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**
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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.
Notice	
Release	
Patent Policy and Procedures	

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
}		

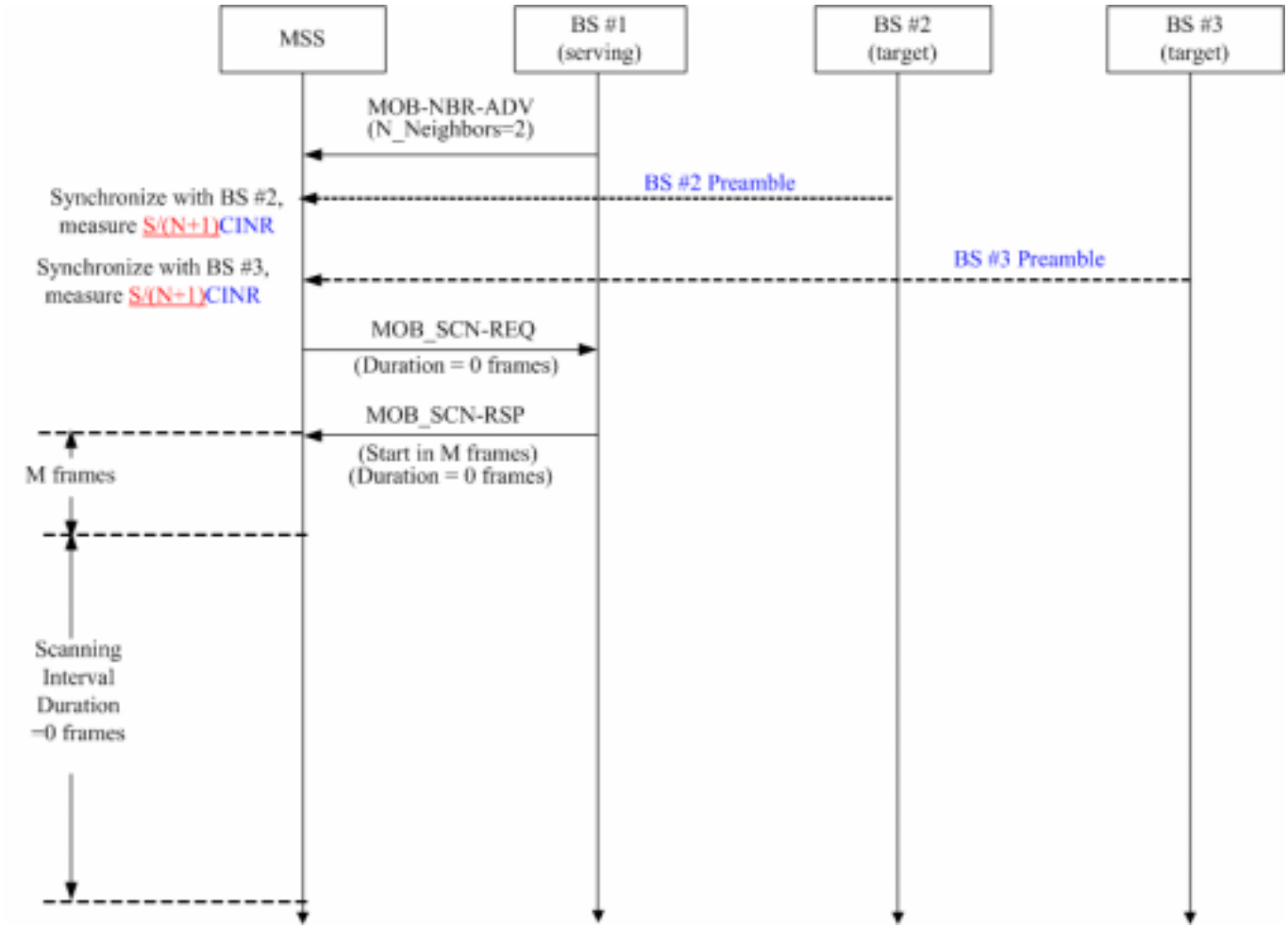

Figure E.1—Example BS advertisement and scanning (without association)by MSS request

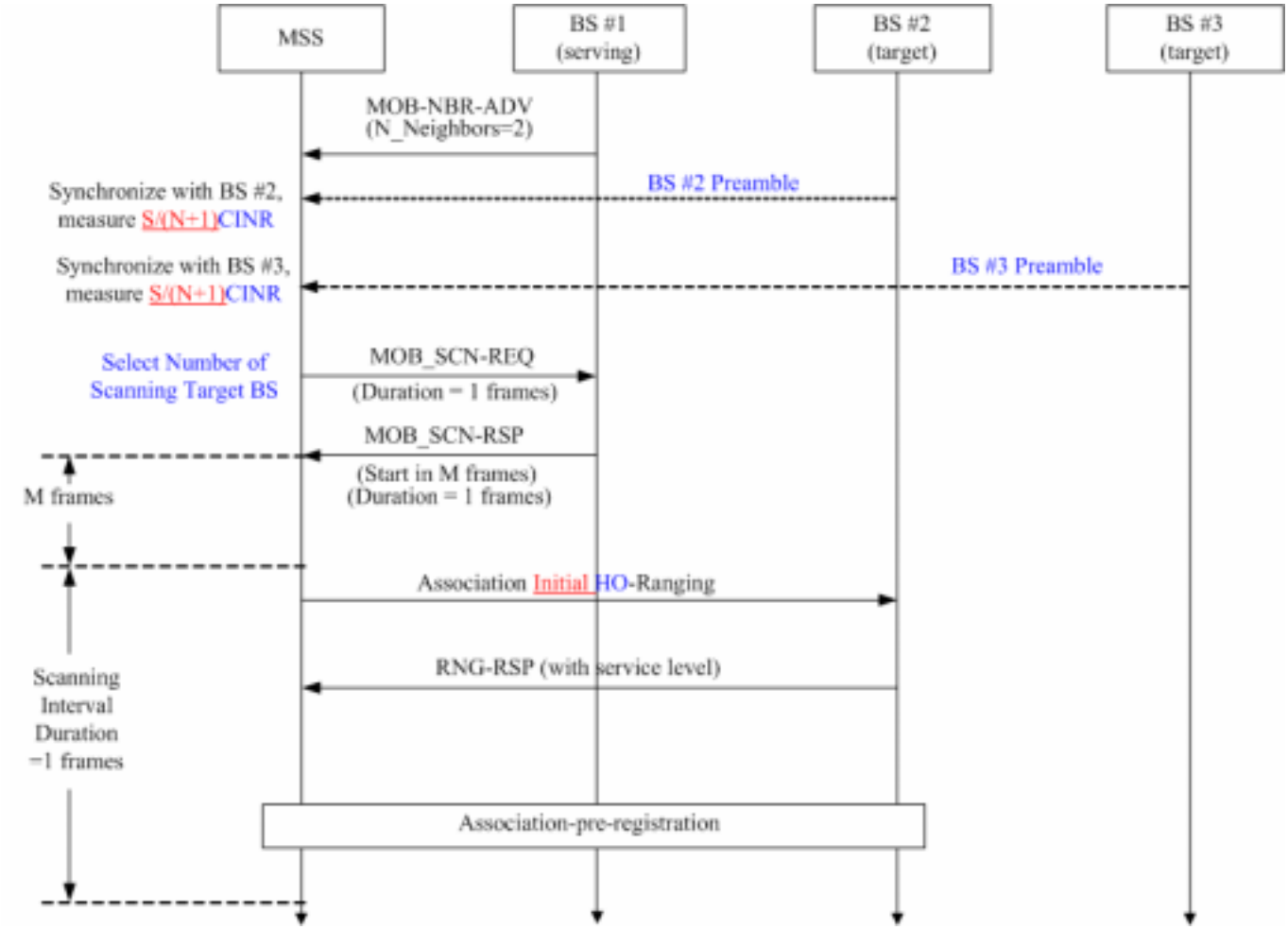

Figure E.2—Example BS advertisement and scanning (with association) by MSS request

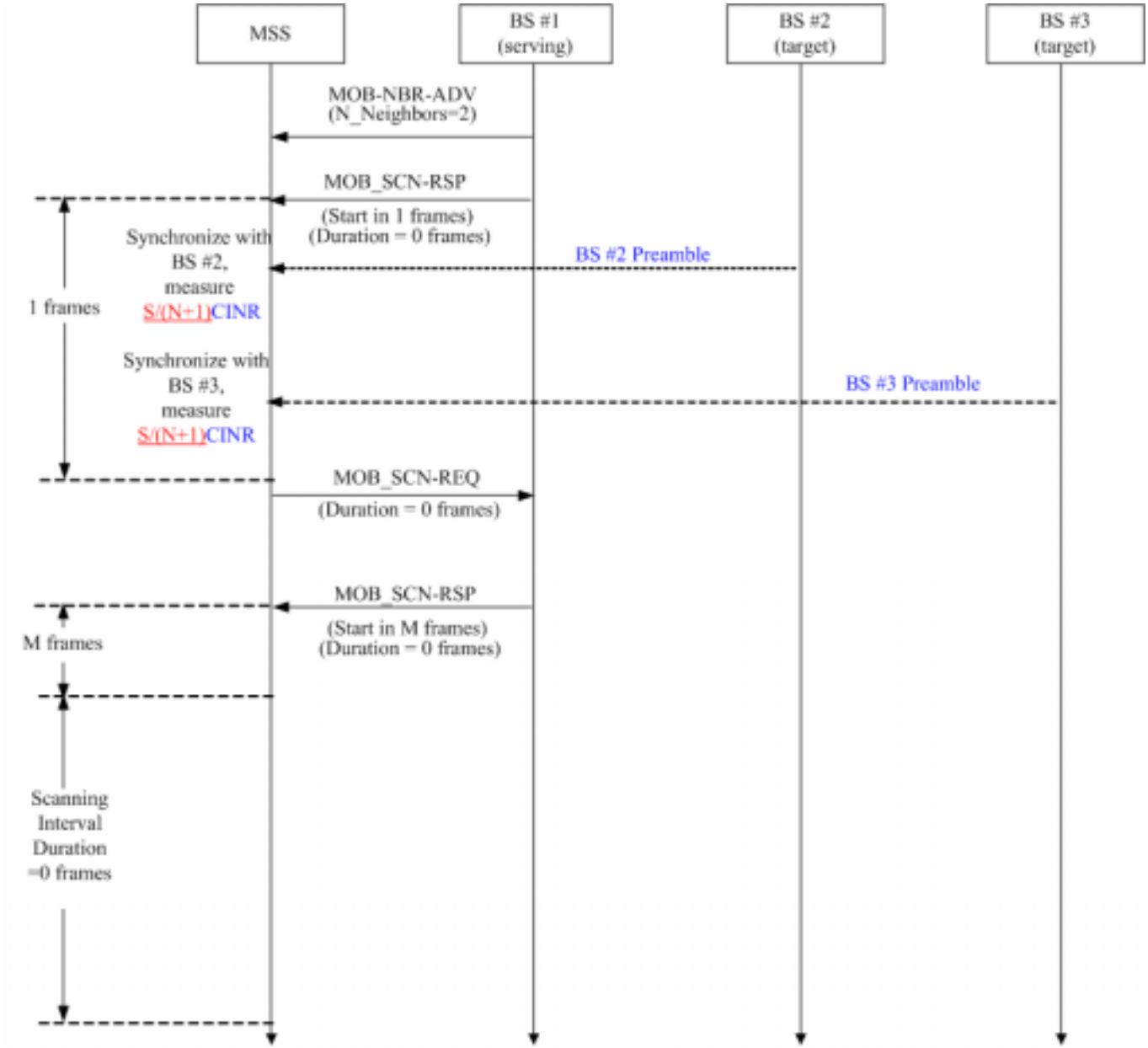

Figure E.3—Example BS advertisement and scanning (without association) by BS request

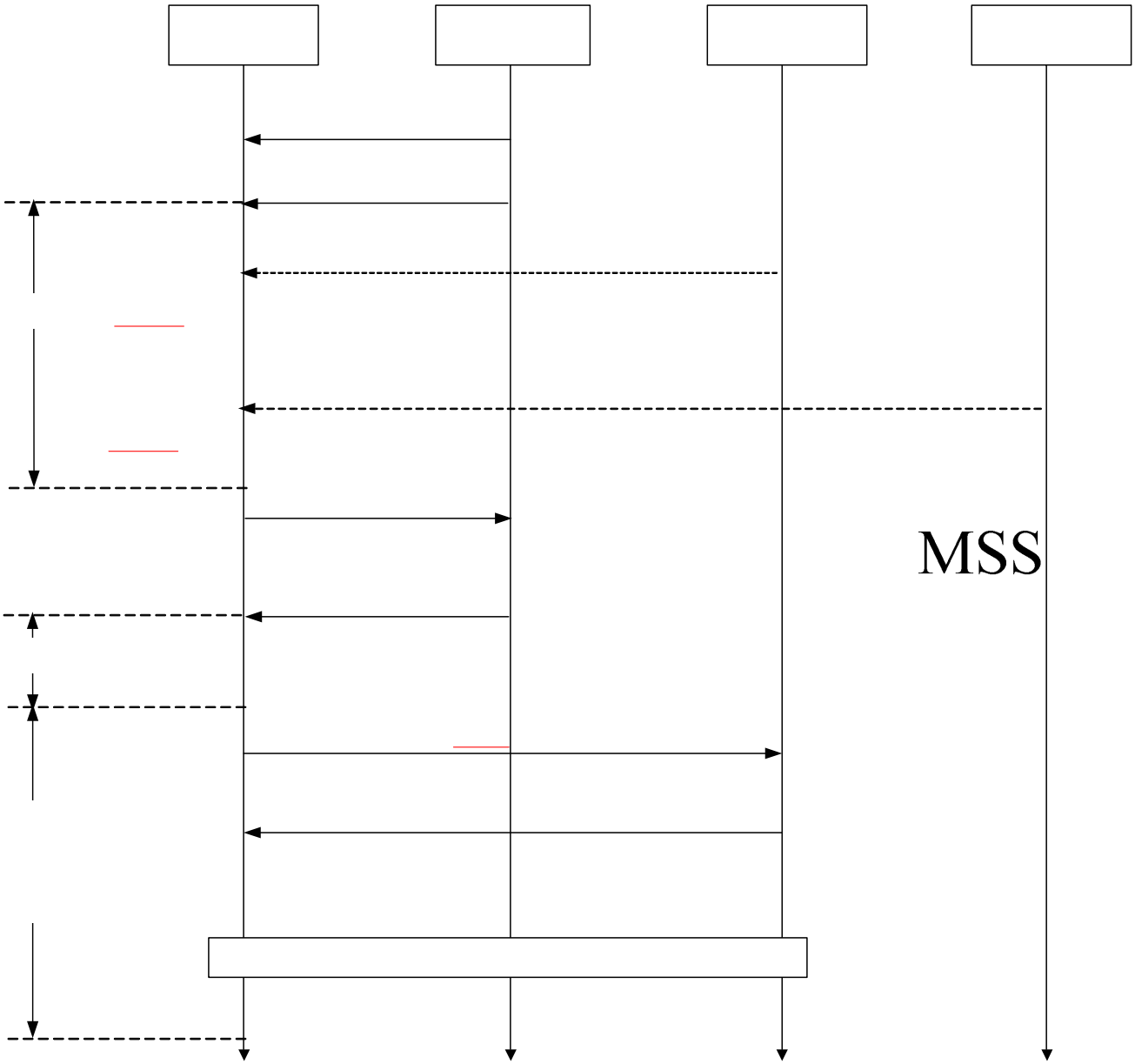

Figure E.4—Example BS advertisement and scanning (with association) by BS request