MS Handover Support in 802.16j

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Purpose:

To present proposed MS handover support in 802.16j.

MS Handover Support in 802.16j
- #265, #267, #268, #269, #270

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Handover Scenarios in .16j

- Intra-MMR cell handover scenarios
  - MMR-BS to RS within MMR-BS cell
  - RS to MMR-BS within MMR-BS cell
  - Between RSs within MMR-BS cell

- Inter-MMR cell handover scenarios
  - MMR-BS to RS within other MMR-BS cell
  - RS to other MMR-BS
  - RS to RS within other MMR-BS cells
  - Between MMR-BSs

Our proposal 'MS handover in 16j' is designed to support all the aforementioned scenarios.

Considerations

- Handover procedures for MS in 16j shall be backward compatible with that of 16e.

  – Handover related control signaling to MS shall remain unchanged.

Key Features of the Proposal

- Maximizes the reuse of legacy 16e mechanism

    – For MS handover, the legacy BS-BS handover signaling messages are extended for signaling over relay links.

- Centralized MS handover controlled by MMR-BS

- Proposal can accommodate RSs of different capabilities.

# Levels of Handover Handling by RS

- Some RSs just forward the handover signals between MMR-BS and MS.

- Some RSs can compose handover signals under the direction of MMR-BS.

- Some RSs can trigger the MS handover.

Subtopics in Handover

- Customized neighbor information (#270)
- Scanning (#269)
- Handover procedure (#265, #267, #268)

Customized neighbor information (#270)

- MMR-BS composes customized neighbor information using location information of RSs

- RS regenerates MOB_NBR-ADV messages with the customized neighbor information for its own cell.

Obtain RS's location information
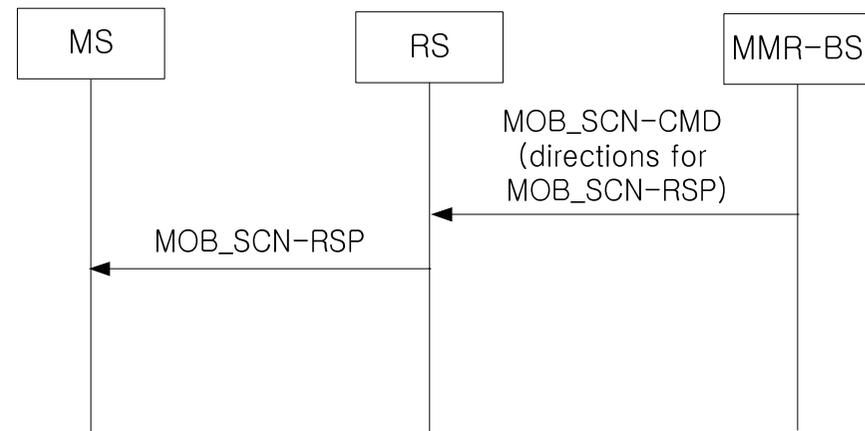
Regeneration of MOB_NBR-ADV
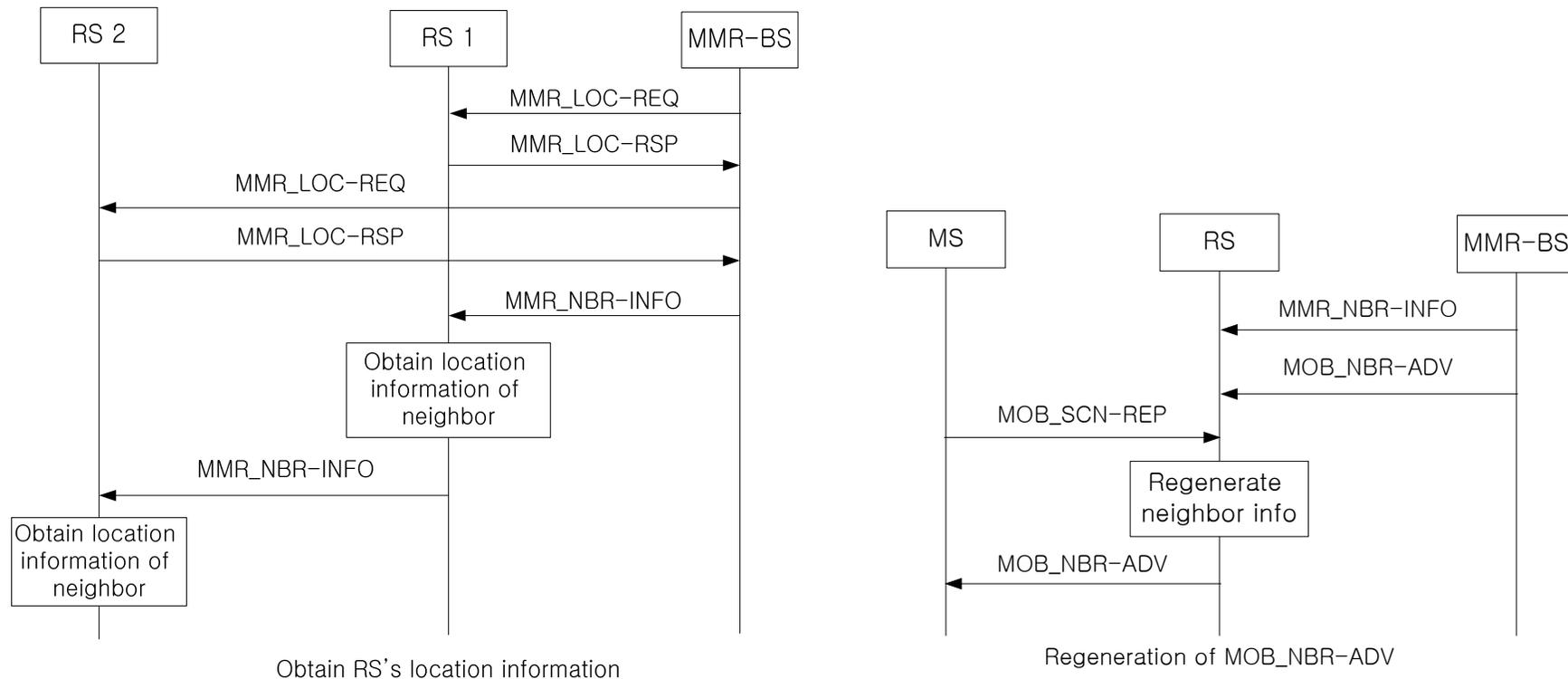
Scanning (#269)

- MMR-BS controls MS's scanning.
- RS can either forward the scan negotiation signals between the MS and the MMR-BS.
- Or, the RS can compose the scan negotiation signals under the direction of MMR-BS.
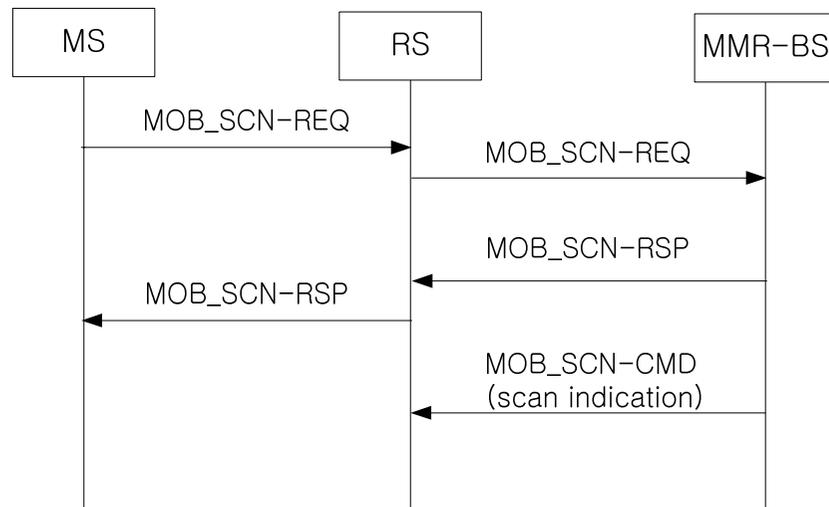
BS controlled case 1 (MS initiated)

BS controlled case 2 (BS initiated)

Handover (#265, #267, #268)

- MMR-BS controls the handover operation.

- MMR-BS maintains MS's context information.

- Either an RS just forwards handover negotiation signals

- Or, an RS may compose the handover negotiation signals under the direction of MMR-BS.

- Or, an RS may trigger the MS handover.

BS triggering handover

RS triggering handover
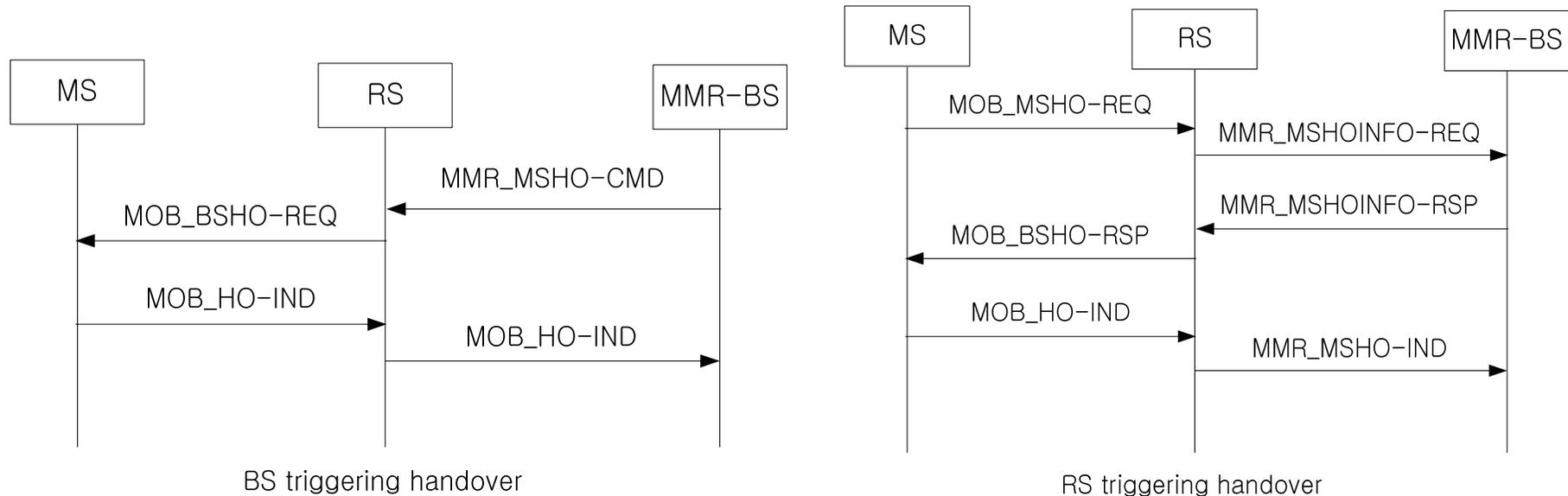
Summary

- Maximum reuse of 16e mechanism in 16j handover features
  - The same flow and control information to MS
  - Same but extended flow/information in relay link
    - Relay link signaling utilizes 16e backbone flow.
- Handle MS handover based on the capability of RS
  - Flow/control information for RS participating in MS handover