|  |  |  |
| --- | --- | --- |
| Project | **IEEE 802.16 Broadband Wireless Access Working Group <**<http://ieee802.org/16>**>** | |
| Title | **Proposed Modifications to DC Link Creation for BS-Controlled DC in IEEE 802.16n** | |
| Date Submitted | **2012-09-13** | |
| Source(s) | Wooram Shin, Eunkyung Kim,  Anseok Lee, Jaesun Cha, Kwanjae Lim ETRI | Voice: +82-42-860-6687 E-mail: [w.shin@etri.re.kr](mailto:w.shin@etri.re.kr) |
| Re: | In response to Sponsor Ballot sb010a on P802.16n/D5 | |
| Abstract | This contribution proposes modification to link creation in IEEE 802.16n. | |
| Purpose | To discuss and adopt the proposed texts in the IEEE 802.16n Draft Standard. | |
| Notice | *This document does not represent the agreed views of the IEEE 802.16 Working Group or any of its subgroups*. It represents only the views of the participants listed in the “Source(s)” field above. It is offered as a basis for discussion. It is not binding on the contributor(s), who reserve(s) the right to add, amend or withdraw material contained herein. | |
| Copyright Policy | The contributor is familiar with the IEEE-SA Copyright Policy <http://standards.ieee.org/IPR/copyrightpolicy.html>. | |
| Patent Policy | The contributor is familiar with the IEEE-SA Patent Policy and Procedures:  <<http://standards.ieee.org/guides/bylaws/sect6-7.html#6>> and <<http://standards.ieee.org/guides/opman/sect6.html#6.3>>.  Further information is located at <<http://standards.ieee.org/board/pat/pat-material.html>> and <<http://standards.ieee.org/board/pat>>. | |

Proposed Modifications to DC Link Creation for BS-Controlled DC in IEEE 802.16n

Wooram Shin, Eunkyung Kim, Anseok Lee, Jaesun Cha, Kwangjae Lim

ETRI

# Introduction

In the current draft standard [1], when DC link is created, HR-BS sends AAI-DC-LC-REQ messages to both source and destination HR-MSs, which include two CIDs for transmitting and receiving as identification of DC link. If an HR-BS needs to request creation of multiple DC links with different HR-MSs to an HR-MS, then there is no way how to distinguish each link. Therefore, we suggest how to distinguish DC link when its creation is requested. Also, an HR-BS needs to send multiple AAI-DC-LC-REQ messages even though it wants to create multiple DC links for an HR-MS with different HR-MSs. It is not efficient, so support of multiple DC link creations is suggested. Similarly, in case of messaging AAI-DC-LC-RSP, it needs to support sending multiple responses on multiple DC link creation requests in an AAI-DC-LC-RSP message.

# References

[1] IEEE P802.16n/D5, Air Interface for Broadband Wireless Access Systems - Draft Amendment: Higher Reliability Networks, Aug. 2012.

[2] IEEE Std 802.16-2012, IEEE Standard for Air Interface for Broadband Wireless Access Systems, Aug. 2012.

# Proposed Texts on the IEEE 802.16.1a Amendment Draft Standard

The proposed texts are written in three different types of fonts according to each change purpose as follows.

The same texts in the current draft: black

The texts to be deleted by this contribution: ~~red strikeout~~

The texts to be added by this contribution: blue underline

[-----------------------------------------------------Start of Text Proposal------------------------------------------------------]

*[Remedy #1: Modify the current texts in Section 6.3.2.3.99.10 on Page 22 in the IEEE P802.16n/D5 Draft Standard as follows.]*

**6.3.2.3.99.10 DC-LC-REQ message**

A DC-LC-REQ message is transmitted by an HR-BS to allocate a CID for the direct communication link between two HR-MSs during creating direct communication link between those two HR-MSs~~,~~.

**Table 229j – DC-LC-REQ message format**

|  |  |  |
| --- | --- | --- |
| **Syntax** | **Size**  **(bits)** | **Notes** |
| DC-LC-REQ\_Message\_Format () { |  |  |
| Management Message Type = 119 | 8 | - |
| N-DC-Link | 2 | The number of DC links |
| For (*i* =0; *i* <N-DC-Link; *i* ++) { |  |  |
| CID | 16 | Indicates which DC link needs to be created, which is corresponding to the flow of this CID |
| CID assigned for transmitting | 16 |  |
| CID assigned for receiving | 16 |  |
| } |  |  |
| *Reserved* | 6 |  |
| } |  |  |

**CID**

A CID is used to indicate which DC link creation is requested, which is corresponding to the flow of the CID.

**CID assigned for transmitting**

The CID is used by the HR-MS for transmitting. The peer HR-MS of the DC-link shall receive on the resource specified by this CID.

**CID assigned for receiving**

The HR-MS shall receive on the resource specified by this CID since it is assigned to the peer HR-MS on the DC-Link for transmission.

*[Remedy #2: Modify the current texts in Section 6.3.2.3.99.10 on Page 23 in the IEEE P802.16n/D5 Draft Standard as follows.]*

**6.2.3.65.15 AAI-DC-LC-RSP**

The HR-MSs shall send back a response once they receive the direct communication link creation request.

**Table 106p – AAI-DC-LC-RSP message field description**

|  |  |  |
| --- | --- | --- |
| **Syntax** | **Size**  **(bits)** | **Notes** |
| DC-LC-RSP\_Message\_Format () { |  |  |
| Management Message Type = 120 | 8 | - |
| N-DC-Link | 2 | The number of DC links |
| For (*i*=0; *i* <N-DC-Link; *i* ++) { |  |  |
| CID assigned to DC link | 16 | CID assigned for transmission |
| Confirmation Code | 1 | 0b0: accept  0b1: reject |
| Reserved | 7 |  |
| } |  |  |
| *Reserved* | 6 |  |
| } |  |  |

[------------------------------------------------------End of Text Proposal------------------------------------------------------]