

Project	IEEE 802.16 Broadband Wireless Access Working Group < http://ieee802.org/16 >	
Title	Fast Network Entry Procedure	
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Re:	MAC: Network Entry; in response to the IEEE 802.16m-08/033, Call for Contributions and Comments on Project 802.16m System Description Document (SDD)”	
Abstract	To propose fast network entry procedure to improve latency.	
Purpose	To propose fast network entry procedure to be adopted to the 802.16m SDD	
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Fast Network Entry Procedure

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Introduction

In the 16e standard, MS basically needs to send bandwidth request to the BS in order to obtain uplink bandwidth to send a MAC management messages. Figure 1 shows the first extract of the 16e network entry procedure.

As shown in the figure 1, bandwidth request/grant process causes significant delay to network entry process. Although the current SDD defines the quick access procedure to shorten latency, latency is not negligible because it still needs 3 steps for every management message.

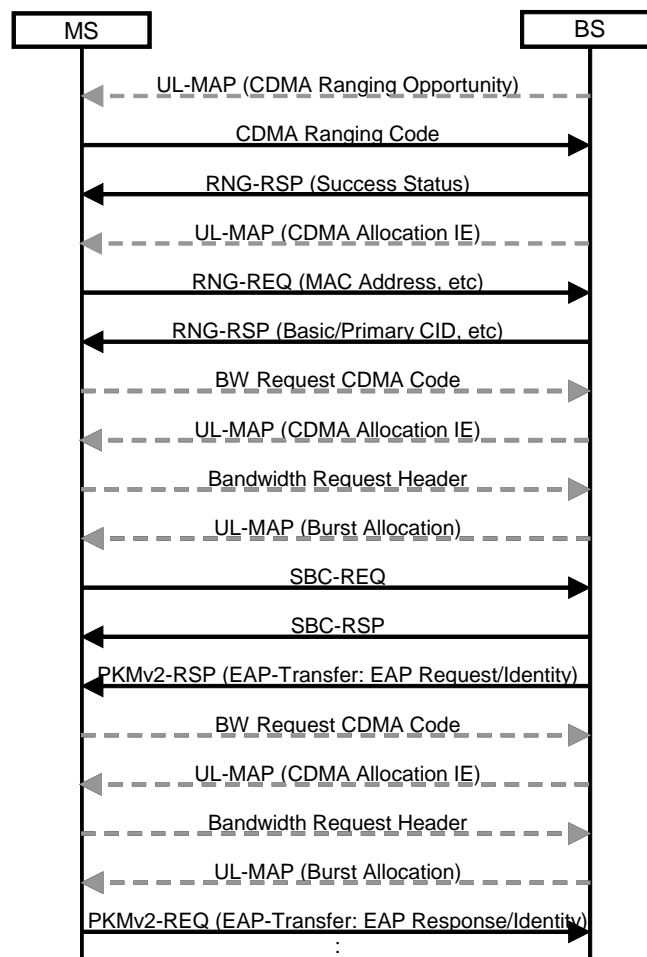


Figure 1 Network Entry Procedure in the 16e standard

Proposed Bandwidth Request Method

In order to solve the above mentioned problem, we propose fast network entry procedure to omit or reduce bandwidth request/grant process.

In the network entry process, when an MS sends a management message to the BS, it does know the next management message size which should be transmitted after receiving a response message. That is, if bandwidth request information of a management message is attached to the previous management message, no separate bandwidth request procedure is required because the BS can allocate the requested bandwidth to the MS after sending the response message.

The figure 2 shows an example of the proposed scheme.

When an MS sends the RNG-REQ message to the BS, it attaches the size of the SBC-REQ which is sent after receiving the RNG-RSP. After sending the RNG-RSP message to the MS, the BS allocates the requested bandwidth so that the MS can send the next message, SBC-REQ, to the BS without delay of another bandwidth request/grant procedure.

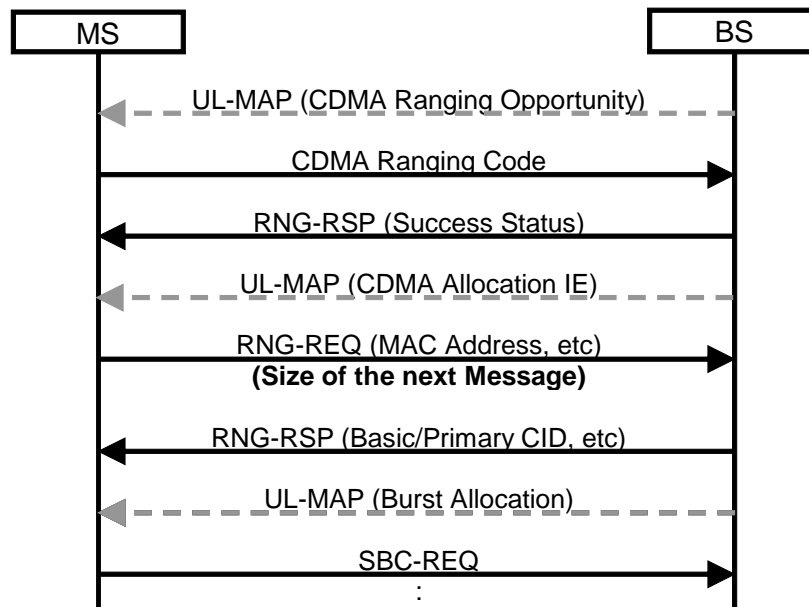


Figure 2 Proposed Network Entry Procedure

Proposed Text to the SDD

[Add the following paragraph to the section 10 (Medium Access Control Sub-layer) as indicated]

10.X Network Entry

10.X.Y Fast Network Entry

To reduce the overall network entry process time, an MAC management message, which is sent from an MS during network entry procedure, shall contain the size of the MAC management message in the next network entry sequence sent from the MS. When the BS receives the MAC management message with the size of the next message, it shall respond to the received message as well as allocate the uplink bandwidth to the MS based on the requested size of the next message.