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| Source(s) | Kanchei (Ken) Loa, Yi-Hsueh Tsai, Yung-Ting Lee, Hua-Chiang Yin, Shiann-Tsong Sheu, Youn-Tai Lee     Voice: +886-2-27399616 <br> Fax: +886-2-23782328 <br> loa@iii.org.tw <br><br> Institute for Information Industry <br> 8F, No. 218, Sec. 2, Dunhua S. Rd., <br> Taipei City 106, Taiwan <br><br> [add other co-authors here] |
| Re: | IEEE 802.16j-07/043: "IEEE 802.16 Working Group Working Group Letter Ballot #28" |
| Abstract | This contribution proposes MS ranging and automatic adjustments for the RS group |
| Purpose | Text proposal for 802.16j Draft Document. |
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# Comments on SS ranging and automatic adjustments for the RS group

*Kanchei (Ken) Loa, Yi-Hsueh Tsai, Yung-Ting Lee, Hua-Chiang Yin, Shiann-Tsong Sheu, Youn-Tai Lee*

*Institute for Information Industry (III)*

## Introduction

The accepted contribution (IEEE C802.16j-07/459r6 Comments on SS ranging and network entry in transparent and non-transparent mode) did not include MS ranging and automatic adjustments for the RS group. This contribution proposes remedy for MS ranging and automatic adjustments for the RS group and covers the following comments:

| Comment# | subclauses | Authors | | Type |
|----------|------------|---------|--------|------|
| 673 | 6.3.10.3.4.2.1 | Gamini | Senarath | Technical |
| 683 | 6.3.10.3.4.4.1 | Gamini | Senarath | Technical |

In order to facilitate the incorporation of this proposal into IEEE 802.16j standard, specific changes to the draft standard P802.16j/D1 are listed below.

## Specification Changes

*[Note: The text accepted in the previous meeting (comment #0565: document IEEE C802.16j-07/459r6) are marked in "Gray"]*

*[Delete 6.3.9.16.3.1.1 as following indicated:]*

~~6.3.9.16.3.1.1 MS network entry procedures~~

~~Each RS group member shall monitor the CDMA ranging codes from subordinate nodes. If the group parent is not a member of the RS group, then RS group members shall follow the procedures in 6.3.9.16.1. If the group parent is a member of the RS group, then the RS group members other than the parent shall follow the procedure in 6.3.9.16.1, and the parent (if not MR-BS) shall follow the procedures in 6.3.9.16.2.~~

6.3.10.3.1.1 MR-BS and RS behavior during contention-based initial ranging

*[Modified the following paragraphs as indicated:]*

When an SS performs initial ranging in systems with transparent RSs, MR-BSs, <u>non-transparent RSs w/unique BSIDs</u> and transparent RSs shall perform the following tasks:

— The RS shall monitor the Ranging Channel specified in the UL-MAP broadcasted by the <u>superordinate access station</u> (MR-BS <u>or non-transparent RS w/unique BSID),</u> for initial ranging codes. When the RS detects one or more codes in a frame received on the access link, it shall send the codes it receives with sufficient strength and their adjustment information (e.g. time, power, frequency corrections) in an MR_Code-REP message on the RS basic CID to the serving ~~MR-BS~~ <u>superordinate access station</u>.

— When an ~~MR-BS~~ <u>superordinate access station</u> first receives a CDMA ranging code directly or via an MR_Code-REP message, it shall set the T48 timer and wait for other MR_Code-REP messages to arrive with the same ranging code attributes from other subordinate RSs. Once the T48 timer expires, the ~~MR-BS~~ <u>superordinate access station</u> shall determine the most appropriate path (direct or via an RS) on which to communicate with the SS that originated the code. Algorithms or policies to select the path are out of scope of this document.

— If adjustments are required, the MR-BS shall transmit the RNG-RSP to the SS and the process shall repeat. When the ranging code requires no further adjustment, the MR-BS shall provide an allocation in the

access uplink for the SS to forward a RNG-REQ with its MAC address by inserting a CDMA_Allocation_IE in the UL-MAP. If management messages are relayed on the uplink, the MR-BS shall precede the CDMA_Allocation_IE with an UL_Burst_Receive_IE containing the access RS's basic CID <u>or multicast management CID</u>. A transparent RS, whose CID matches the RS basic CID of the UL_Burst_Receive_IE, shall receive the RNG-REQ on a burst specified by the CDMA_Allocation_IE and relay it to the MR-BS on the RS basic CID.

— <u>No matter the adjustments are required or not, the non-transparent RS with unique BSID shall take the same processes for the selected ranging code attributes as it receives the CDMA ranging code directly.</u>

*[Insert the following paragraphs as indicated:]*

<u>When an SS performs initial ranging in systems with non-transparent RSs using shared BSIDs with other access stations, MR-BSs and non-transparent RSs shall perform the same steps as transparent RSs with the following modifications:</u>

— <u>Instead of transmitting the RNG-RSP to the SS directly, the MR-BS shall transmit the RNG-RSP to a non-transparent RSs with RS basic CID, and then RS shall relay the received RNG-RSP to MS with ranging CID.</u>

When an SS performs initial ranging in systems using non-transparent RSs with unique BSIDs and centralized scheduling, MR-BSs and non-transparent RSs shall perform the following tasks:

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