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| Project | IEEE 802.16 Broadband Wireless Access Working Group < http://ieee802.org/16 > | |
| Title | The Improvement of Scanning Method Using Preambles in IEEE 802.16e | |
| Date Submitted | 2004-06-25 | |
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| Re: | IEEE P802.16e/D3 Letter Ballot | |
| Abstract | This document suggests the improvement of scanning method using preambles from BSs. | |
| Purpose | The document is contributed to support certain comment on IEEE P802.16e/D3 Letter Ballot. | |
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The Improvement of Scanning Method Using Preambles in IEEE 802.16e

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1. Problem Statements

In current scanning method, MSS should scan the signals from other BSs during the scanning duration of MOB_SCN_RSP of Serving BS. But it consumes lots of time. Even though MSS receives RNG-RSP message from the target BS after association, it only sends CINR information through the MOB-MSSHO-REQ Message during hand over.

2. Proposed Remedy

Currently, MSS performs synchronization and CINR measurement in scanning mode. As each MSS is able to receive the preambles from target BSs simultaneously, it can finish the synchronization and CINR measurement within a frame. In this process, MSS will decide the number of BSs that will be scanned and select the target BS for association. After that, MSS will receive RNG-RSP message from the target BS and transfer the time adjust information to the serving BS through the MOB-MSSHO-REQ message. The time adjust information will be used in selecting final target BS.

3. Proposed Text Changes

Table 92h—MOB-BSHO-REQ Message Format

| Syntax | size | Notes |
|-----------------------------------|---------|---|
| MOB-MSSHO-REQ_Message_Format() { | | |
| Management Message Type = 53 | 8 bits | |
| For (j=0; j<N_Recommended; j++) { | | N_Recommended can be derived from the known length of the message |
| Neighbor BS-ID | 48 bits | |
| BS CINR mean | 8 bits | |
| BS Timing Adjust | 8 bits | Tx timing offset adjustment (signed 32-bit). The time required to advance SS transmission so frames arrive at the expected time instance at the BS. Units are PHY specific. (using RNG-RSP message of target BS.) |

| | | |
|--------------------------|---------|--|
| Service level prediction | 8 bits | |
| } | | |
| Estimated HO start | 8 bits | The estimated HO time shall be the time for the recommended target BS. |
| HMAC Tuple | 21 bits | See 11.4.11 |
| } | | |

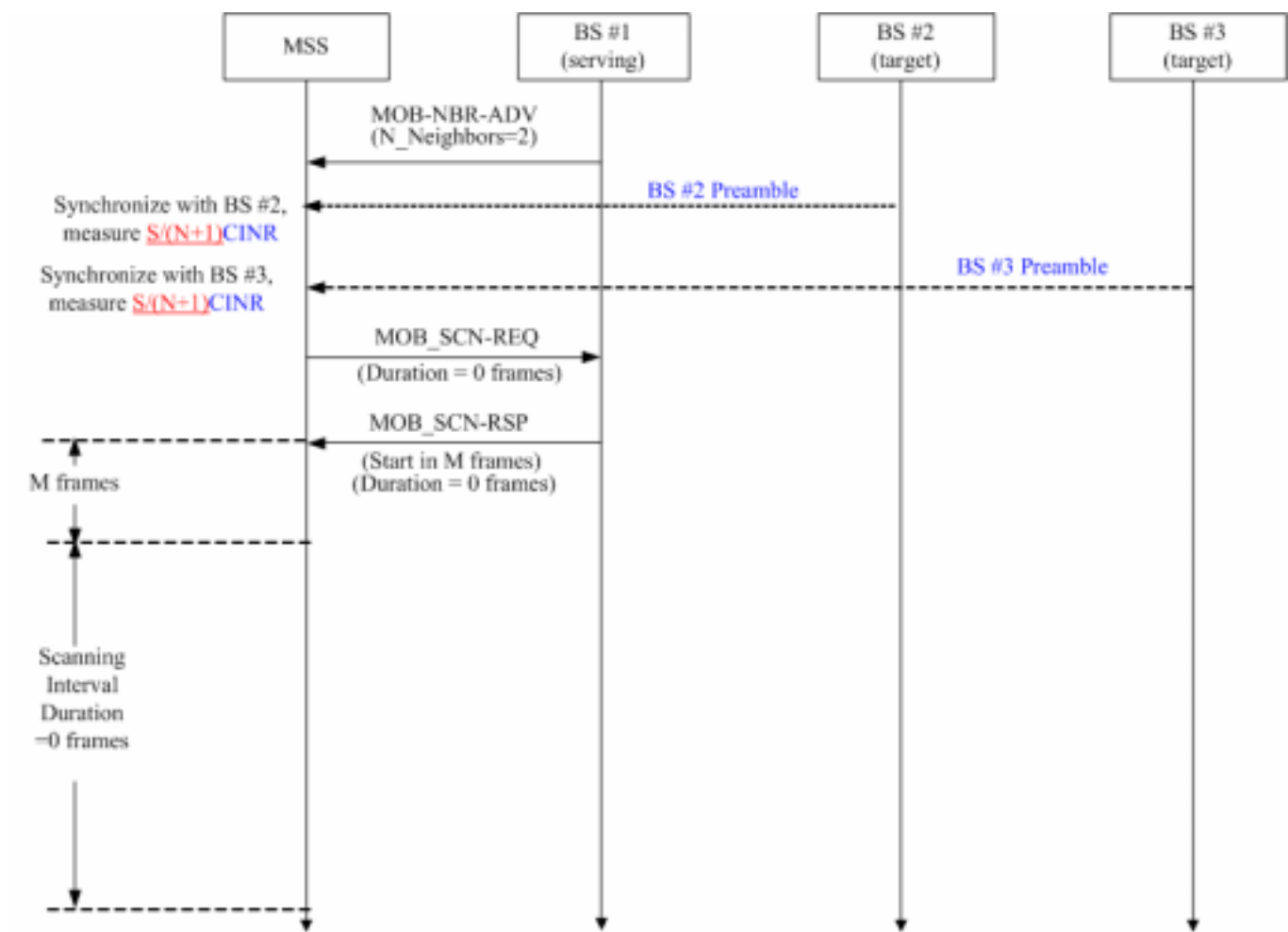


Figure E.1—Example BS advertisement and scanning (without association) by MSS request

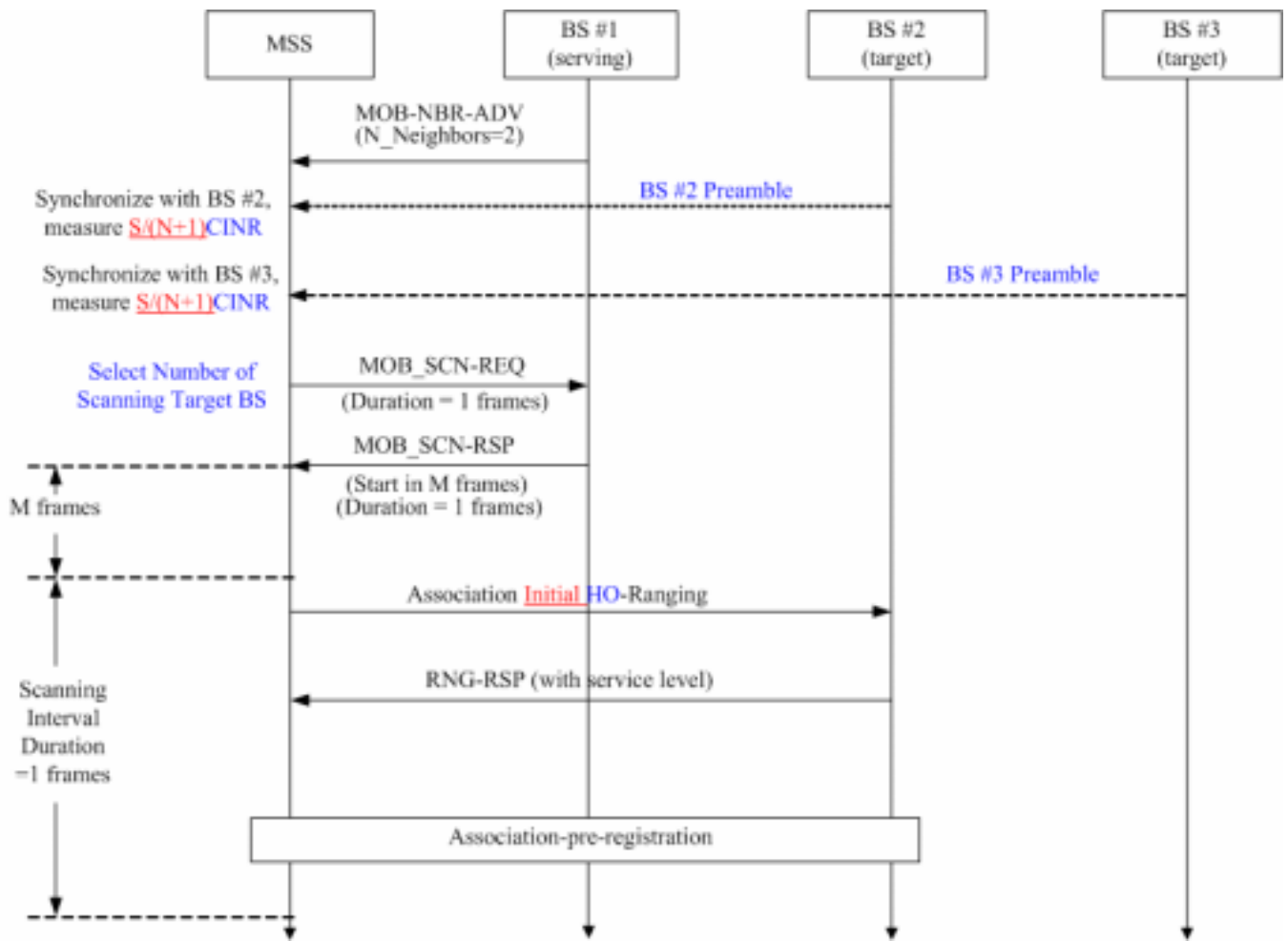


Figure E.2—Example BS advertisement and scanning (with association) by MSS request

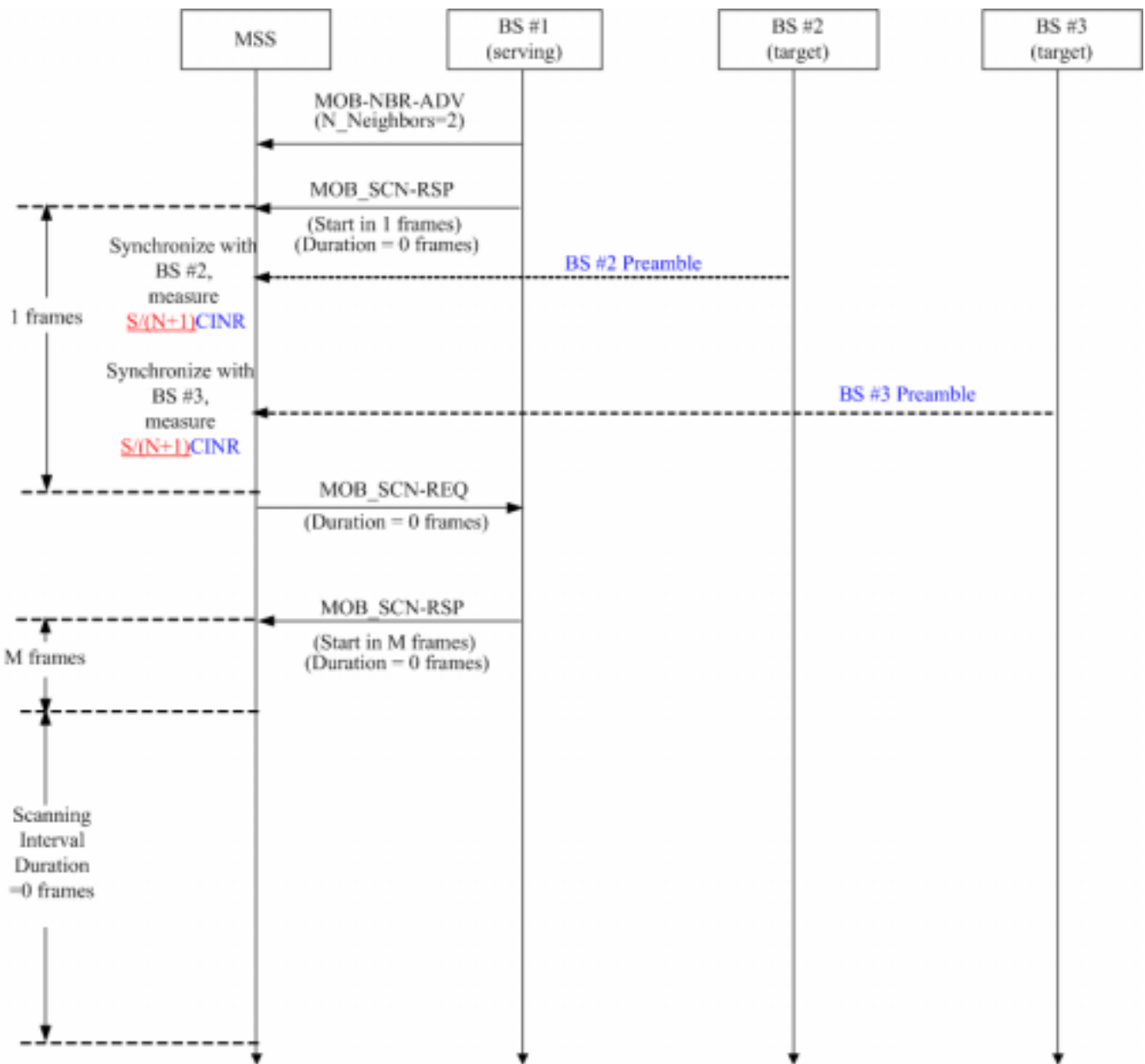


Figure E.3—Example BS advertisement and scanning (without association) by BS request

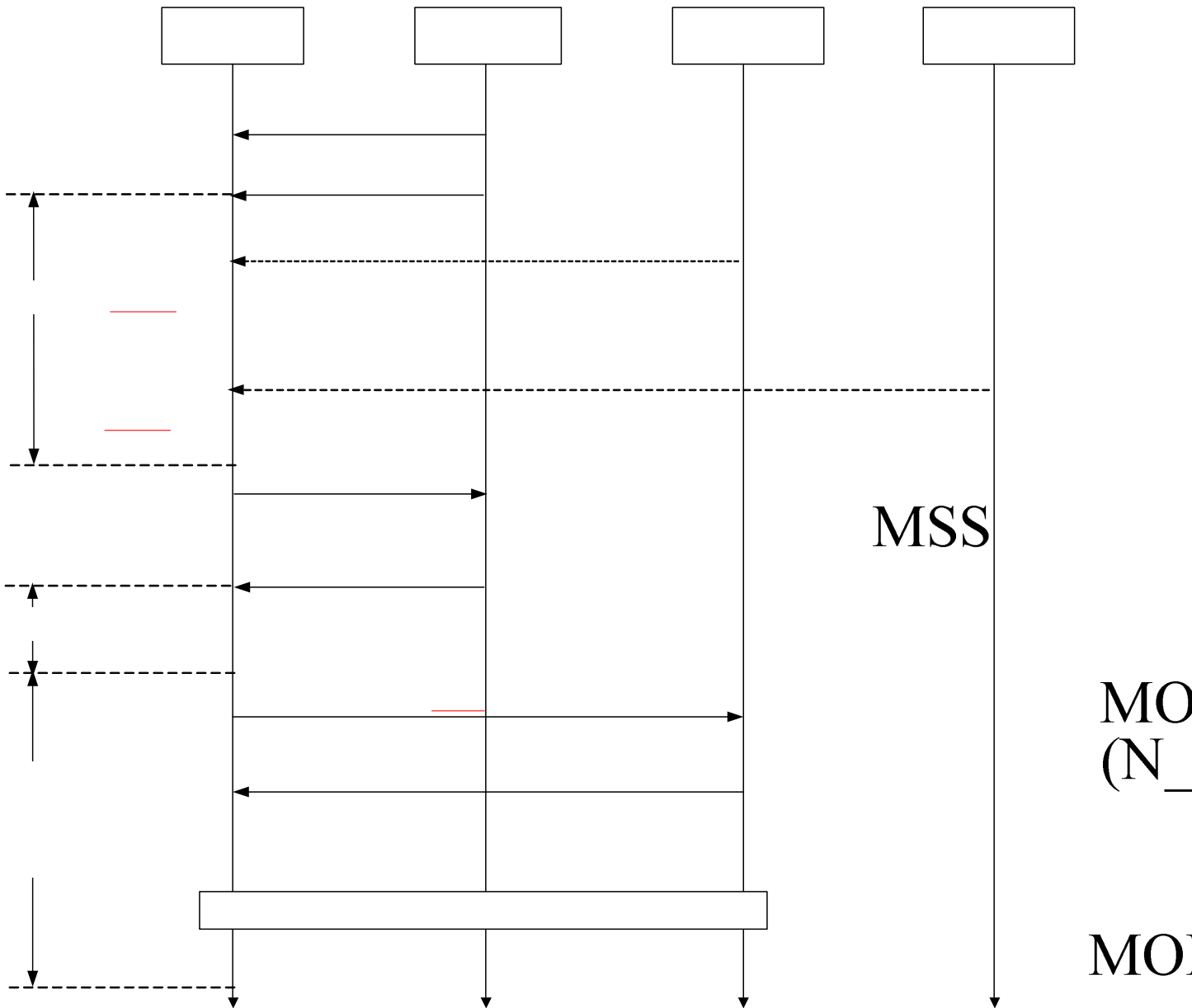


Figure E.4—Example BS advertisement and scanning (with association) by BS request

Synchronize with
 BS #2,
 measure
 1 frames $S/(N+1)CINR$

⁵
 Synchronize with
 BS #3,
 measure