Moving RS Operation

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Purpose:

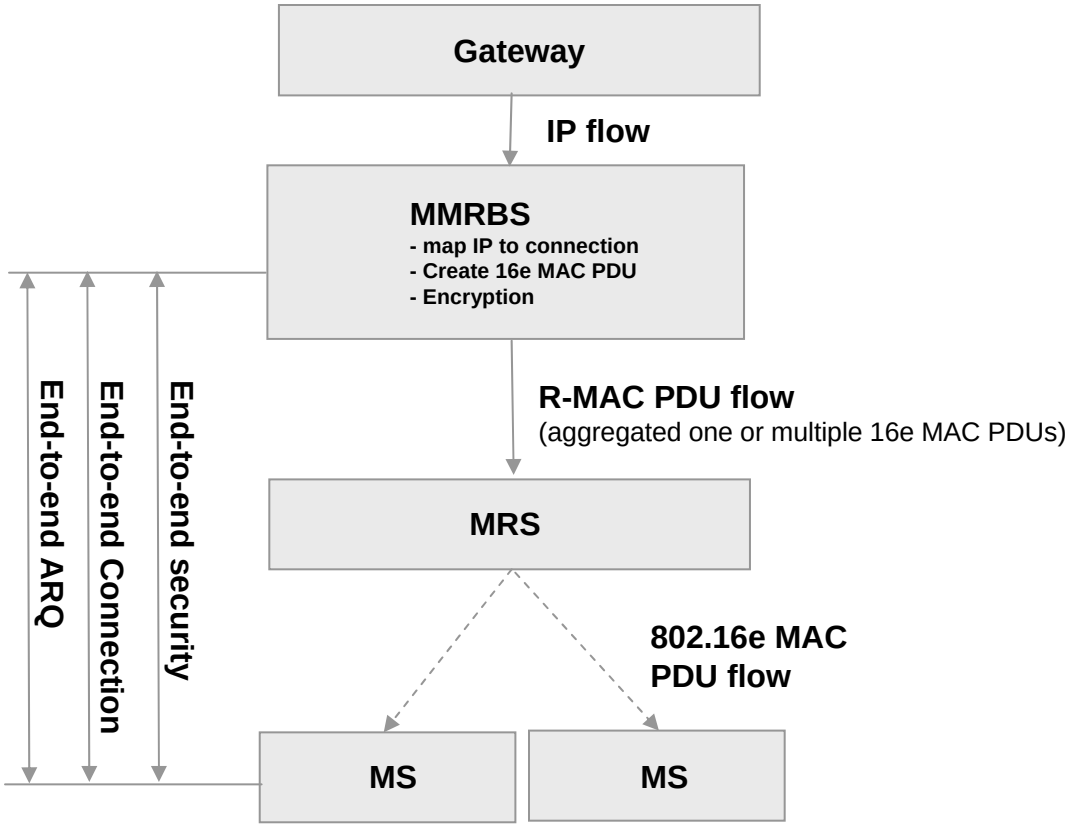
To discuss and adopt the proposal

Introduction

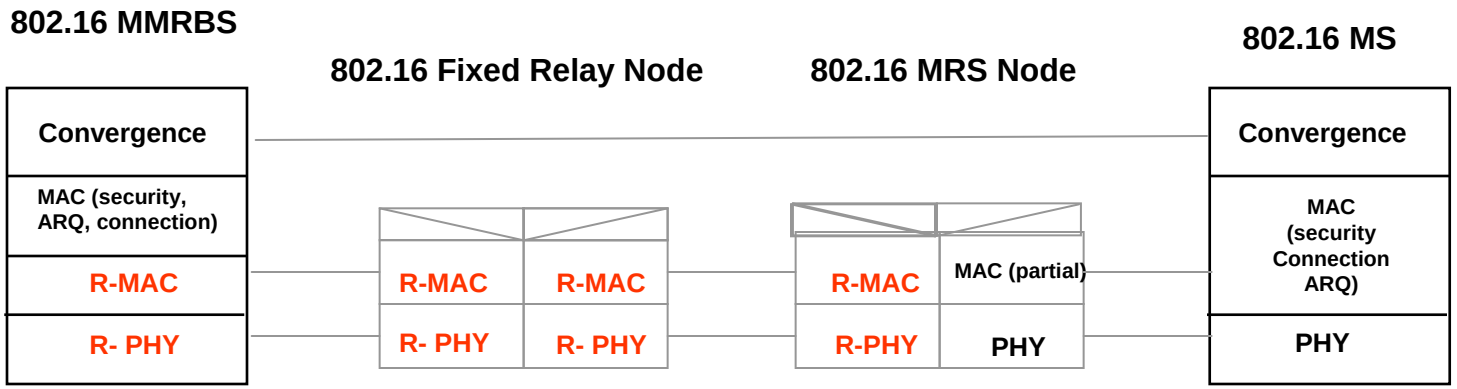
- In this contribution, we propose two modes of a moving RS operation
  - Moving RS (MRS) mode
    - End-to-end connection is established between MMRBS and MS
    - DL data packet of MSs are routed from network to BS and BS map them on MSs' connections
    - RS forwards the packet to MS
  - Moving BS (MBS) mode
    - A 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 data of a 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

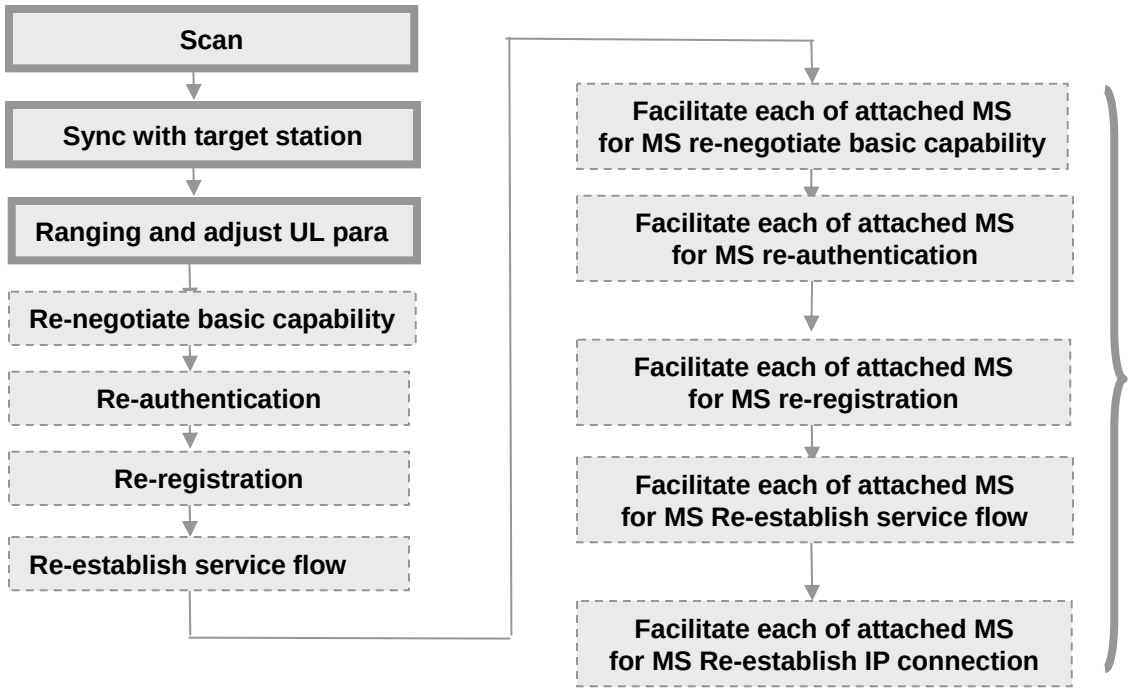
- End-to-end connection is established between MMRBS and MS
- MMRBS (multi-hop mobile relay BS) maps the those service data flows to MSs' connections



Protocol Stack of MRS Mode



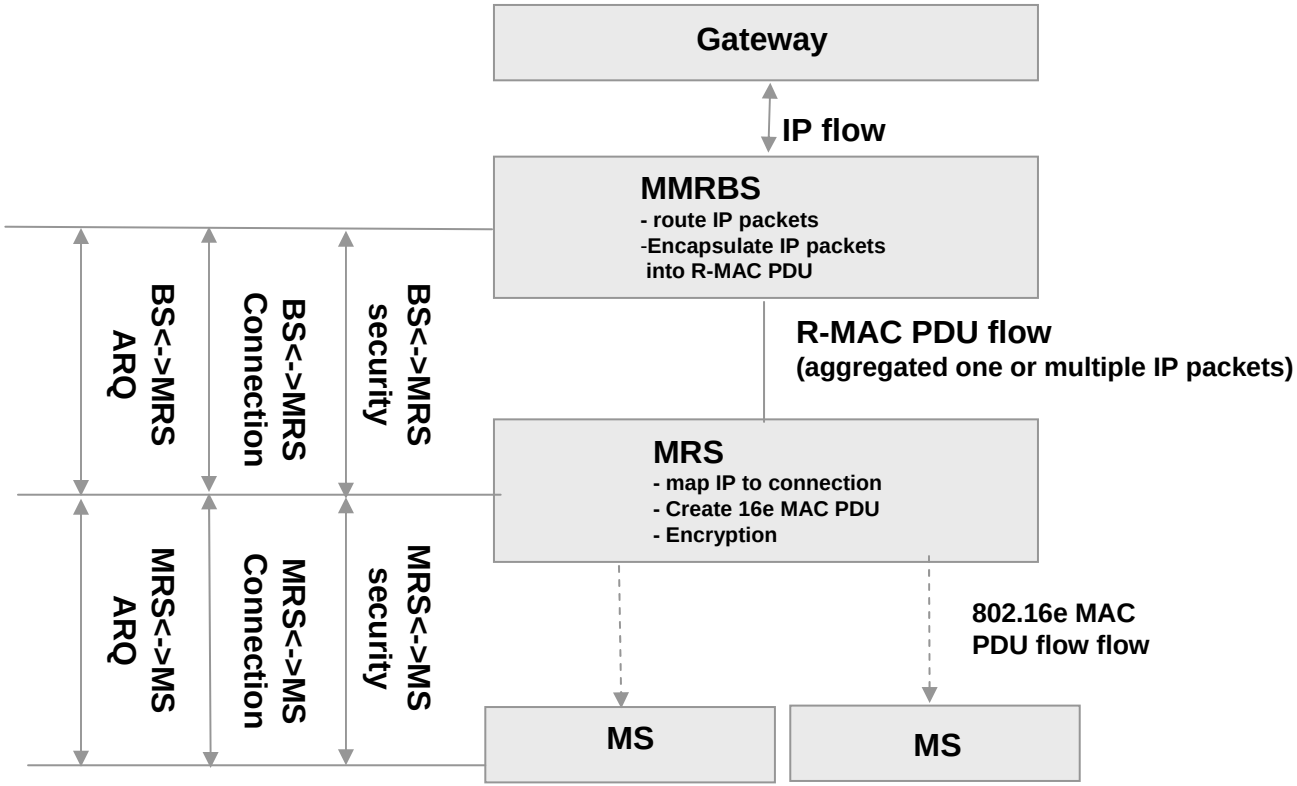
HO Operation of MRS) Mode



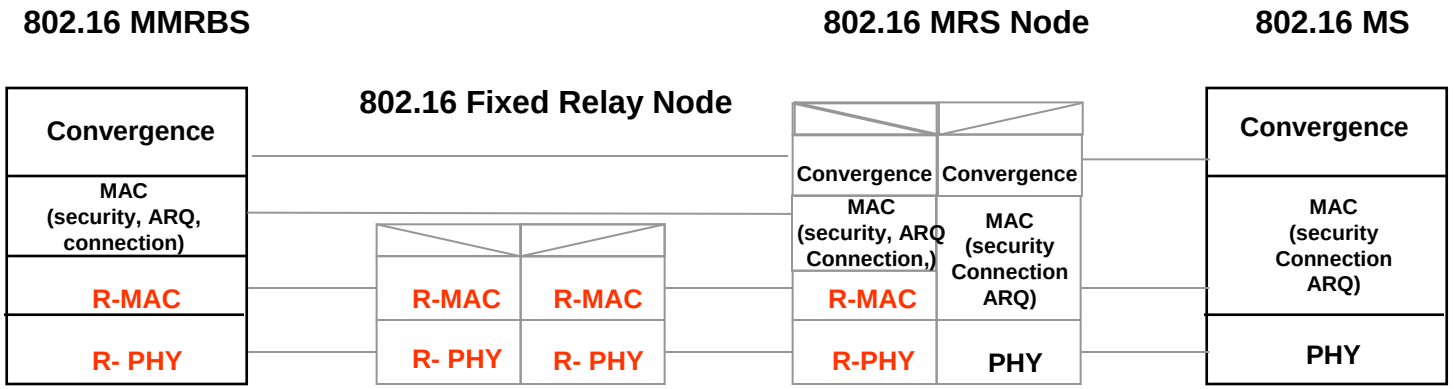
- Highlight
  - At each non-optimized HO, a MRS must facilitate each attached MS for re-negotiation of basic capability, re-registration and re-establish service flows
  - At each of optimized HO
    - SFID/CID change for all MSs attached to a MRS may be required
    - Context (ARQ state, timer, etc)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

Architecture of MBS Mode

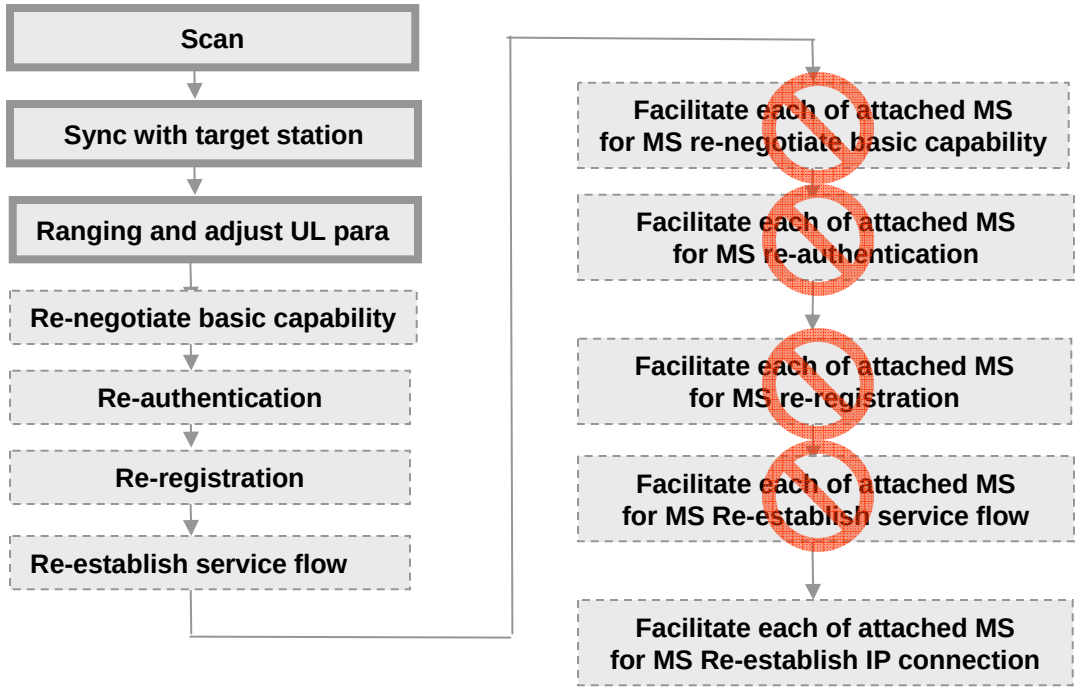
- A transport connection is established between MMRBS and MRS (dedicated for MSs' traffic relaying)
- Connections of MSs are established between MRS and MSs
- All service data flows associated with MSs served by MRS are mapped to the MRS's transport connection
- MRS maps the those service data flows 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 MSs may be avoided
- Silent benefits
  - Avoid SFID/CID change for each MS associated with a MRS
  - Avoid context (ARQ state, timer, etc) transfer between serving MMRBS and target MMRBS through backhaul for each MS associated with a MRS

Summary

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