Early Handover Trigger

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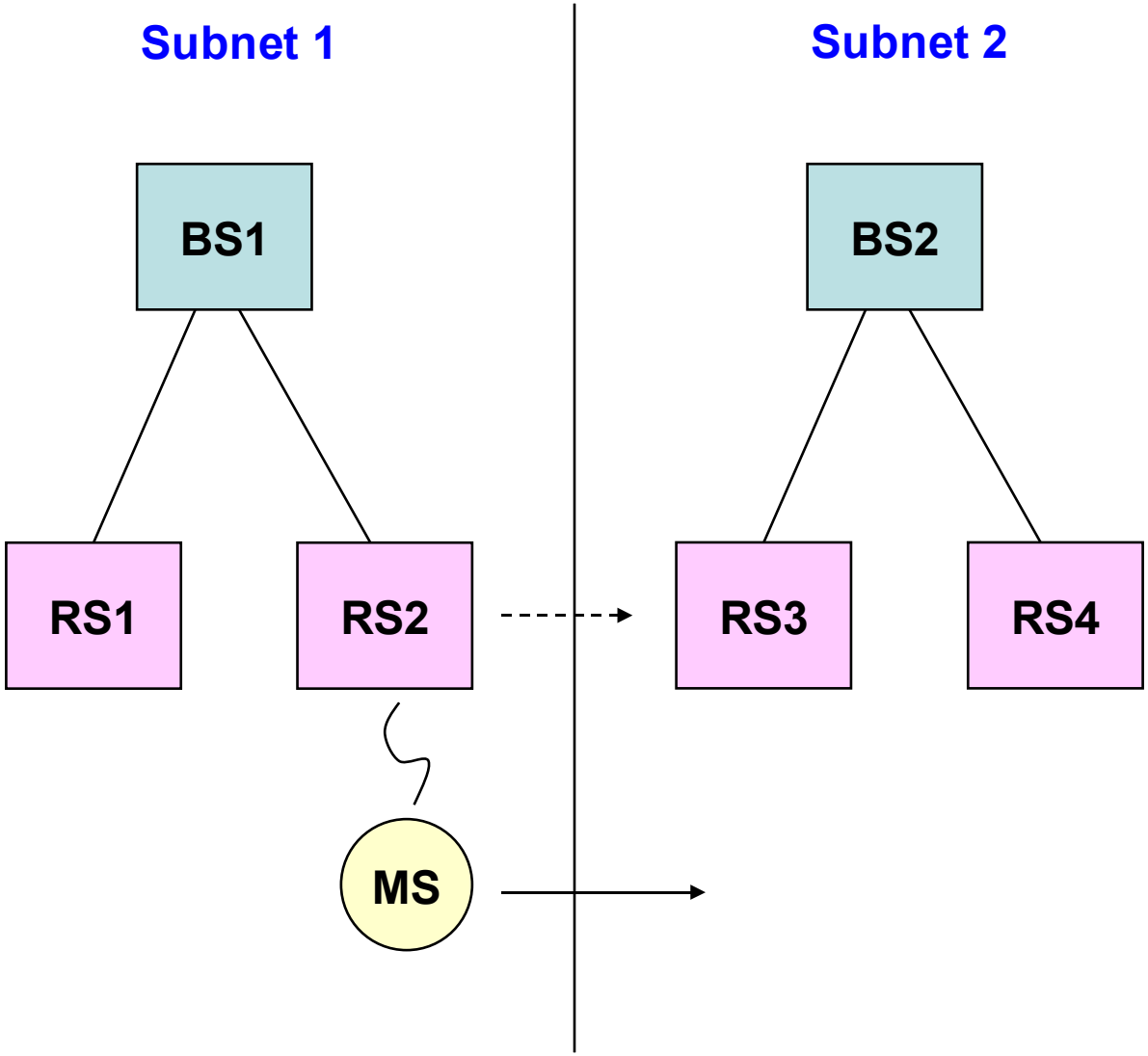
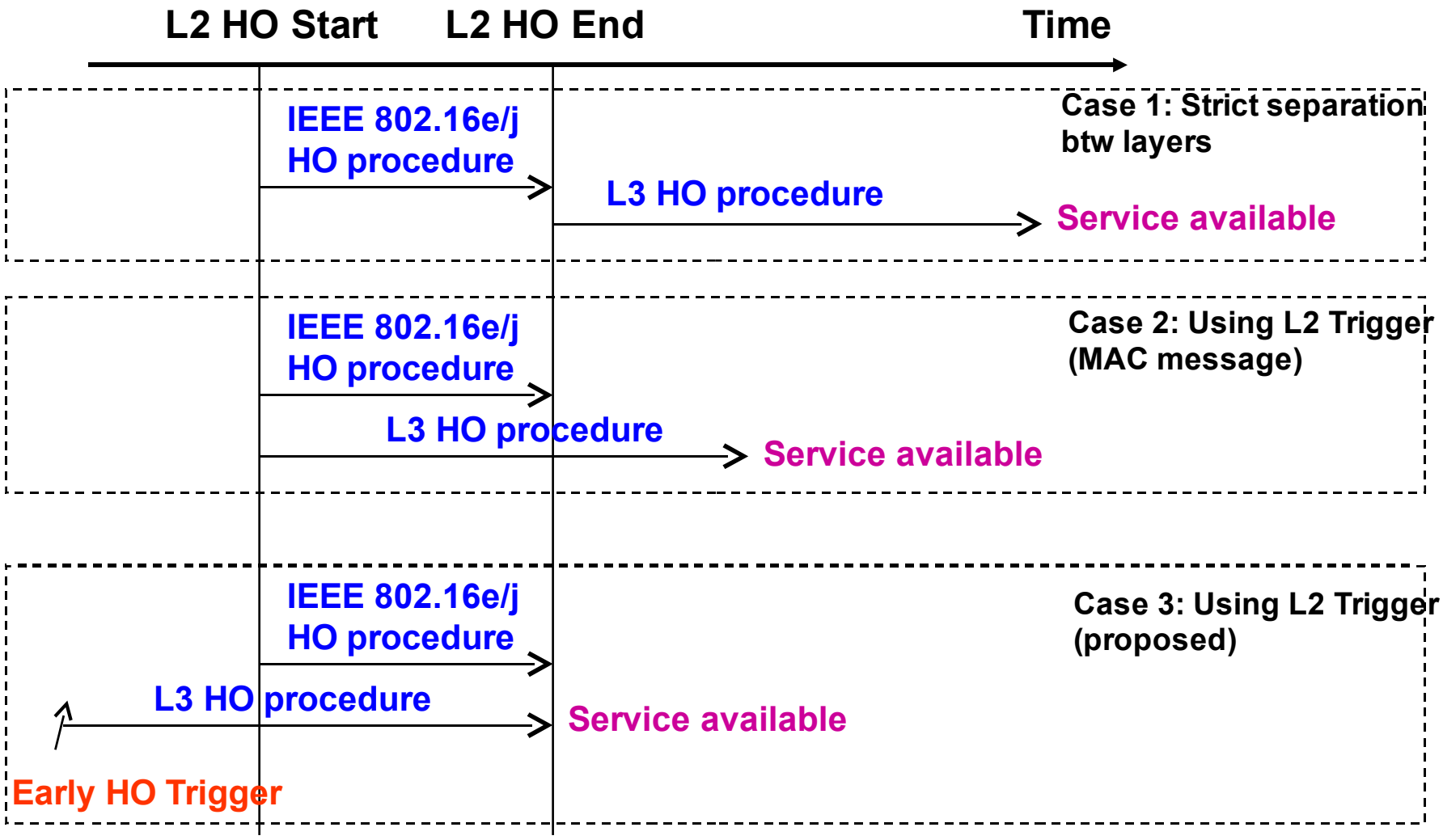
Problem Statements

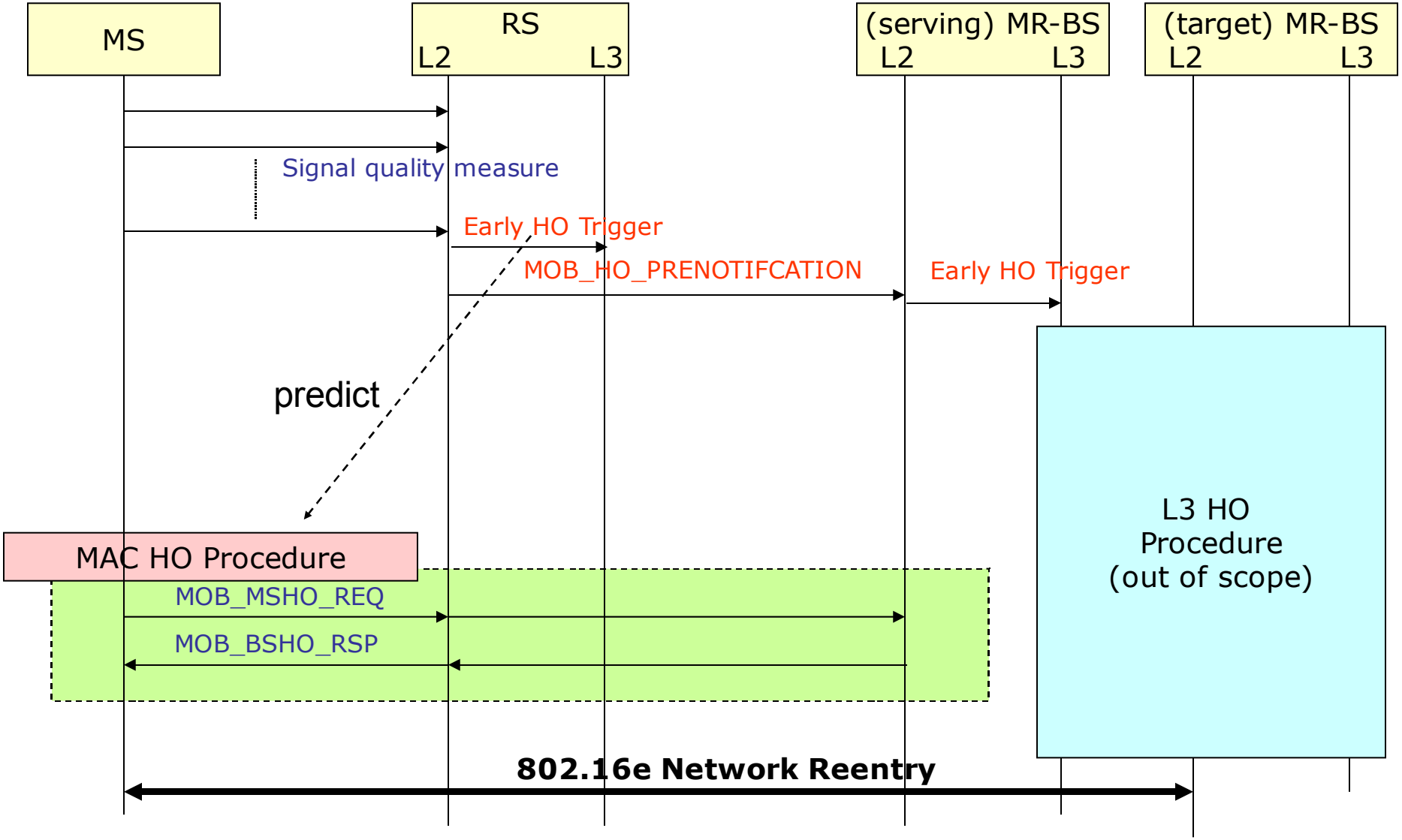


- With introducing RS
  - 7 HO cases can be considered [Intel]
  - Frequent HO
  - High HO latency
    - Multi-hop relay
    - Strict separation btw layers

HO Latency


L2 HO Start
L2 HO End
Time
IEEE 802.16e/j HO procedure
L3 HO procedure
Service available
Case 1: Strict separation btw layers
IEEE 802.16e/j HO procedure
L3 HO procedure
Service available
Case 2: Using L2 Trigger (MAC message)
IEEE 802.16e/j HO procedure
L3 HO procedure
Service available
Early HO Trigger
Case 3: Using L2 Trigger (proposed)

Proposed Message Flows



Summary

- Optional
- Key feature
  - To reduce total HO latency two things have been proposed:
    - Early HO Trigger event (local event inside RS)
    - MOB_HO-PRENOTIFICATION message (to inform MR-BS of early HO trigger occurring.
  - Trigger condition is out of scope.

Text Changes

- *[Insert new subclause 6.3.22.1.2.1]*
- **6.3.22.1.2.1 Handover Early Trigger**
- An early handover trigger, so called L2 trigger, is a signal of an L2 event and it is early notice of an upcoming change in the L2 point of attachment of the MS to the access network. An RS may generate early handover trigger event to accelerate corresponding L3 handover procedure so that total handover latency can be reduced. To support centralized MR network, early trigger event is transmitted to MR-BS by MOB_HO-PRENOTIFICATION message. Upon reception of the MOB_HO-PRENOTIFICATION message, the MR-BS shall start L3 handover procedure.
- *[Insert new subclause 6.3.2.3.xx]*
- **6.3.2.3.xx MOB_HO-PRENOTIFICATION message**
- The RS or MR-BS may transmit a MOB_HO-PRENOTIFICATION message when a handover is expected in the near future. This message may be generated prior to MOB_MSHO-REQ or MOB_BSHO-REQ message. The message shall be transmitted on the basic CID.