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Re:	IEEE 802.16-08/019 IEEE 802.16 Working Group Letter Ballot Recirc #29b: Announcement (2008-04-07)	
Abstract	In response to comments addressing the existence of the IP transmission in the 802.16h Draft P802.16h/D4, a number of changes are proposed to enforce the primitives approach. This contribution defines the primitives related to the neighborhood update procedure.	
Purpose	Accept.	
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Primitives Related to the Neighborhood Update Procedure

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Introduction

In response to comments addressing the existence of the IP transmission in the 802.16h Draft P802.16h/D4, a number of changes are proposed to enforce the primitives approach. This contribution defines the primitives related to the neighborhood update procedure, including the Leaving Neighborhood Indication/Response primitive, Add Coexistence Neighbor Request/Response primitive, and Delete Coexistence Neighbor Request/Response primitive.

Proposed changes

15.6.1.5 Leaving Neighborhood Indication ~~message~~(M-CX-LV-NBR-IND)

Function:

This primitive ~~message~~ is sent by the BS to the BSIS and/or its neighbor BSs in order to announce that it is leaving the neighborhood.

Semantics:

The parameters of the primitive are as follows:

M-CX-LV-NBR-IND

(

Destination: BSIS or BS

Attribute_List:

BSID

CX Proxy IP address

)

Attributes are shown in *Leaving*.

Table h24—Leaving Neighborhood Indication primitive ~~message~~ attributes

Attribute	Contents
BSID	The BSID of the requesting BS.
CX Proxy IP address	Either one of CX Proxy IP address IPv4 or IPv6

When generated:

This primitive can be generated at the BS to announce to its neighbor BSs that it is leaving the neighborhood.

Effect of Receipt:

Upon receiving this primitive, the neighbor BS should response with M-CX-LV-NBR-RSP primitive.

~~Protocol:~~

~~I. When a new system enters the scene it listens to determine its neighbors. If it successfully hears one or more BSD or SSURF messages (or BS_NURBC in CSI), it creates a compilation of what is necessary for further coexistence mechanism between the new neighbor and itself and send to the new neighbor, and the necessary updating information, if any, will be sent to each of it's neighbors in an Identify Coexistence Request message over the backhaul. Each neighbor responds with an Identify Coexistence Reply message containing their necessary information (which may be more complete than the new BS got over the air) and information on all of their neighbors whether they are neighbors of the new BS or not.~~

~~II. After the neighbors respond with the Identify Coexistence Reply message, they then send the information about the new BS to each of their neighbors using the Add Coexistence Neighbor Request message to inform their neighbors of the new BS. The neighbors respond with an Add Coexistence Neighbor Response message confirming receipt of the information.~~

~~III. Similarly, if a new system enters the scene, and there is another system which the new system cannot hear but the existing system can hear the new system, after a certain timeout without the new system initiating an Identify Coexistence Request/Response, the existing system initiates it as stated in I & II above.~~

~~IV. If a system goes a period of time without hearing a neighbor or otherwise determines a neighbor has disappeared (see V, below), it will send a Delete Coexistence Neighbor Request message to its neighbors indicating that it is removing the system from its list of neighbors. This does not affect whether those other systems still think it exists; only that it is no longer considered a neighbor of the first system.~~

~~V. If a system knowingly leaves the scene (different channel, intentional shutdown, etc.) it should courteously send a Leaving Coexistence Neighborhood Indication message to its neighbors who will respond with a Leaving Coexistence Neighborhood Reply message and should also send Delete Coexistence Neighbor Request message to its neighbors as in IV above.~~

~~These same messages could also be sent to known DB servers or BSIS if they exist. Obviously, the DB servers and BSIS wouldn't initiate the protocol since they can't hear BSD, SSURF, or BS_NURBC messages.~~

15.6.1.6 Leaving Neighborhood ~~Reply message~~ Response (M-CX-LV-NBR-RSP)

Function:

The primitive is issued by BSIS or BS to responds to M-CX-LV-NBR-REQ primitive. ~~the BS's *Leaving Neighborhood Indication* with a *Leaving Neighborhood Reply* message.~~

Semantics:

The parameters of the primitive are as follows:

M-CX-LV-NBR-RSP

(

Destination: BSIS or BS

Attribute_List:

Null

)

~~No Attributes.~~

When generated:

This primitive shall be generated by the BS in response to an M-CX-LV-NBR-REQ primitive.

Effect of Receipt:

Upon receiving this primitive, the BS should update the list of its neighbor.

15.6.1.7 Add Coexistence Neighbor Request ~~message~~(M-CX-ADD-NBR-REQ)

Function:

This ~~message~~ primitive is sent by the BS to the coexistence neighbor BS to request to add it to coexistence neighbor list.

Semantics:

Semantics:

The parameters of the primitive are as follows:

M-CX-ADD-NBR-REQ

(

Destination: BS

Attribute_List:

BSID

Contact IP address

Channel Center Frequency

Channel Width

Channel Information

Country Code

Latitude

Longitude

Altitude

Currenct Tx Power

Operational Range

)

Attributes are shown in *Add Coe*.

Table h25—Add Coexistence Neighbor Request message attributes

Attribute	Contents
BSID	The BSID of the requested BS.
Contact IP address	The IP address of the requested BS or Coexistence Proxy of the requested BS.
Channel Center Frequency	in10kHz
Channel Width	in10kHz
Channel information	The channel information of the requesting BS. Containing Modulation mode, alternative Channel Flag

<optional>: Country code	The country code of the requested BS.
<optional>: Latitude	The latitude information of the BS.
<optional>: Longitude	The longitude information of the BS.
<optional>: Altitude	The altitude information of the BS.
<optional>: Current Tx power	Current Tx power of the BS.
<optional>: Operational Range	The operational radius of the BS.

When generated:

This primitive can be generated at the BS to request its coexistence neighbor BS to add it to coexistence neighbor list.

Effect of Receipt:

Upon receiving this primitive, the neighbor BS should response with M-CX-ADD-NBR-RSP primitive.

15.6.1.8 Add Coexistence Neighbor ~~Reply message~~ Response (M-CX-ADD-NBR-RSP)

Function:

The primitive is issued by BS to responds to M-CX-ADD-NBR-REQ primitive.

~~The BSIS responds to the BS's Add Coexistence Neighbor Request with an Add Coexistence Neighbor Reply message.~~

Semantics:

The parameters of the primitive are as follows:

M-CX-ADD-NBR-RSP

(

Destination: BS

Attribute_List:

Null

)

When generated:

This primitive shall be generated by the BSIS or BS in response to an M-CX-ADD-NBR-REQ primitive.

Effect of Receipt:

Upon receiving this primitive, the BS should update the list of its neighbor.

~~No Attributes.~~

15.6.1.9 Delete Coexistence Neighbor Request ~~message~~ (M-CX-DEL-NBR-REQ)

Function:

This ~~message~~ primitive is sent by the BS to the coexistence neighbor BS to request to delete from its coexistence neighbor list.

Semantics:

The parameters of the primitive are as follows:

M-CX-DEL-NBR-REQ

(

Destination: BS

Attribute_List:

BSID

CX Proxy IP address

)

Attributes are shown in *Add Coe*.

Table h26—Delete Coexistence Neighbor Request message attributes

Attribute	Contents
BSID	The BSID of the requested BS.
CX Proxy IP address	Either one of CX Proxy IP address IPv4 or IPv6

Table h26—

When generated:

This primitive can be generated at the BS to request its coexistence neighbor BS to delete it from the coexistence neighbor list.

Effect of Receipt:

Upon receiving this primitive, the neighbor BS should response with M-CX-DEL-NBR-RSP primitive.

15.6.1.10 Delete Coexistence Neighbor ~~Reply message~~ Response (M-CX-DEL-NBR-RSP)

Function:

The primitive is issued by BS to responds to M-CX-DEL-NBR-REQ primitive.

Semantics:

The parameters of the primitive are as follows:

M-CX-DEL-NBR-RSP

(

Destination: BS

Attribute_List:

Null

)

When generated:

This primitive shall be generated by the BSIS or BS in response to an M-CX-DEL-NBR-REQ primitive.

Effect of Receipt:

Upon receiving this primitive, the BS should update the list of its neighbor.

~~The BSIS responds to the BS's Delete Coexistence Neighbor Request with a Delete Coexistence Neighbor Reply message.~~

~~No Attributes.~~