Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
Title	**WirelessMAN coexistence function primitives consolidation**
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Re:	IEEE 802.16-08/019 IEEE 802.16 Working Group Letter Ballot Recirc #29b: Announcement (2008-04-07)
Abstract	**Semantic consolidation on Coexistence Functionality primitives in 16h, moving CX proxy description into Annex and generalize the network address for basic connectivity between WirelessMAN-CX systems.**
Purpose	To consolidate the 16h draft.
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WirelessMAN coexistence function primitives consolidation

Wu Xuyong
Huawei

Overview

In letter ballot recirculation 29a, we have notice that some content in P802.16h-D5 is describing the IP level activity and beyond the scope of 802.16, we should do cleaning up to:

1) Remove IP activity description or put it into informative annex.

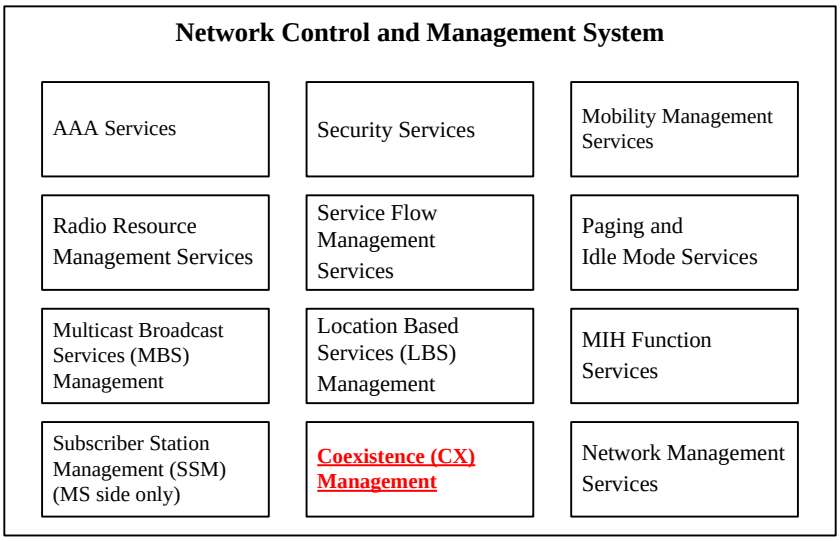
2) Define the primitives to enable the coexistence function in WirelessMAN-CX systems.

Reference:

[1] IEEE 80216-08_009r4： *Letter Ballot Recirc #29a Comment Database (2008-04-07)*
[2] IEEE P802.16h/D5: *802.16h draft 5(2008-03-22)*
[3] IEEE 802.16-08/019: *IEEE 802.16 Working Group Letter Ballot #29b: Announcement (2008-04-07)*
[4] IEEE 802.16-2004: *IEEE Standard for Local and metropolitan area networks Part 16: Air Interface for Fixed Broadband Wireless Access Systems (2004-10-01)*
[5] IEEE 802.16e-2005: *IEEE Standard for Local and metropolitan area networks Part 16: Air Interface for Fixed and Mobile Broadband Wireless Access Systems Amendment 2: Physical and Medium Access Control Layers for Combined Fixed and Mobile Operation in Licensed Bands and Corrigendum 1 (2006-02-28)*
[6] P802.16Rev2/D4: *(April 2008) DRAFT Standard for Local and metropolitan area networks Part 16: Air Interface for Broadband Wireless Access Systems*

Proposed Text Changes:

Modified the figure 3 in 1.4.4 accordingly:



Add a new section 14.2.12 in 14.2, or replace according content in 15.6 with following:

15.6(or 14.2.12) Coexistence Management:

The CX primitives are a set of primitives for supporting CX procedures between BS and NCMS.

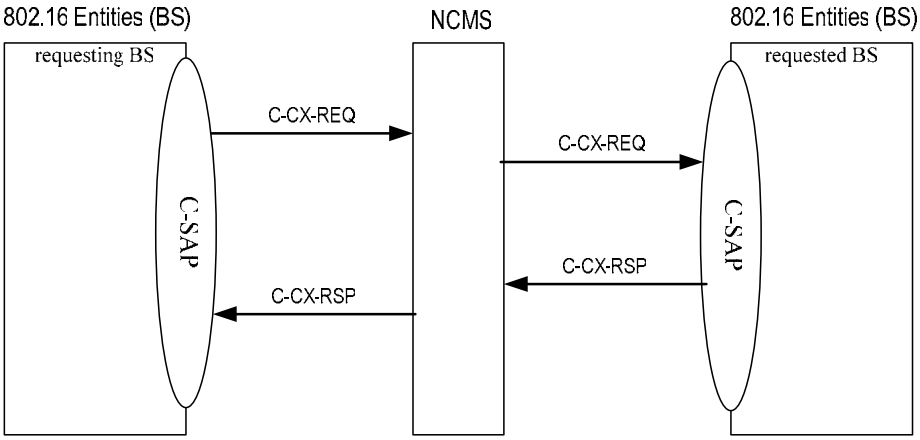


Figure xx1. primitive flow of C-CX-REQ/RSP

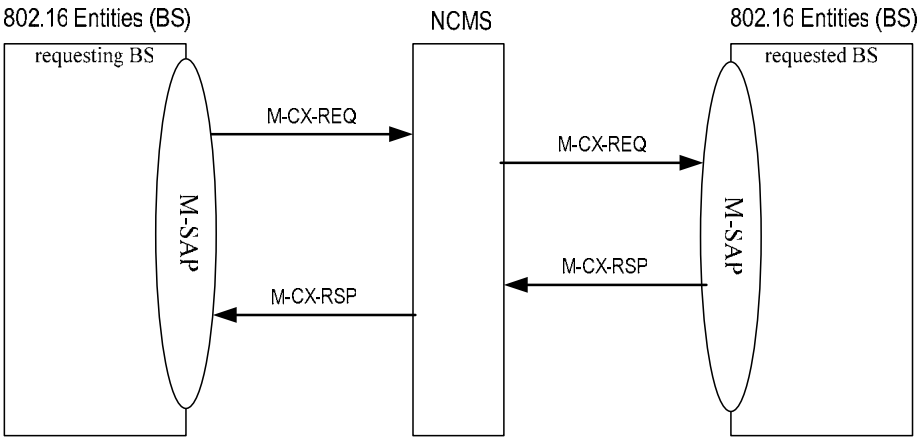


Figure xx2. primitive flow of M-CX-REQ/RSP

15.6.1(or 14.2.12.1) C-CX-REQ

This primitive is used by an 802.16 entity or NCMS to request a coexistence reaction. The Action_Type included in this primitive defines the type of coexistence procedure to be performed. The possible Action_Types for this primitive are listed in Table below:

Action Type	Description
Add neighbor	Add coexistence neighbor procedure in the WirelessMAN-CX system.
Delete neighbor	Delete coexistence neighbor procedure in the WirelessMAN-CX system.
.....	.....

The following sub-sections define the primitive when its action type is set to a specific action.

15.6.1.1(or 14.2.12.1.1) C-CX-REQ (Action_Type = Add neighbor)

Function:

This primitive is used by an 802.16 entity (BS) or NCMS to request adding the requesting BS into the neighborhood contact list of the requested BS.

Semantics of the service primitive:

The parameters of the primitive are as follow:

C-CX-REQ

(
Operation_Type: Action,
Action_Type: Add neighbor,
Destination: BS, NCMS,
Attribute_List:
BSID,
Contact Network address,
Channel Center Frequency,
Channel Width,
Channel information
)

Attribute	Contents
BSID	The BSID of the requested BS.
Contact Network address	The IP address of the requested BS or the agent of the requested BS.
Channel Center Frequency	in10kHz
Channel Width	in10kHz
Channel information	The channel information of the requesting BS. Containing: Modulation mode (0-reserved; 1-OFDM; 2-OFDMA; 3-15 reserved) alternative Channel Flag (0- no ALTCH; 1-have ALTCH)

When generated:

- **802.16 entity (BS) to NCMS:**

  This primitive is used by the 802.16 entity (BS) to request the NCMS to inform the requested BS to add the requesting BS into the neighborhood contact list, while the WirelessMAN-CX system of the requesting BS have discover the requested BS's system's neighboring.

- **NCMS to 802.16 entity (BS) to NCMS:**

  This primitive is used by the NCMS to request the requested neighbor to adding the requesting BS into the neighborhood contact list, while NCMS is requested by the requesting BS.

Effect of receipt:

- **NCMS:**

  The NCMS perform the action to inform the requested BS to add the requesting BS into the neighborhood contact list.

- **802.16 entity (BS):**

  The requested BS performs the coexistence procedure and response to the requesting BS accordingly.

15.6.1.2(or 14.2.12.1.2) C-CX-REQ (Action_Type = Delete neighbor)

Function:

This primitive is used by an 802.16 entity (BS) or NCMS to request deleting the requesting BS from the neighborhood contact list of the requested BS.

Semantics of the service primitive:

The parameters of the primitive are as follow:

C-CX-REQ

(
Operation_Type: Action,
Action_Type: Delete neighbor,
Destination: BS, NCMS,
Attribute_List:
BSID,
Contact Network address
)

Attribute	Contents
BSID	The BSID of the requested BS.
Contact Network address	The IP address of the requested BS or the agent of the requested BS.

When generated:

- **802.16 entity (BS) to NCMS:**

  This primitive is used by the 802.16 entity (BS) to request the NCMS to inform the requested BS to delete the requesting BS from the neighborhood contact list, while the WirelessMAN-CX system of the requesting BS is stop neighboring the requested BS's system.

- **NCMS to 802.16 entity (BS) to NCMS:**

  This primitive is used by the NCMS to request the requested neighbor to delete the requesting BS from the neighborhood contact list, while NCMS is requested by the requesting BS.

Effect of receipt:

- **NCMS:**

  The NCMS perform the action to inform the requested BS to delete the requesting BS from the neighborhood contact list.

- **802.16 entity (BS):**

  The requested BS performs the coexistence procedure and response to the requesting BS accordingly.

15.6.1.3(or 14.2.12.1.3) C-CX-REQ (Action_Type = TBD)

TBD

15.6.1.4(or 14.2.12.1.4) C-CX-REQ (Action_Type = TBD)

TBD

15.6.1.5(or 14.2.12.1.5) C-CX-REQ (Action_Type = TBD)

TBD

15.6.1.6(or 14.2.12.1.6) C-CX-REQ (Action_Type = TBD)

TBD

15.6.1.7(or 14.2.12.1.7) C-CX-REQ (Action_Type = TBD)
TBD

15.6.1.8(or 14.2.12.1.8) C-CX-REQ (Action_Type = TBD)
TBD

15.6.1.9(or 14.2.12.1.9) C-CX-REQ (Action_Type = TBD)
TBD

15.6.1.10(or 14.2.12.1.10) C-CX-REQ (Action_Type = TBD)
TBD

15.6.1.11(or 14.2.12.1.11) C-CX-REQ (Action_Type = TBD)
TBD

15.6.1.12(or 14.2.12.1.12) C-CX-REQ (Action_Type = TBD)
TBD

15.6.1.13(or 14.2.12.1.13) C-CX-REQ (Action_Type = TBD)
TBD

15.6.1.14(or 14.2.12.1.14) C-CX-REQ (Action_Type = TBD)
TBD

15.6.1.15(or 14.2.12.1.15) C-CX-REQ (Action_Type = TBD)
TBD

15.6.2(or 14.2.12.2) C-CX-RSP
This primitive is used by an 802.16 entity or NCMS to response to a request in coexistence procedure. The Action_Type included in this primitive defines the type of coexistence procedure to be performed. The possible Action_Types for this primitive are listed in Table below:

Action Type	Description
Add neighbor	Add coexistence neighbor procedure in the WirelessMAN-CX system.
Delete neighbor	Delete coexistence neighbor procedure in the WirelessMAN-CX system.
……	……

The following sub-sections define the primitive when its action type is set to a specific action.

15.6.2.1(or 14.2.12.2.1) C-CX-RSP (Action_Type = Add neighbor)
Function:
This primitive is used by an 802.16 entity (BS) or NCMS to respond the request of adding the requesting BS into the neighborhood contact list of the responding BS.

Semantics of the service primitive:

The parameters of the primitive are as follow:

C-CX-RSP
(
Operation_Type: Action,
Action_Type: Add neighbor,
Destination: BS, NCMS,
Attribute_List:
No attribute.
)

15.6.2.2(or 14.2.12.2.2) C-CX-RSP (Action_Type = Delete neighbor)

Function:

This primitive is used by an 802.16 entity (BS) or NCMS to respond the request of deleting the requesting BS from the neighborhood contact list of the responding BS.

Semantics of the service primitive:

The parameters of the primitive are as follow:

C-CX-RSP
(
Operation_Type: Action,
Action_Type: Delete neighbor,
Destination: BS, NCMS,
Attribute_List:
No attribute.
)

15.6.2.3(or 14.2.12.2.3) C-CX-RSP (Action_Type = TBD)

TBD

15.6.2.4(or 14.2.12.2.4) C-CX-RSP (Action_Type = TBD)

TBD

15.6.2.5(or 14.2.12.2.5) C-CX-RSP (Action_Type = TBD)

TBD

15.6.2.6(or 14.2.12.2.6) C-CX-RSP (Action_Type = TBD)

TBD

15.6.2.7(or 14.2.12.2.7) C-CX-RSP (Action_Type = TBD)

TBD

15.6.2.8(or 14.2.12.2.8) C-CX-RSP (Action_Type = TBD)

TBD

15.6.2.9(or 14.2.12.2.9) C-CX-RSP (Action_Type = TBD)

TBD

15.6.2.10(or 14.2.12.2.10) C-CX-RSP (Action_Type = TBD)

TBD

15.6.2.11(or 14.2.12.2.11) C-CX-RSP (Action_Type = TBD)
TBD

15.6.2.12(or 14.2.12.2.12) C-CX-RSP (Action_Type = TBD)
TBD

15.6.2.13(or 14.2.12.2.13) C-CX-RSP (Action_Type = TBD)
TBD

15.6.2.14(or 14.2.12.2.14) C-CX-RSP (Action_Type = TBD)
TBD

15.6.2.15(or 14.2.12.2.15) C-CX-RSP (Action_Type = TBD)
TBD