

[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”

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Enhanced Handovers using Active BS set

Samsung Electronics Co., Ltd.

March 18, 2004

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

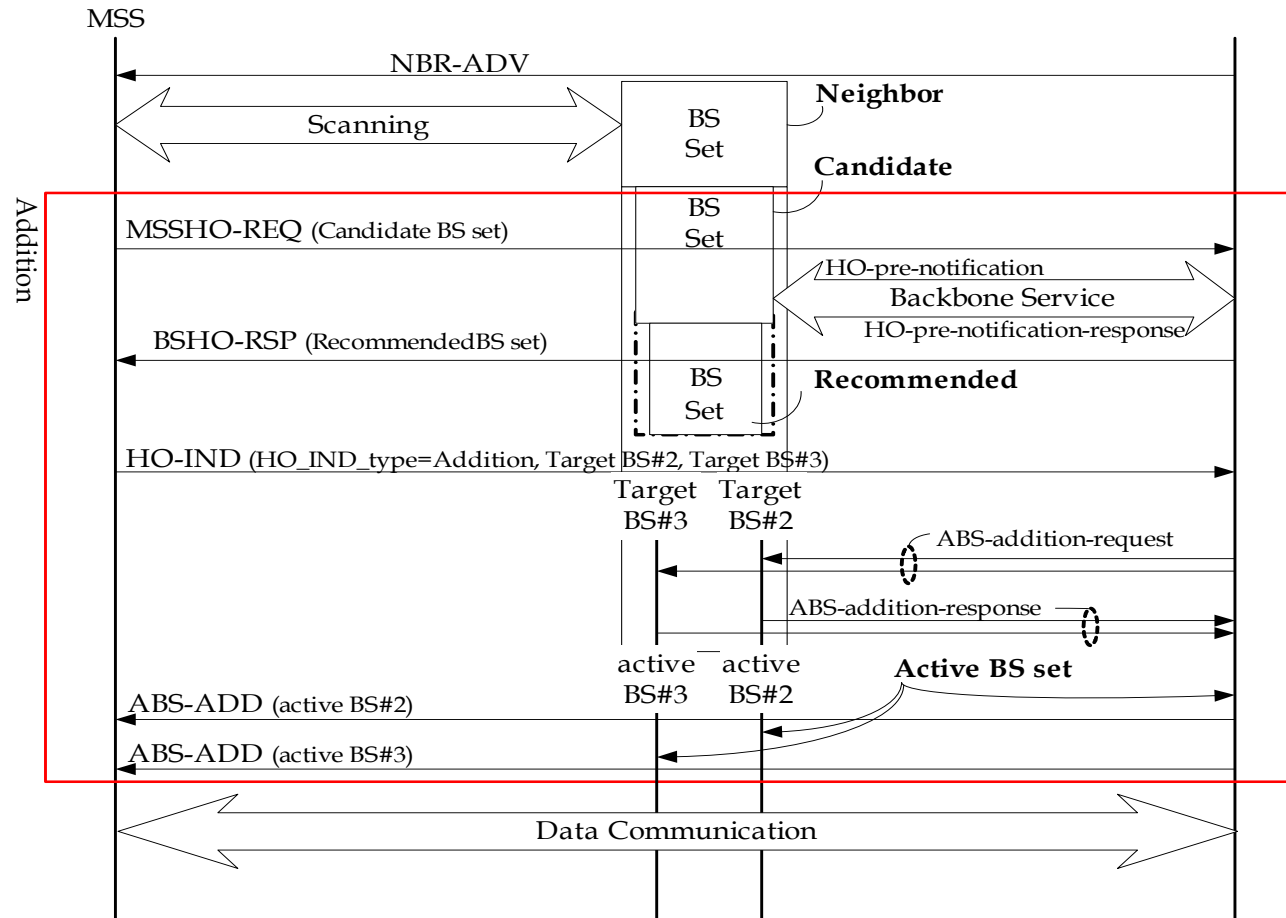
Problems in the Current Handovers

- 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

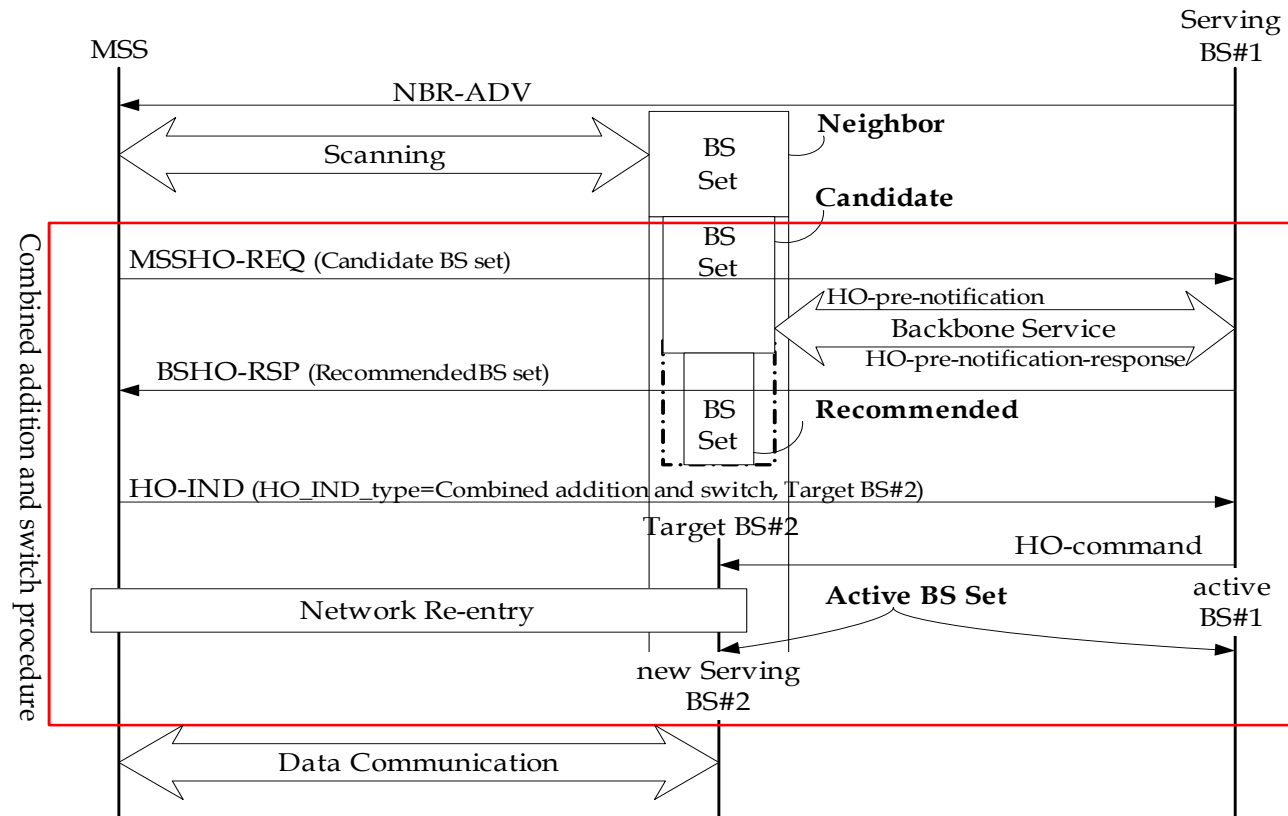
Defining sets of Neighboring BS

- **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 III: Combined Addition and Switch

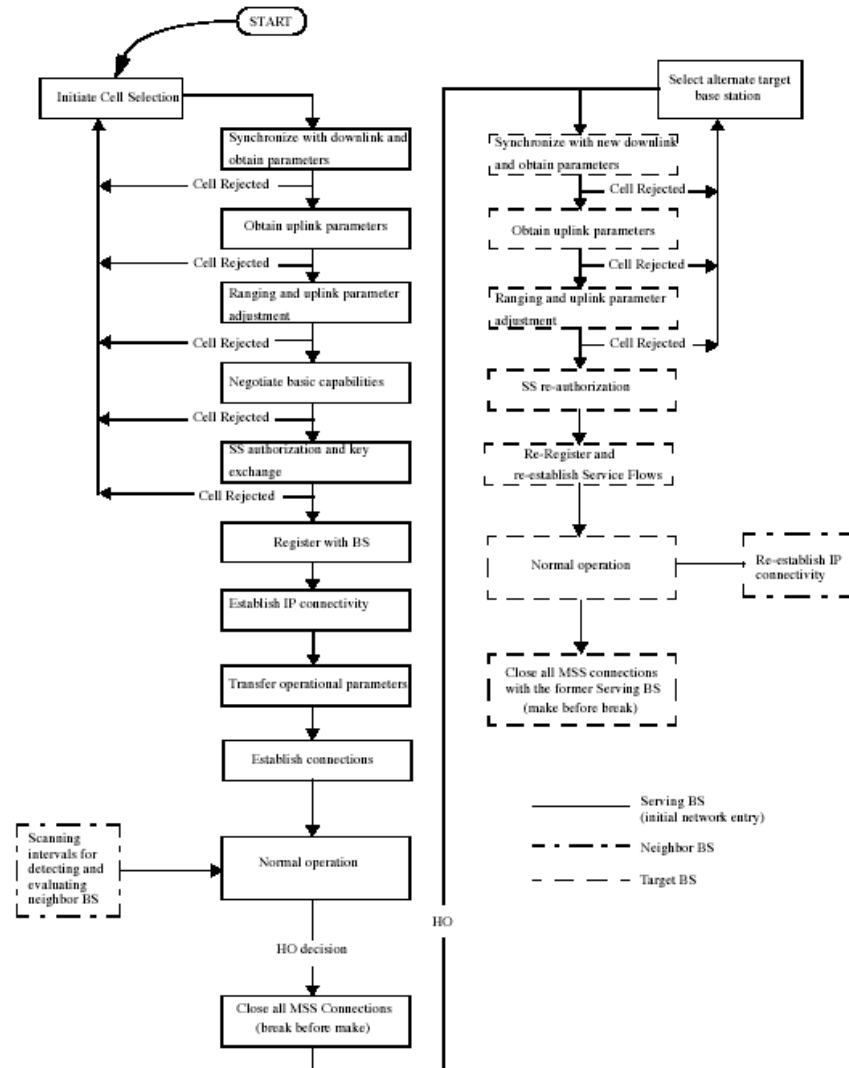


Changes in the current 16e

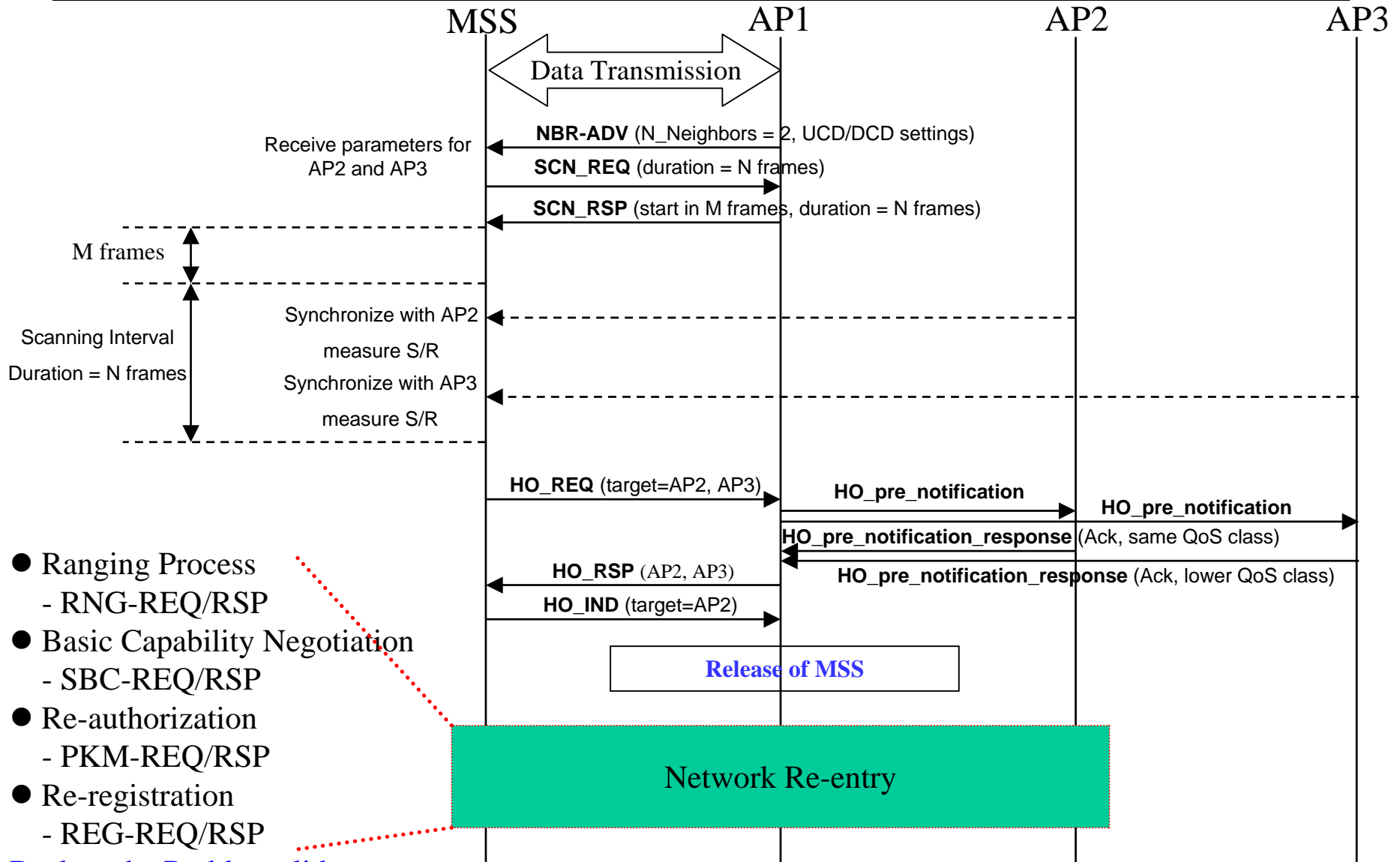
- [Recommended Changes in the current 802.16e](#)
 - Refer [C802.16e-04-30.pdf](#), Enhanced Handover Mechanism for supporting Active BS Set

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](#)