

Project	IEEE 802.16 Broadband Wireless Access Working Group < http://ieee802.org/16 >	
Title	Comments on second stage access station selection	
Date Submitted	2008-03-18	
Source(s)	Kanchei (Ken) Loa, Yi-Hsueh Tsai, Yung-Ting Lee, Hua-Chiang Yin, Shiann-Tsong Sheu, Youn-Tai Lee	Voice: +886-2-66000100 Fax: +886-2-66061007 loa@iii.org.tw
	Institute for Information Industry 7F, No. 133, Sec. 4, Minsheng E. Rd., Taipei City 105, Taiwan	
Re:	IEEE 802.16-08/007: "IEEE 802.16 Working Group Letter Ballot Recirc #28b: Announcement"	
Abstract	This contribution proposes to modify second stage access station selection	
Purpose	Text proposal for 802.16j Draft Document.	
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Comments on second stage access station selection

Kanchei (Ken) Loa, Yi-Hsueh Tsai, Yung-Ting Lee, Hua-Chiang Yin, Shiann-Tsong Sheu, Youn-Tai Lee
Institute for Information Industry (III)

Introduction

This contribution proposes to optimize the RS network entry by replacing the RS_Access-REQ message with the RNG-RSP message and skip the access station selection phase if there is no change for the access station. In P802.16j/D3, the “RS access selection request (RS_Access-REQ) message” is used by an MR-BS to indicate the access station the RS is supposed to attach to. Since this message is only used for RS network entry, which occurs infrequently, and could be easily replaced by “ranging response (RNG-RSP) message” that has been used for similar purpose during the MS network entry. We proposes to replace the “RS_Access-REQ message” by the “RNG-RSP message with status abort and Preamble Indexes TLV” to indicate the access station the RS shall attach to. If the current access station is changed, the MR-BS shall start T65 timer and send the RNG-RSP message which contains abort status and Preamble Indexes TLV to the RS to indicate the preamble index of a newly selected access station. (Time reference of T65 is “Wait for RNG-REQ message with RS basic CID after sending RNG-RSP message which contains abort status and Preamble Indexes TLV”) The MR-BS and the RS shall perform network re-entry as described in 6.3.9 with the following modifications. Instead of using ranging CID, the RS shall send RNG-REQ message with the assigned RS basic CID to the new access station. The MR-BS may instruct the RS to omit phases by the RS network entry optimization TLV in the RNG-RSP message. (see Figure 1)

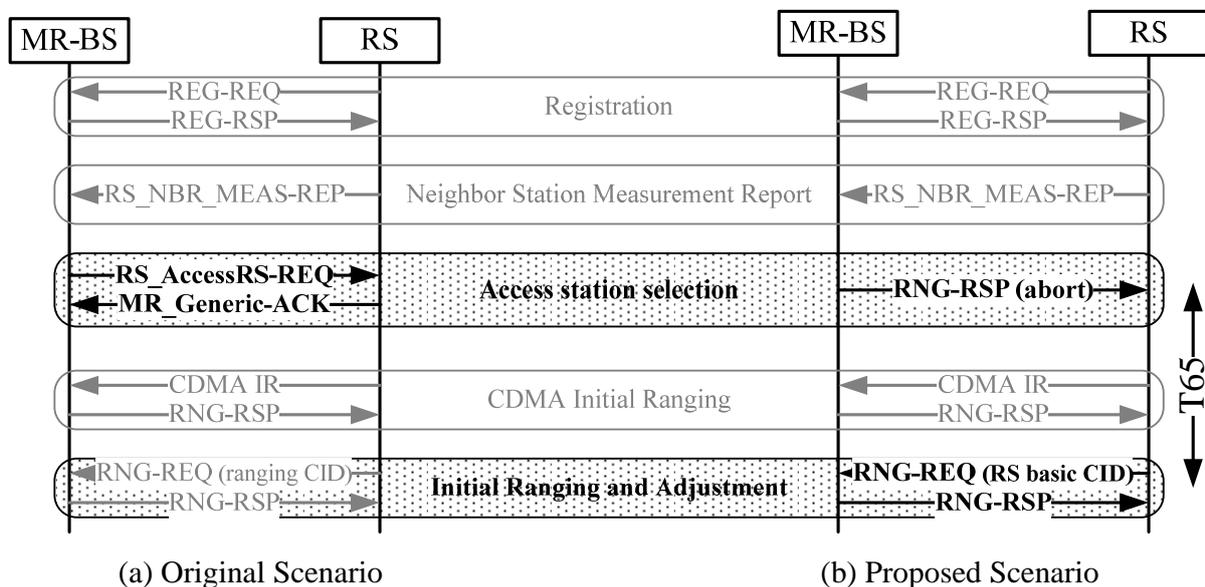


Figure 1 Access Station Changed

In addition, if there is no change for the access station, the MR-BS can send an “RS_Config-CMD message” immediately to signal the ending of the access station selection phase and the starting of the RS operational configuration phase. There is no need to go through RS_Access-REQ/MR_Generic-ACK iterations. (see Figure 2)

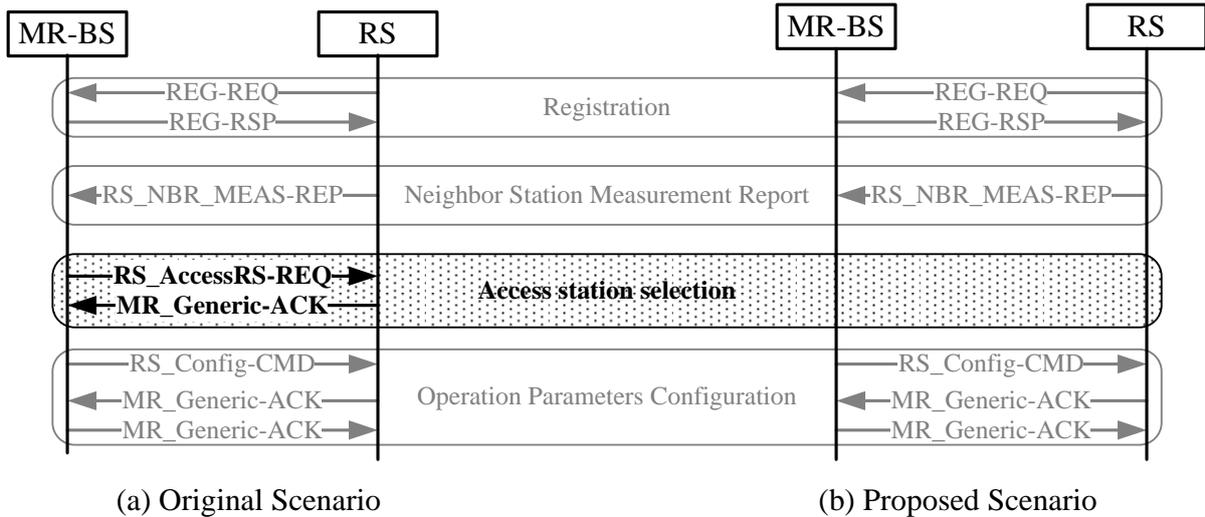


Figure 2 Access Station Unchanged

In order to facilitate the incorporation of this proposal into IEEE 802.16j standard, specific changes to the draft standard P802.16j/D3 are listed below.

Spec changes

[Delete the following subclause in line 1 of page 65 as indicated:]

~~6.3.2.3.81 RS access station selection request (RS_AccessRS-REQ) message~~

6.3.2.3.6 Ranging response (RNG-RSP) message

[Modified the following text in line 35 of page 27 as indicated:]

The following parameter may be included in the RNG-RSP message with abort status during RS initial ranging phase or during access station selection phase for RS ~~neighbor~~-access stations reselection:

Preamble Indexes

8-bit preamble indexes of candidate ~~neighbor~~-access stations

6.3.9.9.2 MR-BS and RS behavior during registration

[Modified the Figure 94b as indicated:]

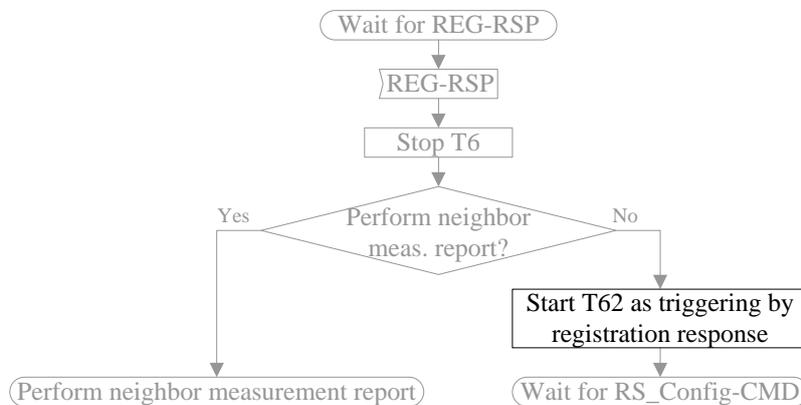


Figure 94a—Handling REG-RSP first reception at an RS

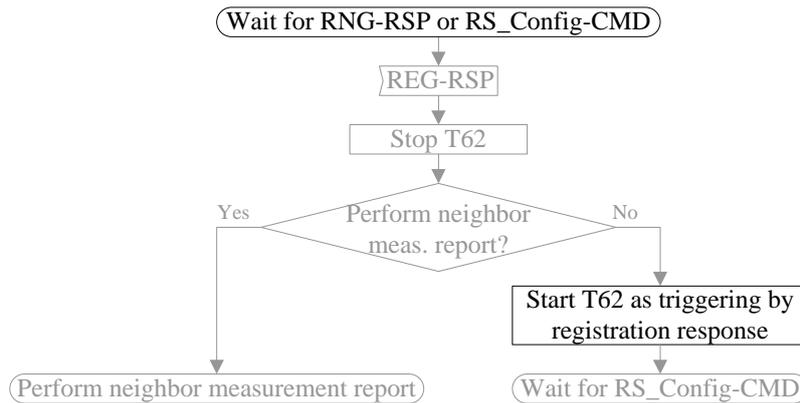
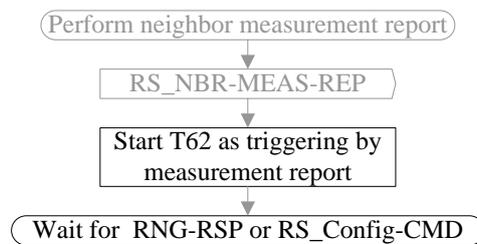


Figure 94b—Handling REG-RSP retransmission at an RS

6.3.9.16 RS neighbor station measurement report

[Replace the following figure in line 1 of page 102 as indicated:]

Figure 102a—~~Handling RCD first reception~~ Perform neighbor measurement report at a RS

[Replace the following figure in line 15 of page 102 as indicated:]

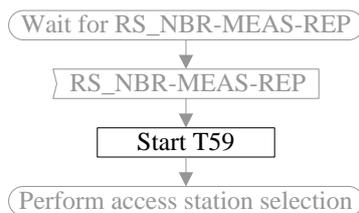


Figure 102b—Handling RS_NBR-MEAS-REP first reception at an MR-BS

6.3.9.17 Second stage access station selection

[Modified the following text in line 30 of page 102 as indicated:]

The second access station selection procedure performed in phase 1) is an optional procedure as indicated by the RS network entry optimization TLV in the RNG-RSP message. This operation, if required, happens after the neighbor station measurement report and before the RS operation parameter configuration. During this operation, the MR-BS shall determine the best path (i.e. access station) for this RS based on the RS's neighbor station measurements and other information such as path loading. If the current access station is changed and is located in the same MR-cell, ~~The MR-BS shall start T65 timer and send the RS_AccessRS-REQ RNG-RSP message which contains abort status and Preamble Indexes TLV to the RS to indicate the preamble index of the a newly selected access station. The RS shall respond with the MR_Generic ACK message. If the access station indicated in the RS_AccessRS-REQ message is not the access station the RS is currently attached to,~~ The MR-

BS and the RS shall perform network re-entry as described in 6.3.9 with the following modifications. Instead of using ranging CID, the RS shall send RNG-REQ message with the assigned RS basic CID to the new access station. Once T65 expires, the MR-BS shall release the resource (such as CIDs) allocated to the corresponding RS.

[Replace the Figure 102c as indicated:]

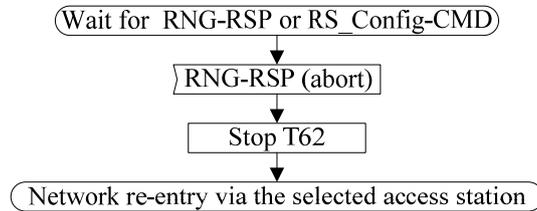


Figure 102c—Handling ~~RS_AccessRS-REQ~~ RNG-RSP first reception at an RS

[Delete the Figure 102d as indicated:]

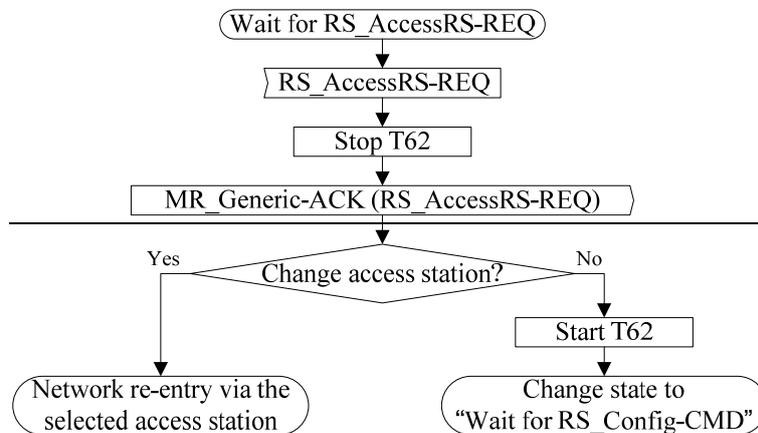


Figure 102d—Handling ~~RS_AccessRS-REQ~~ retransmission at an RS

[Replace the Figure 102e as indicated:]

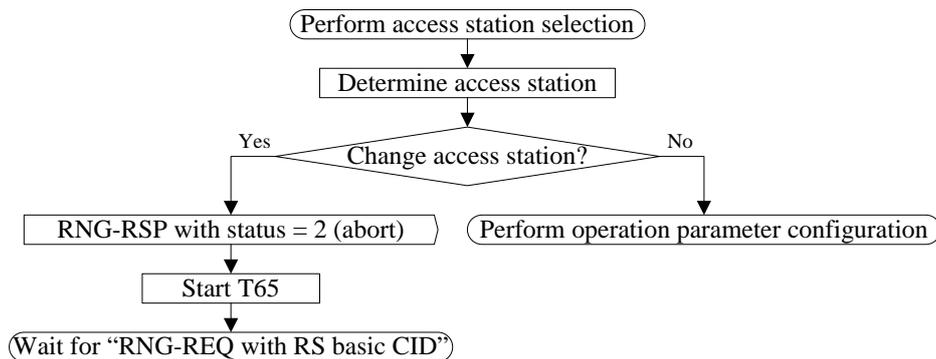


Figure 102e—Perform access station selection at an MR-BS

[Insert the following figure as indicated:]

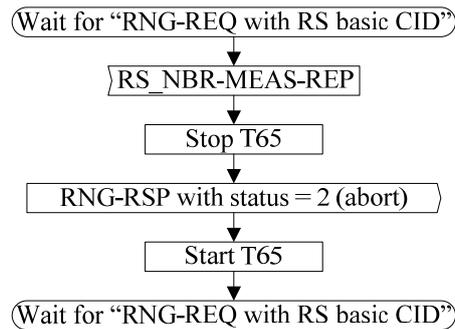


Figure 102e-1—Handling RS_NBR-MEAS-REP retransmission under “Wait for “RNG-REQ with RS basic CID”” at an MR-BS

10.1 Global values

[Modified the following Table 583 as indicated:]

Table 583—Parameters and constants

System	Name	Time reference	Minimum value	Default value	Maximum value
RS	<u>T62 as triggering by measurement report</u>	Wait for RNG-RSP (abort) or RS_Config-CMD after sending RS_NBR-MEAS-REP to MR-BS	TBD	TBD	TBD
<u>RS</u>	<u>T62 as triggering by registration response</u>	<u>Wait for RS_Config-CMD after receiving REG-RSP from MR-BS</u>	<u>TBD</u>	<u>TBD</u>	<u>TBD</u>
<u>MR-BS</u>	<u>T65</u>	<u>Wait for RNG-REQ message with RS basic CID after sending RNG-RSP message which contains abort status and Preamble Indexes TLV</u>	<u>TBD</u>	<u>TBD</u>	<u>TBD</u>