Open problems in Mobile Multi-hop Relay System

IEEE 802.16 Presentation Submission Template (Rev. 8.3)

Document Number:

IEEE C802.16mmr-05/028

Date Submitted:

2005-11-11

Source:

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Venue:

IEEE 802.16 Session #40, Vancouver, BC, Canada

Base Document:

None

Purpose:

information

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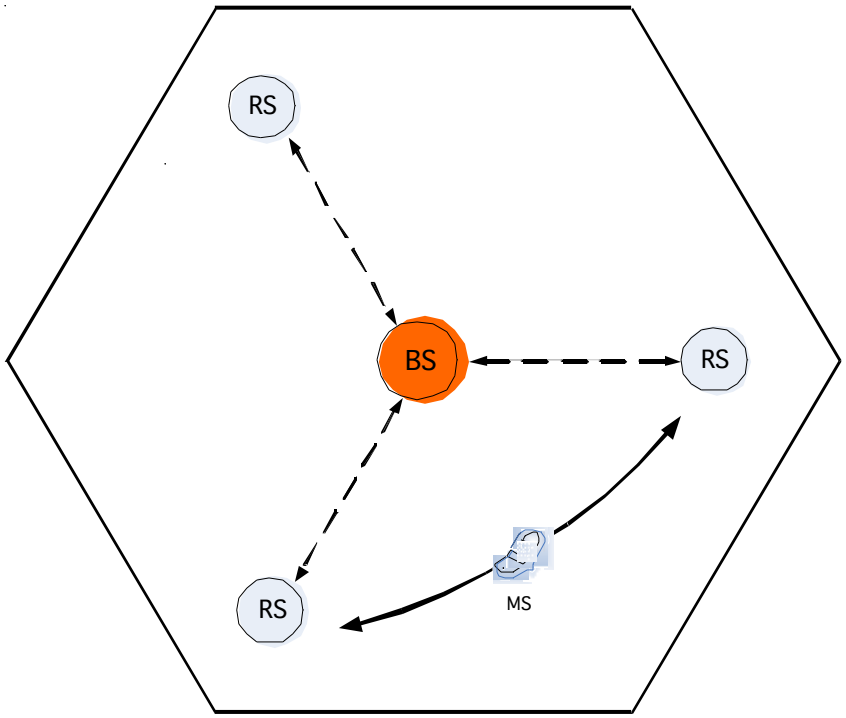
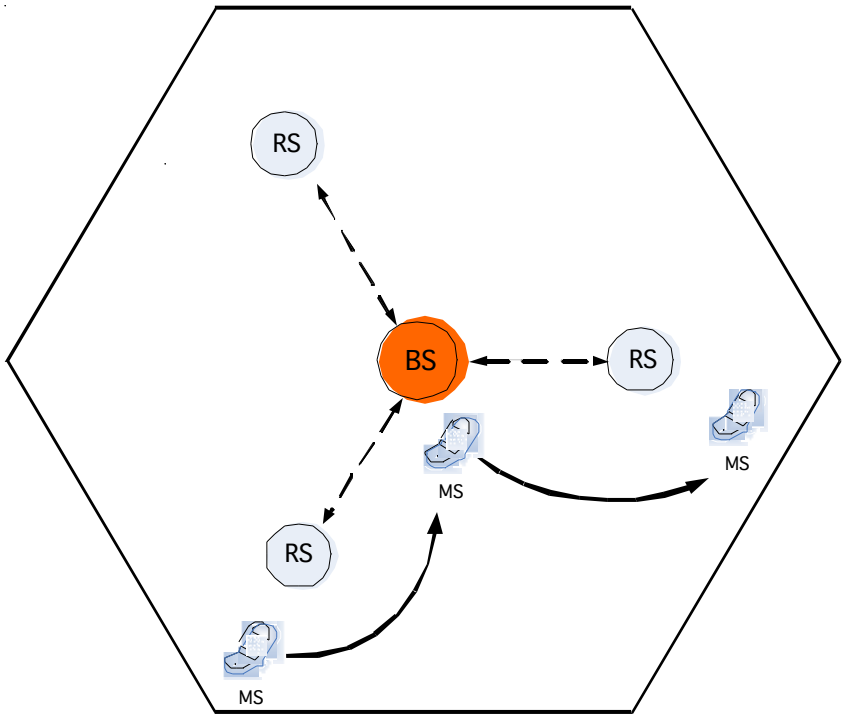
Handoff Scenario

- Intra BS handoff
  - Intra BS, Inter RS Handoff
    - RS 1 → RS 2
  - BS → RS
  - RS → BS
- Inter BS Handoff
  - BS 1→ BS2
  - BS1.RS → BS2
  - BS 1 → BS2.RS
  - BS1.RS → BS2.RS

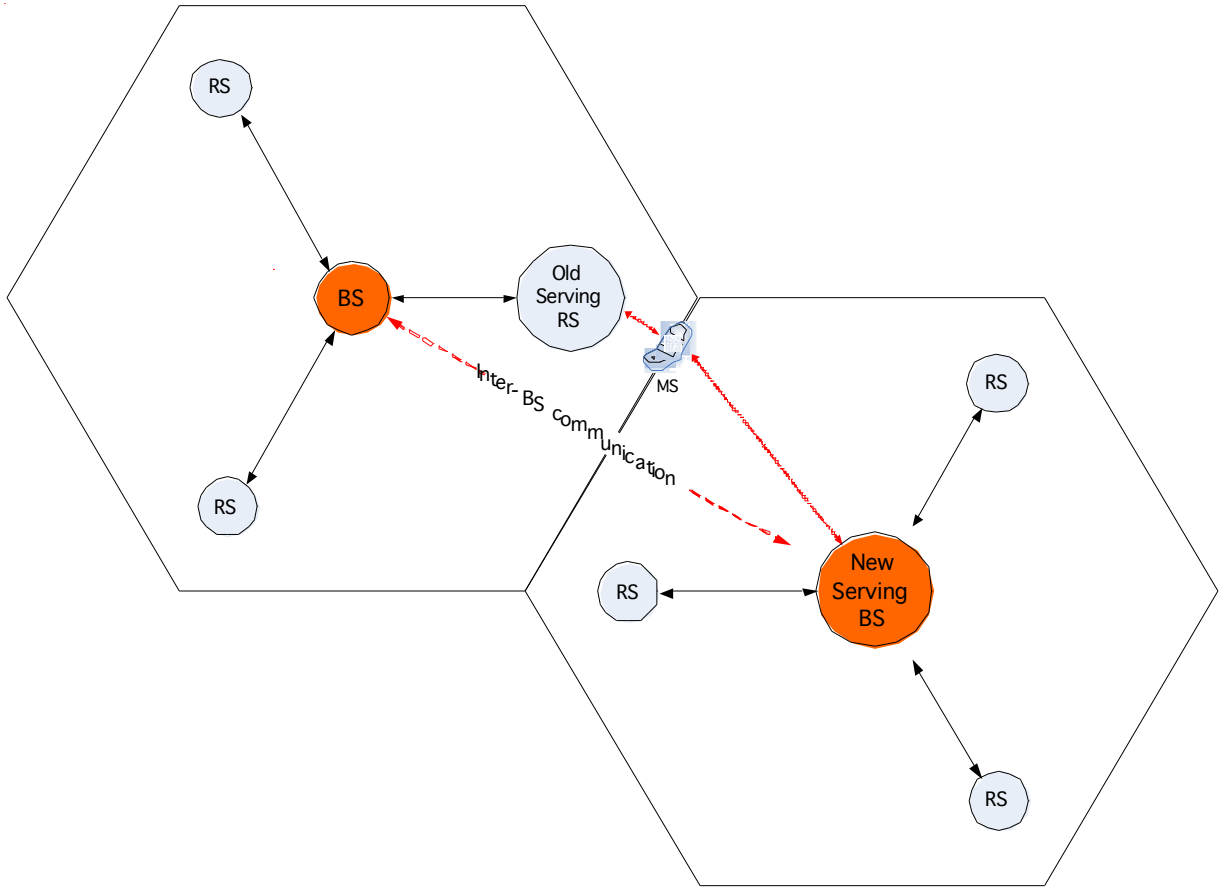
Intra BS, Inter RS Handoff (RS 1 → RS 2)



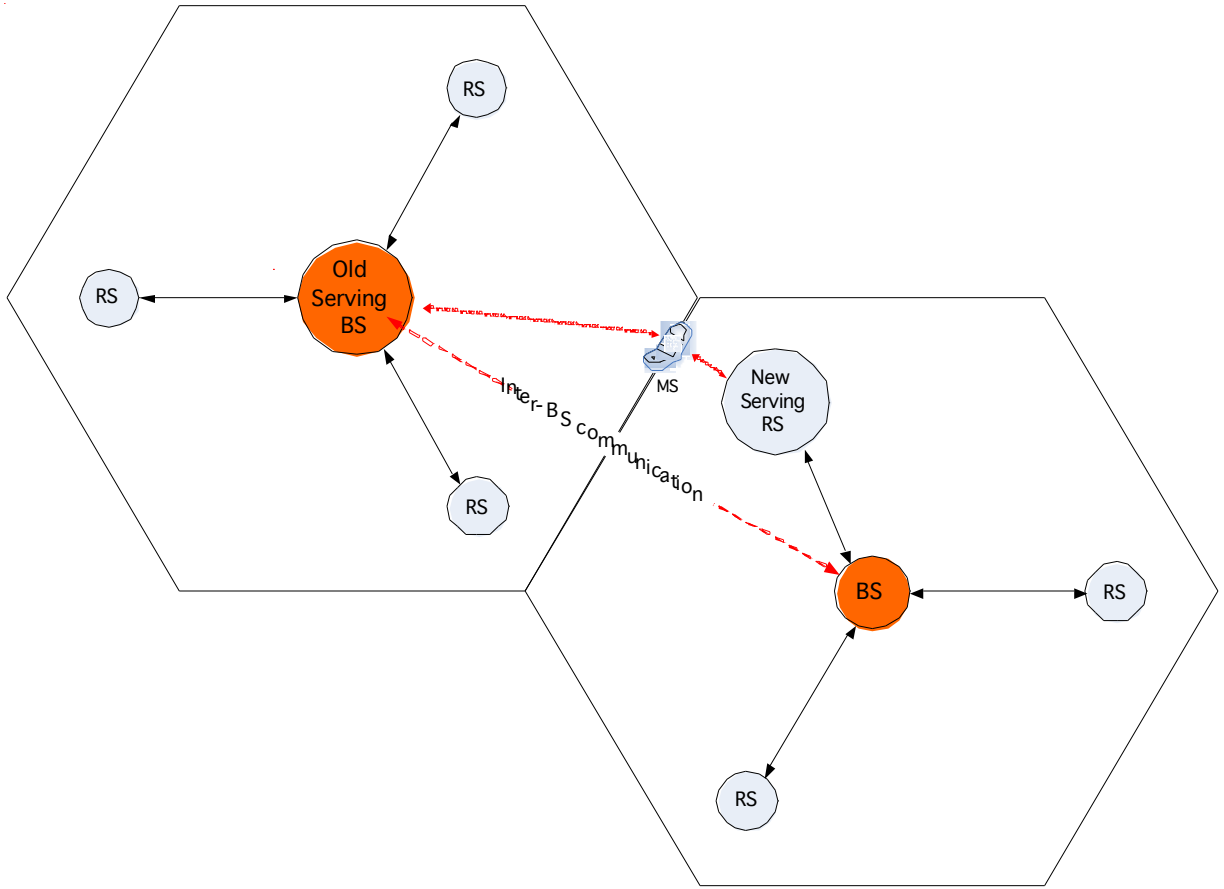
Intra BS Handoff
BS → RS or RS→ BS



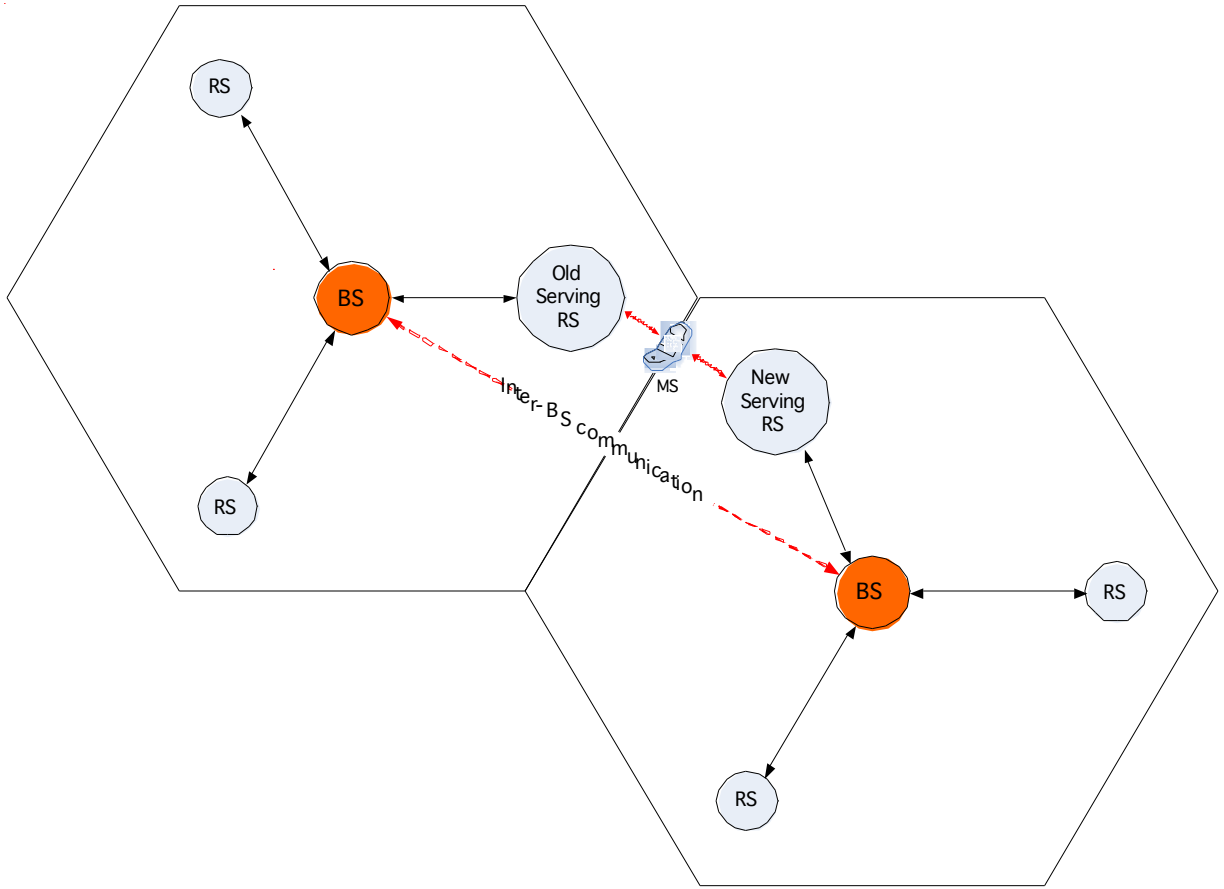
Inter BS Handoff
BS1.RS → BS2



Inter BS Handoff
BS1 → BS2.RS

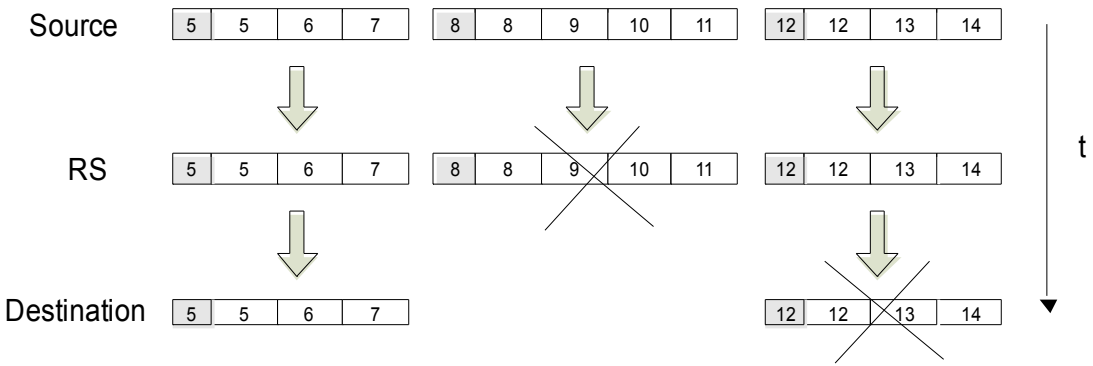


Inter BS Handoff
BS1.RS → BS2.RS



ARQ scheme

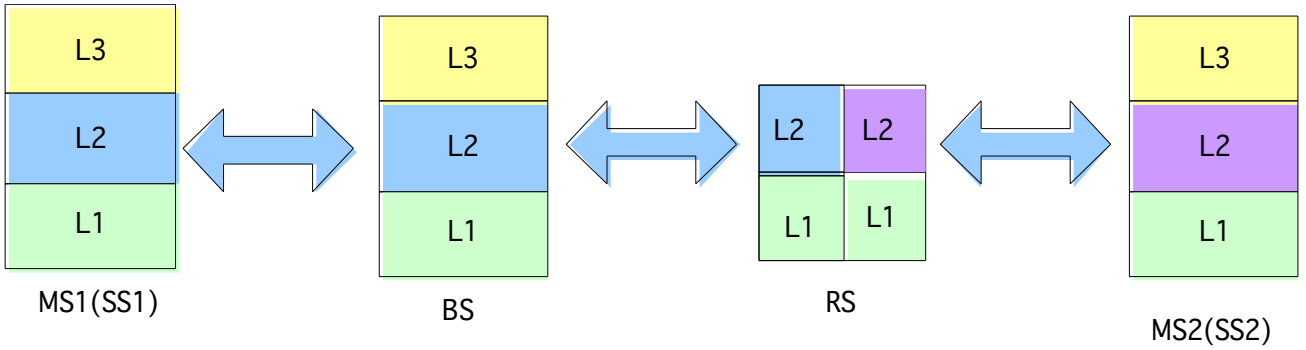
- Problem definition
  - ARQ is specified during connection setup between BS and MS
  - When RS is introduced, the function of RS related to ARQ should be defined for efficient data delivery and ARQ feedback
  - Example : ARQ selective ACK map



ARQ : Error recovery per hop

- Error recovery per hop
  - Different blocks may be used for each ARQ
    - Different block sizes
    - Different sequence number

- Protocol Stacks



ARQ : Error recovery for multi-hop route

- Error recovery for complete multi-hop route
  - The same blocks are used in multi-hop links
    - The same block sequence number
    - The same block sizes
    - The number of blocks used in one transmission of RS may be changed
- Protocol Stacks