# [Enhanced Handover Mechanism for Supporting Active BS Set]

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Purpose:
Helping the primary concept of Contribution document, “Enhance Handover Mechanism for Supporting Active BS Set”

# Enhanced Handovers using Active BS set

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# Introduction & Outline

- Problem Statements
- Primary Components
  - Handover related MSS-assigned states of neighboring base stations
  - Procedures managing Active BS sets
  - Example Scenarios
- Recommended Changes in the current Standard

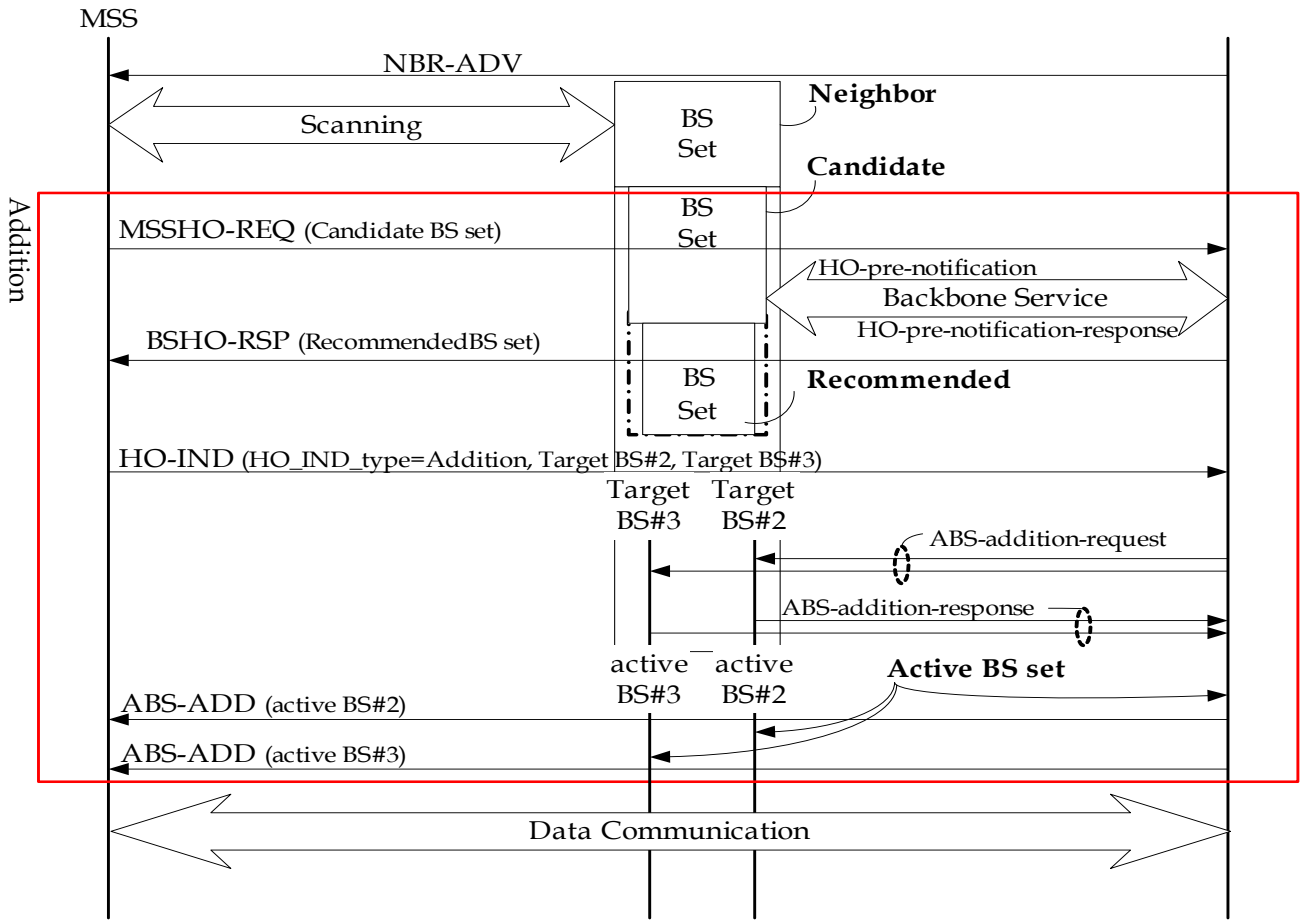
# Problems in the Current Handovers

- Too long handover break-time
  - Too many message exchanges in network re-entry procedure
    - Ranging, (Basic Capability Negotiation), Re-authorization, and Re-registration & Re-establishment of service flows
    - Appendix 1. Initial Entry vs. Network Re-entry Proc.
    - Appendix 2. HO in current 16e
- Incapability of fast cell switching
  - Current HO scheme based on *'break before make'* (BBM) degrades the performance in ping pong handovers
    - Given by the channel response
    - Given by the user mobility

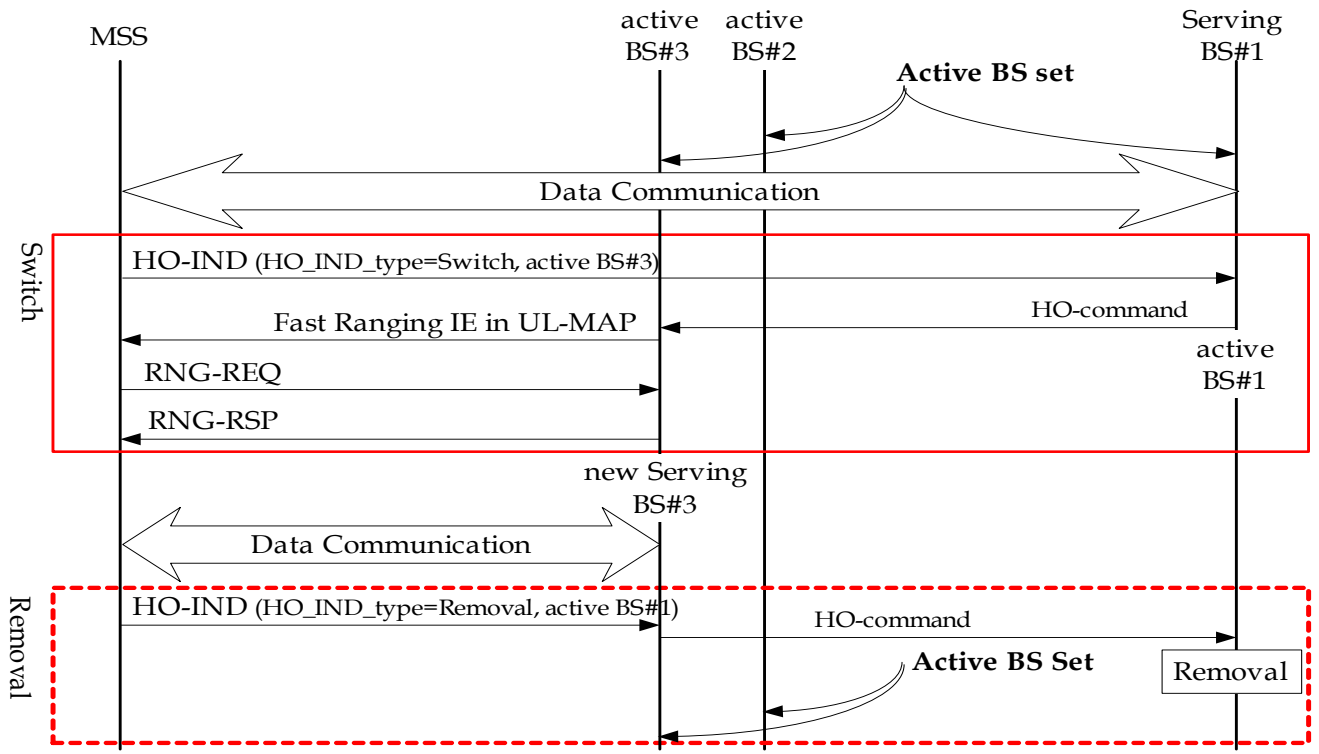
# Defining sets of Neighboring BS

- Neighbor BS
  - Set of BS advertised by the serving BS in NBR_ADV message
- Candidate BS
  - Subset of Neighbor BS set chosen by MSS based on CINR measurement
- Recommended BS
  - Among Candidate BSs, the ones responded with BSHO-RSP at MSSHO-REQ
- Active BS
  - Subset of Recommended BS set selected by MSS with expecting the same or better QoS than that of the current one
  - Set of BSs which has all the session information of MSS
  - Handover Towards Active BS requires only ranging

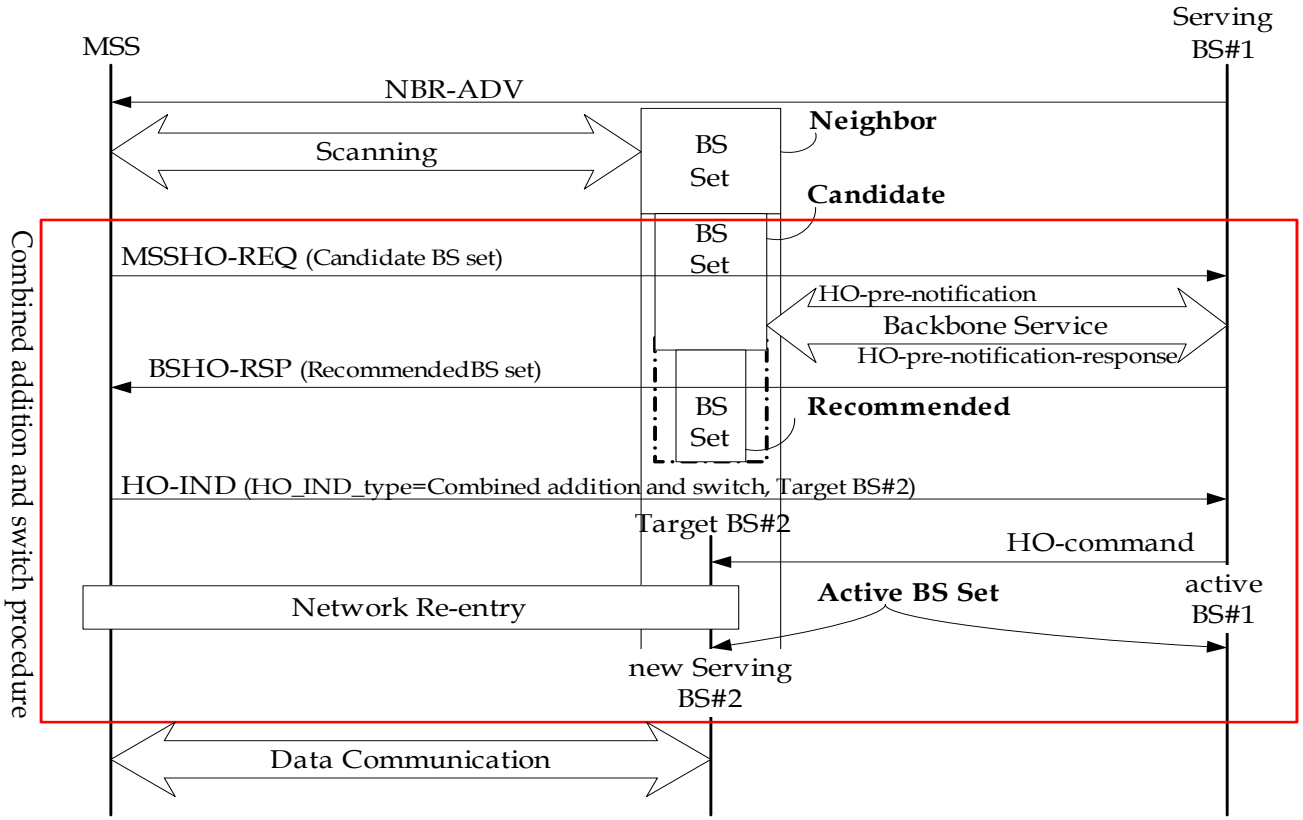
# Scenario I: Adding an Active BS



# Scenario II: Switch & Remove an Active BS



# Scenario III: Combined Addition and Switch

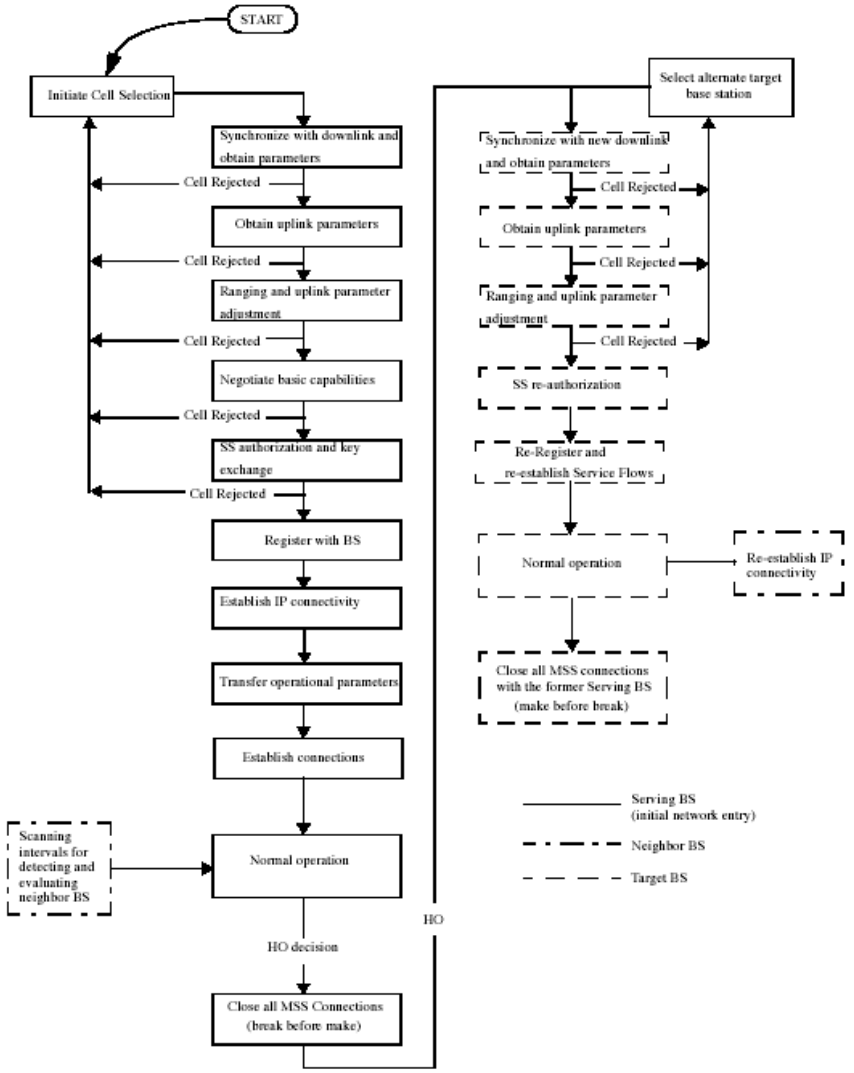


# Changes in the current 16e

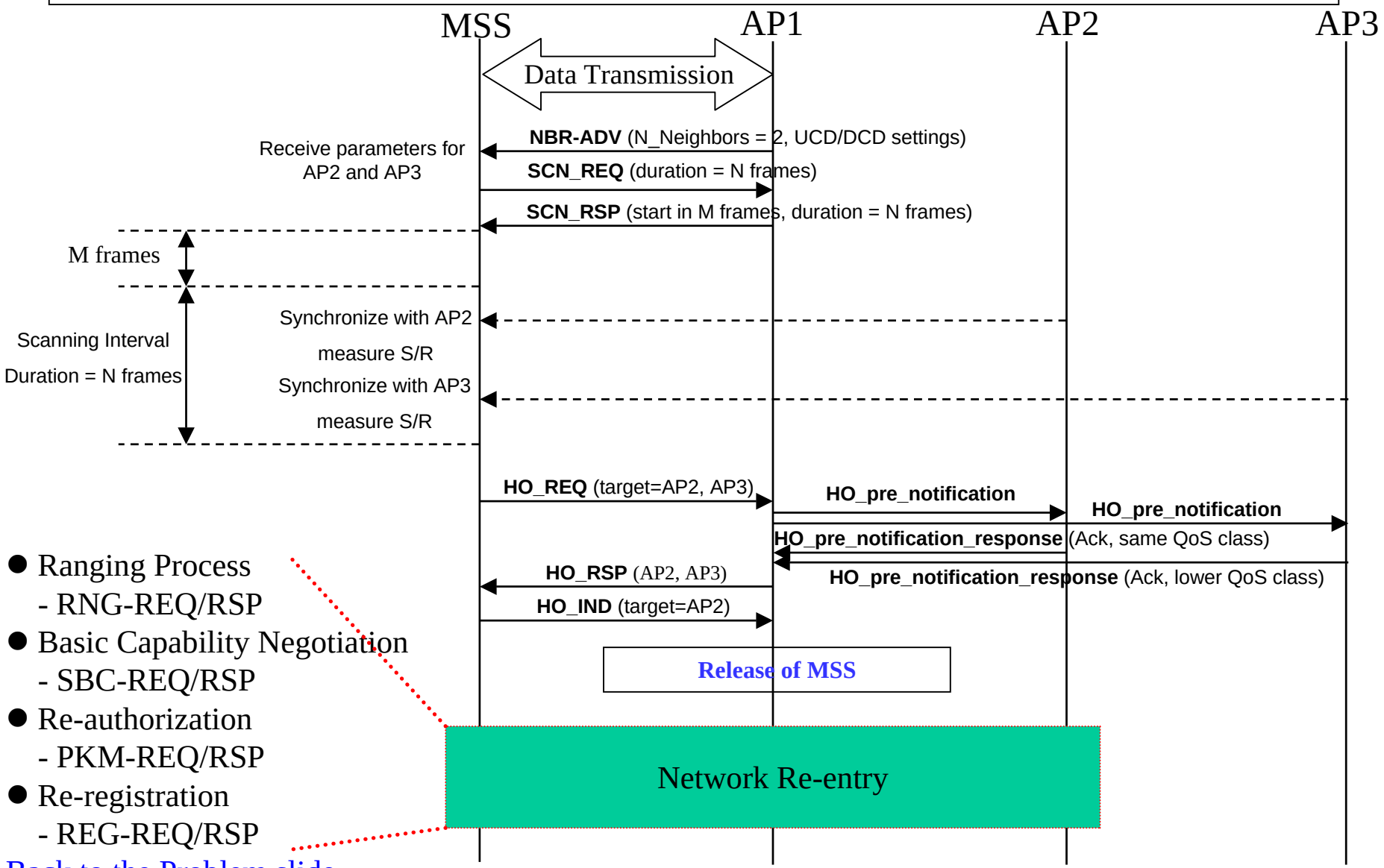
- Recommended Changes in the current 802.16e
  - Refer **C802.16e-04-30.pdf**, Enhanced Handover Mechanism for supporting Active BS Set

# Appendix 1. Network Entry Proc.

- Handover vs. Initial Network Entry Procedure
  - Handover Network Re-entry omits capability negotiation (however, in some cases required) and key exchanges.
  - Re-entry procedure reduces re-registration and re-establishments of service flows in one step.
  - Back to Problems in the Current Handovers slide



# Appendix 2. HO in current 16e




- Ranging Process
  - RNG-REQ/RSP
- Basic Capability Negotiation
  - SBC-REQ/RSP
- Re-authorization
  - PKM-REQ/RSP
- Re-registration
  - REG-REQ/RSP

Back to the Problem slide