

# Moving RS Operation

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### Purpose:

To discuss and adopt the proposal

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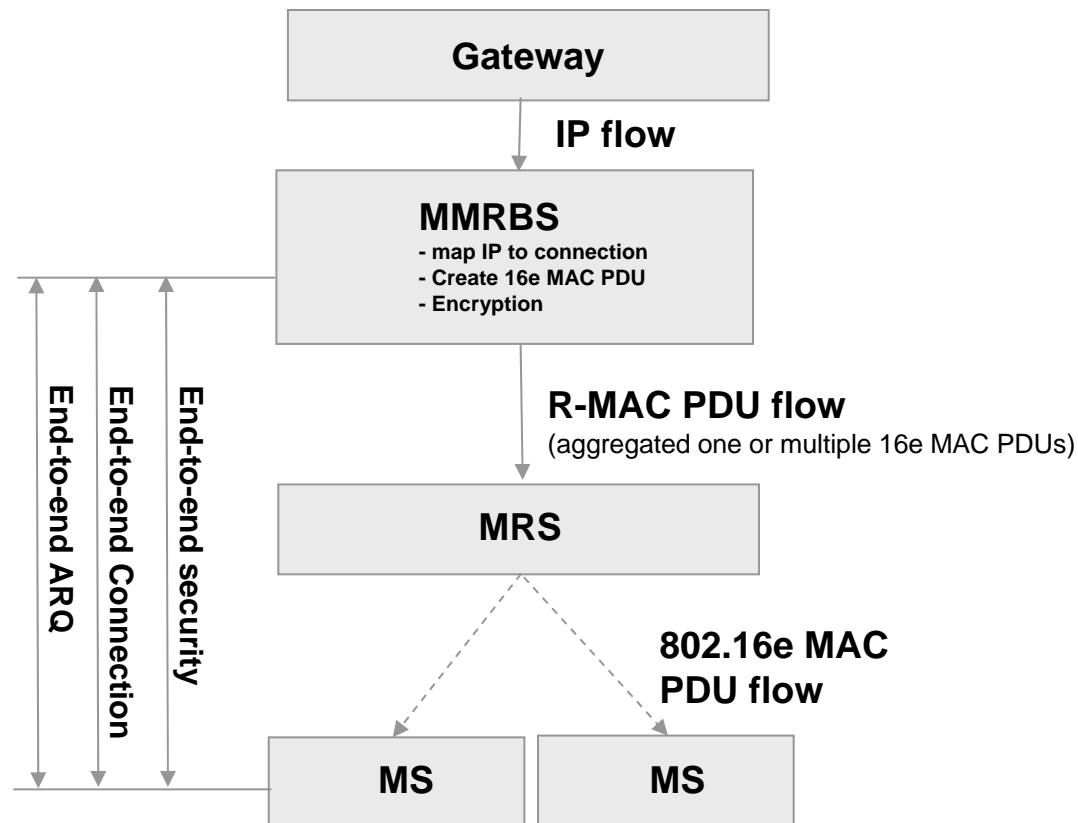
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# Introduction

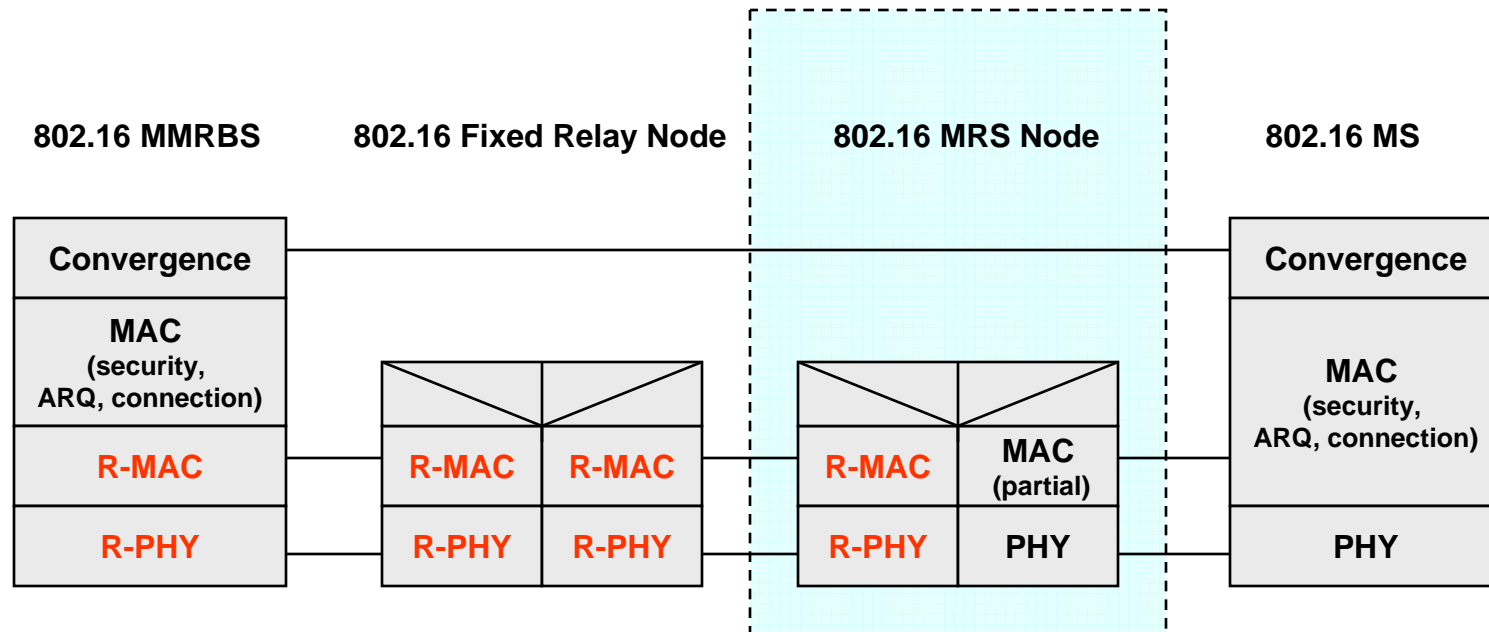
- In this contribution, we propose two modes of a moving RS operation
  - Moving BS (MBS) mode
    - End-to-end connection is established between MMRBS and MS
    - DL packet of MSs are routed from network to BS and BS map them on MSs' connections
    - RS forwards the packet to MS
  - Moving RS (MRS) mode
    - An MS's connections are established between the MS and its associated moving RS
    - A moving RS's connections are established between the moving RS and its associated MMRBS
    - DL packet of an MS, which is associated with a moving RS, is routed to the MRS over the connection between MMRS and the MRS; The data then is mapped to the connection of the MS by MRS

# Architecture of MRS Mode

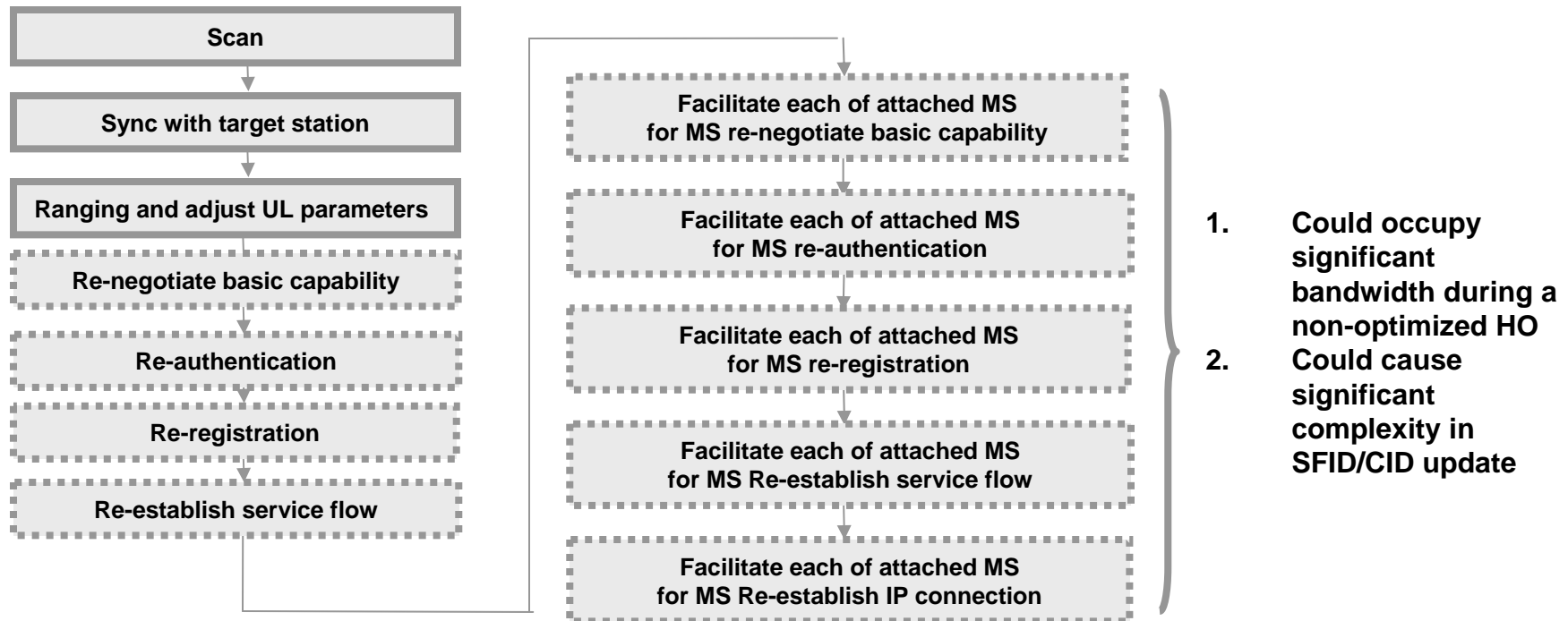
- End-to-end connection is established between MMRBS and MS
- MMRBS (multi-hop mobile relay BS) maps the those service data flows to MSs' connections



# Protocol Stack of MRS Mode



# HO Operation of MRS Mode

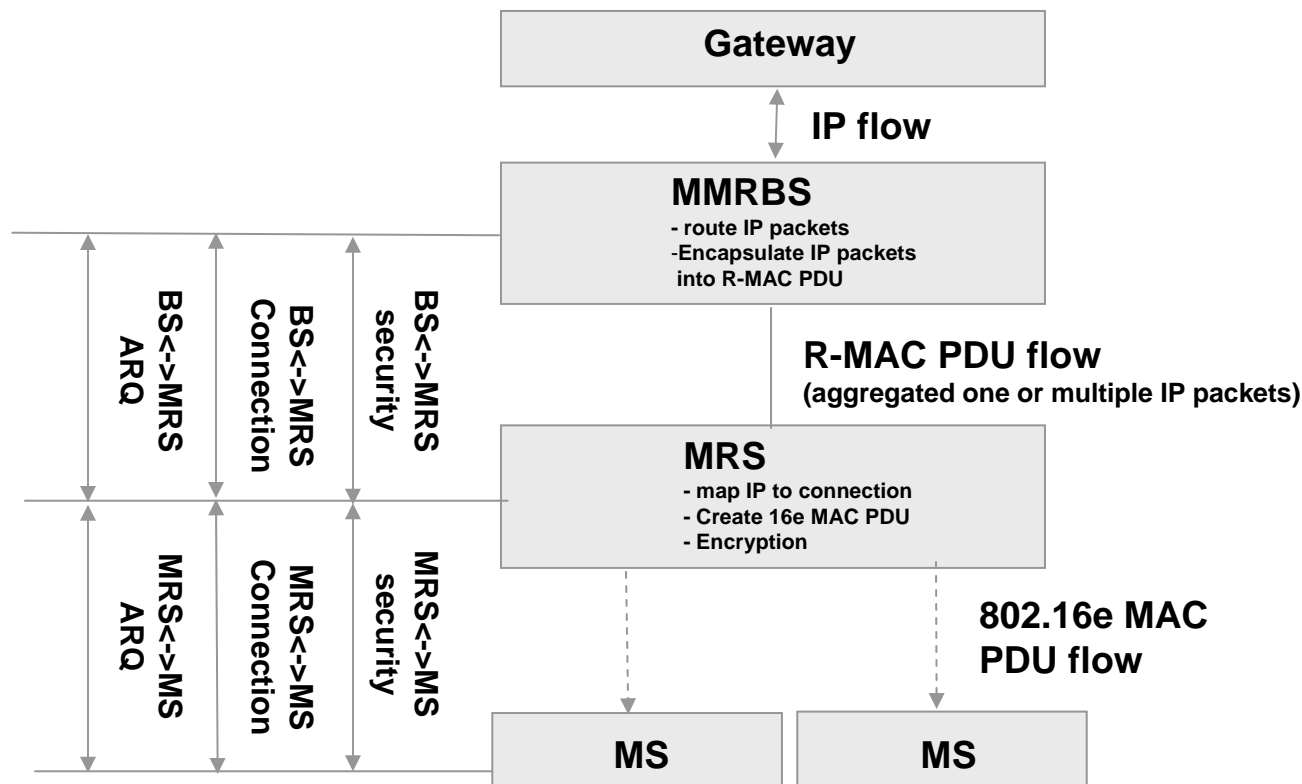


- Highlight

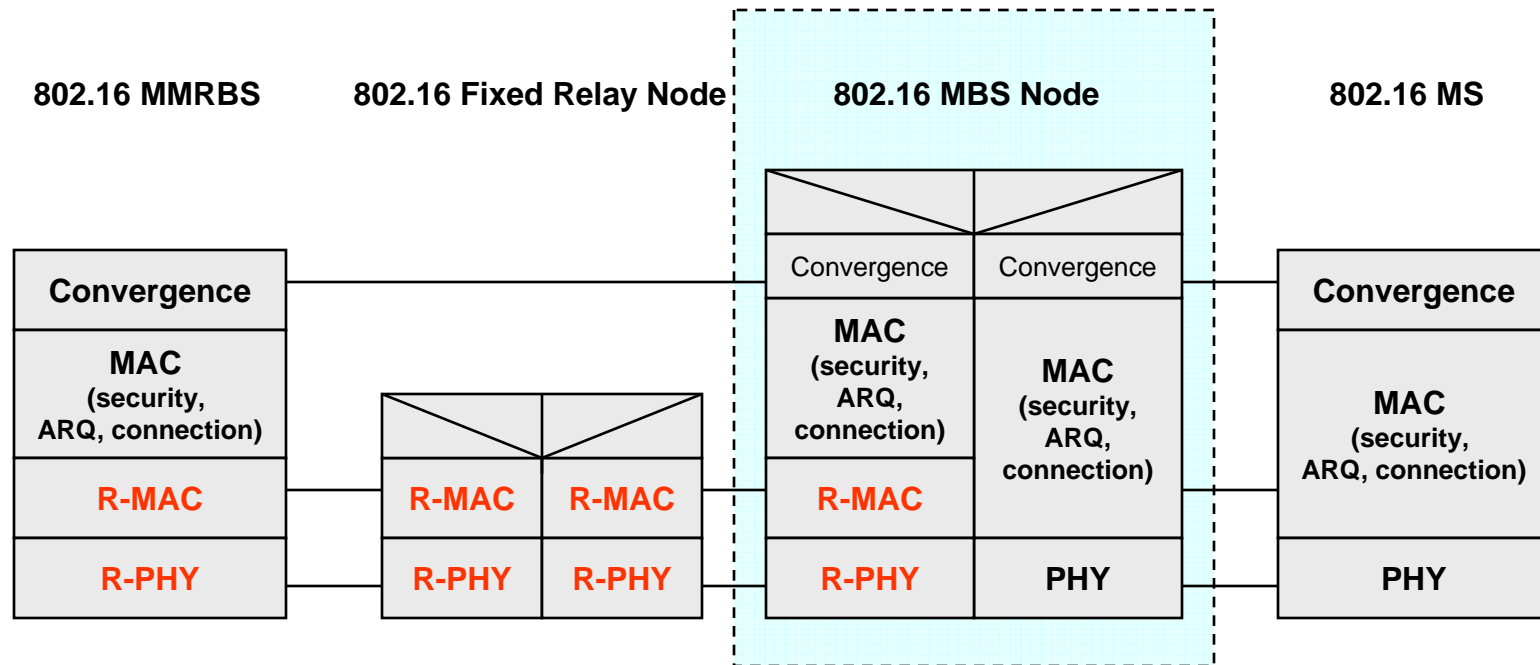
- At each non-optimized HO instant, an MRS must facilitate each attached MS for re-negotiation of basic capability, re-registration and re-establish service flows
- At each of optimized HO instant –
  - SFID/CID change for all MS(s) attached to a MRS may be required
  - Context (ARQ state, timer, etc) transfer between serving BS and target BS through backhaul is required (for all of MS(s) attached to a MRS)

# Architecture of MBS Mode

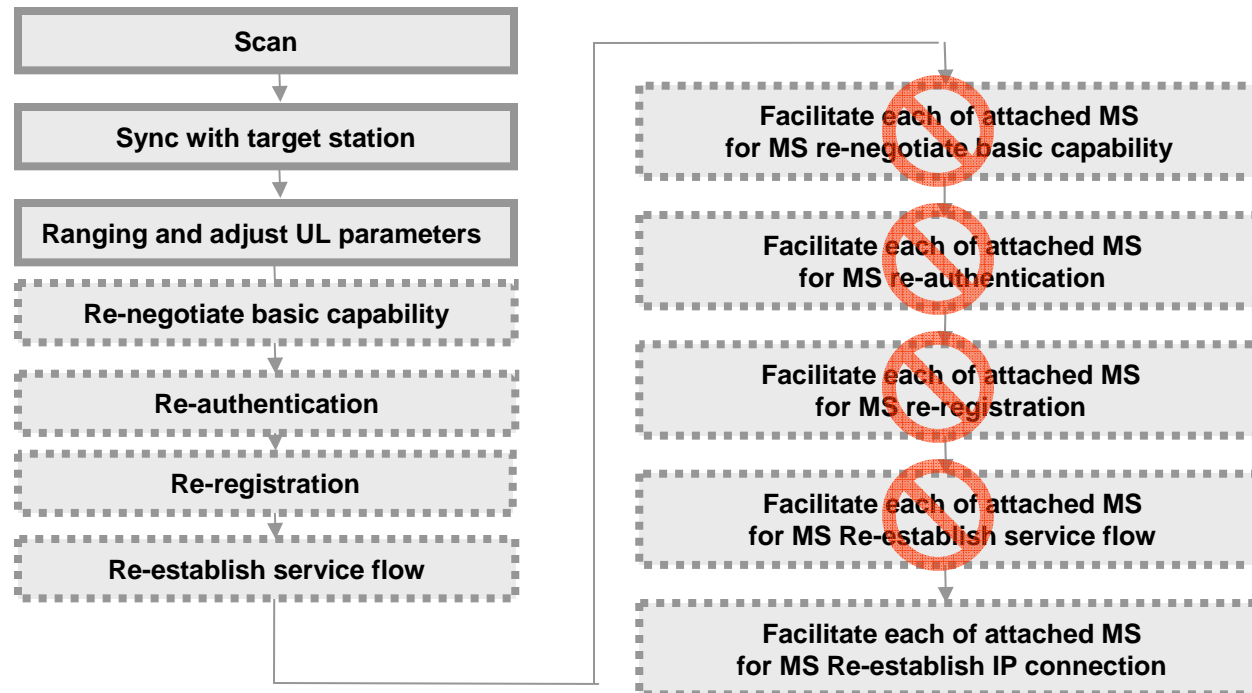
- A transport connection is established between MMRBS and MRS
  - dedicated for MSs' traffic relaying
- Connections of MS(s) are established between MRS and MS(s)
- All service data flows associated with MS(s) served by MRS are mapped to the MRS's transport connection
- MRS maps the those service data flows to each of MSs' connection



# Protocol Stack of MBS Mode



# HO Operation of MBS Mode



- **Highlight**
  - Procedures of facilitating each attached MS for re-negotiation of basic capability, re-registration and re-establish service flows can be fully avoided. The re-authentication of each of attached MS(s) may be avoided
- **Benefits**
  - Avoid SFID/CID change for each MS associated with a MBS
  - Avoid context (ARQ state, timer, etc) transfer between serving MMRBS and target MMRBS through backhaul for each MS associated with a MBS



# Summary

- We suggest that 802.16j support MRS and MBS modes
- The mode supported can be negotiated during RS network entry