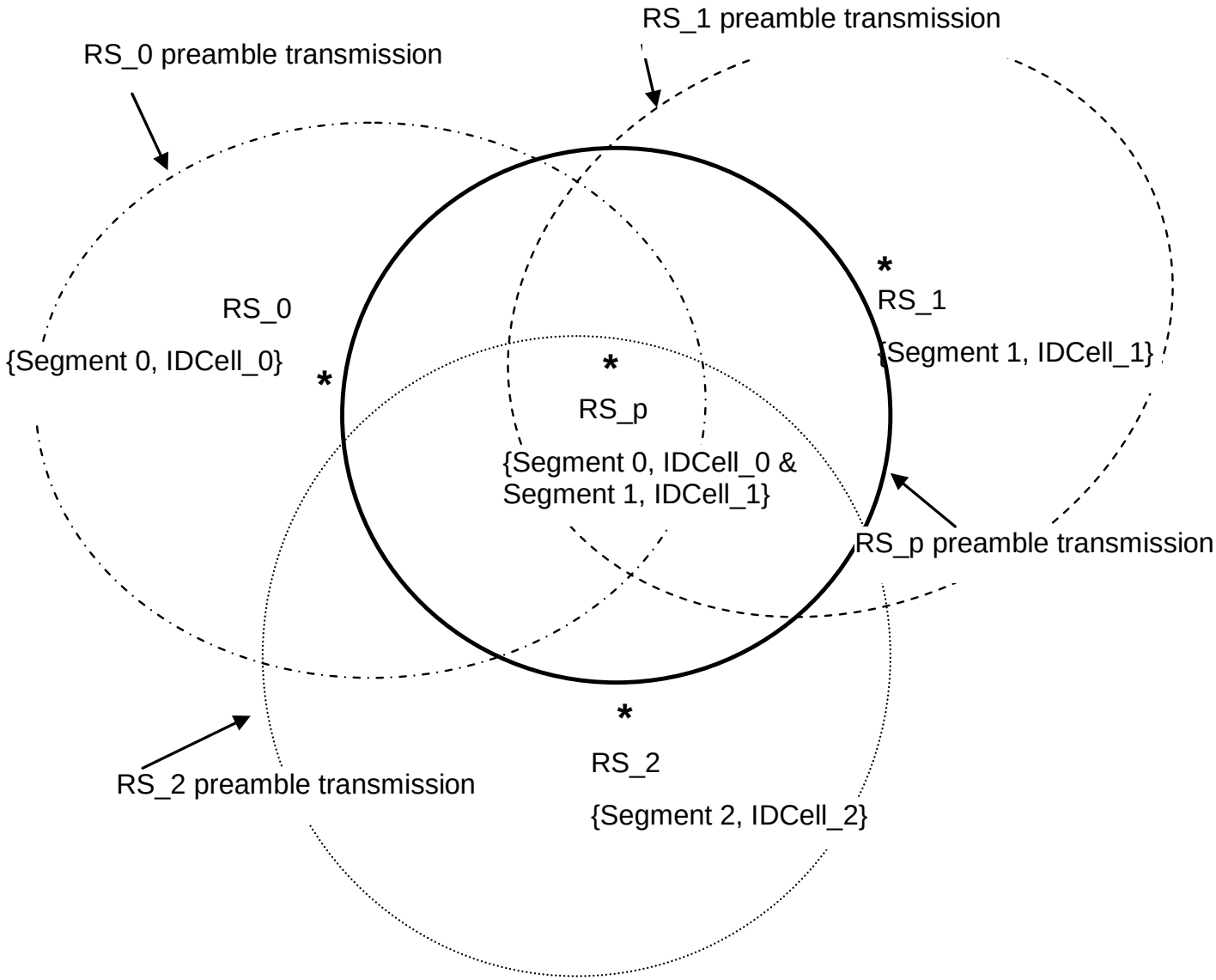
Initial RS Neighboring Detection



RS_1 can detect RS_0 preamble

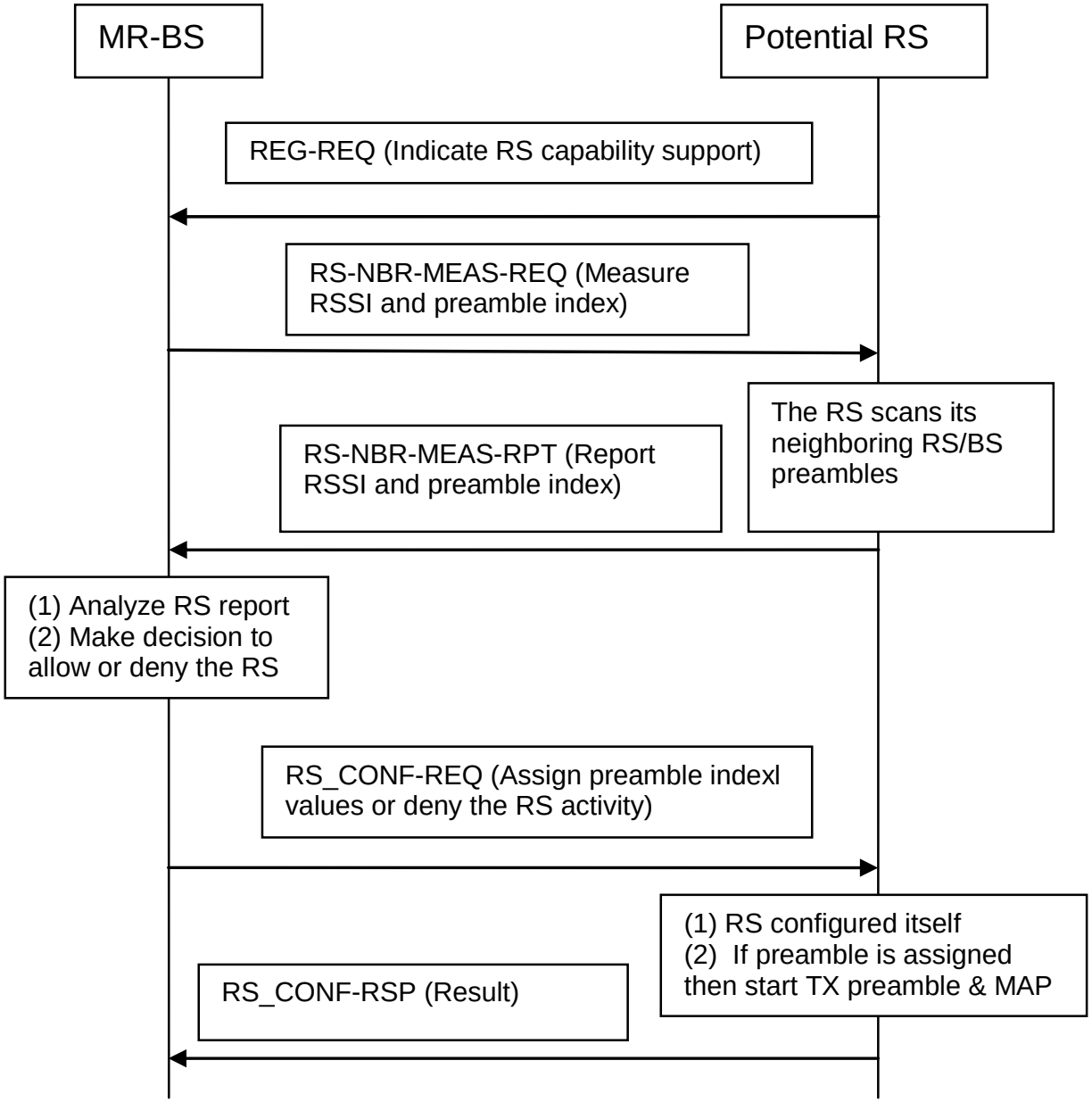
RS neighbor detection and RS segment assignment, where the pathloss exponent is 3.

Initial RS Preamble Segment Assignment



The RS_p relay could be acting as a cooperative-diversity relay for RS_0 and RS_1.

Message Signaling for RS Preamble Segment Assignment

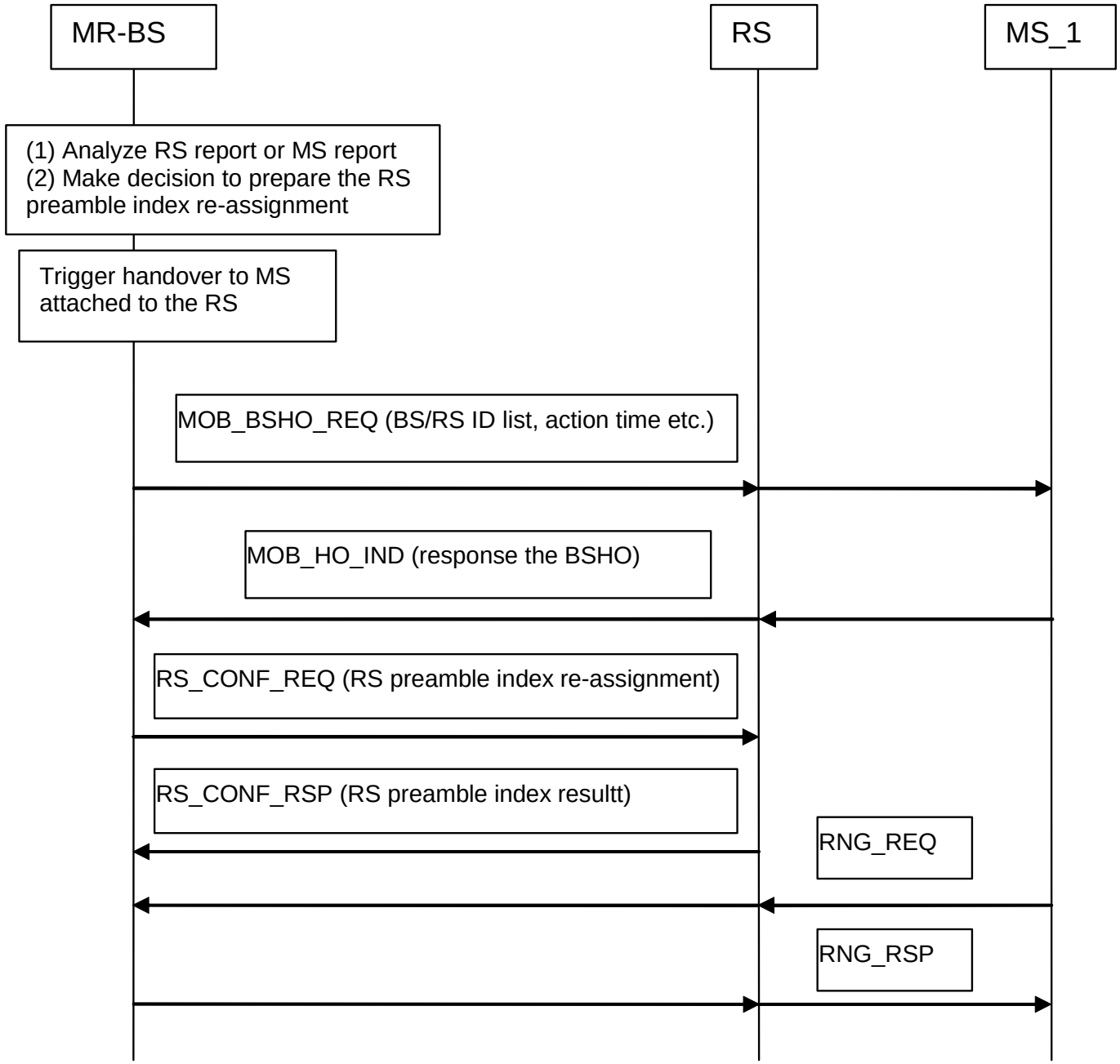


Mobile RS Neighboring Detection

- Embedding RS signature signal into the frame structure with periodic scanning of RS signature signal (the repetition time could be similar to the handover measurement report)

- Using the MS neighboring RSS measurement reports and its serving cell C/I report from the handover process to detect the neighboring interference

Message Signaling for RS Preamble Re-Assignment



Summary

- Initial RS neighborhood detection and its preamble segment assignment
- Mobile RS neighborhood detection and its preamble segment re-assignment