Project	**IEEE 802.16 Broadband Wireless Access Working Group** <http://ieee802.org/16>
Title	**Encapsulate messages used in inter-system communication over the air into CXP-REQ/RSP-MAC message**
Date Submitted	**2007-07-19**
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Re:	Task Group Review of Working Group Draft P802.16h/D2b
Abstract	Encapsulate messages used in inter-system communication over air into CXP-REQ/RSP-MAC message
Purpose	Accept the proposed text.
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Encapsulate messages used in inter-system communication over the air into CXP-REQ/RSP-MAC message

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Overview

Comment 5 from [1] suggests encapsulate the renting messages in the CXP-REQ/RSP messages. And reply comment of comment 8 from [1] suggests move section 15.5 to section 6.3.2 and improve section 15.5 how the encapsulate messages be transmitted over the air. Contribution [2] also suggests encapsulate the messages used for intersystem communication over air and gives the procedure of intersystem communication over the air. This contribution addresses these comments, encapsulates the messages used for intersystem communication over the air and gives the procedure of intersystem communication over the air.

Encapsulate the Messages Used by Intersystem Communication over the Air

The general procedure of intersystem communication over the air may be sorted into two categories. Source BS sends request messages to forwarding SS or SSs, then forwarding SS or SSs forward these messages to destination BS. Destination BS sends response message to forwarding SS, then forwarding SS forward response messages from destination BS to source BS. As shown in figure 1.
Source BS may be the serving BS or foreign BS of forwarding SS. Destination BS may be the serving BS or foreign BS of forwarding SS.

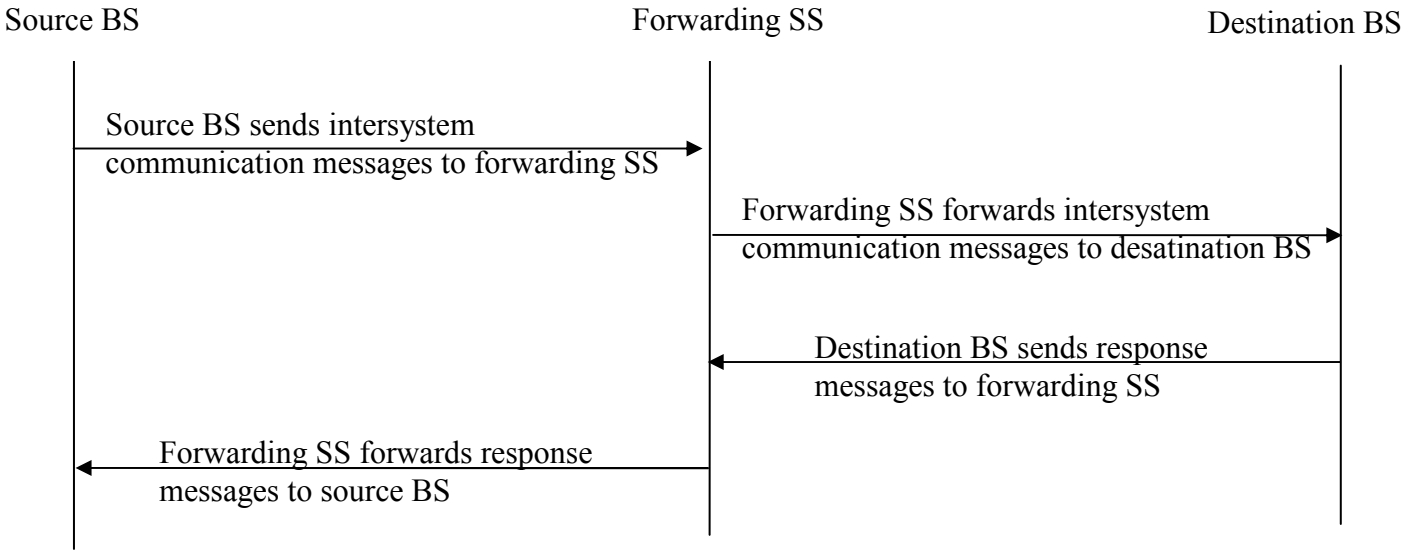

Figure 1 general procedure of intersystem communication over the air

So we encapsulate all messages from source BS to forwarding SS and all messages from forwarding SS to destination BS into CXP-REQ-MAC message. Encapsulate all messages from destination BS to

forwarding SS and all messages from forwarding SS to destination BS into CXP-RSP-MAC messages.

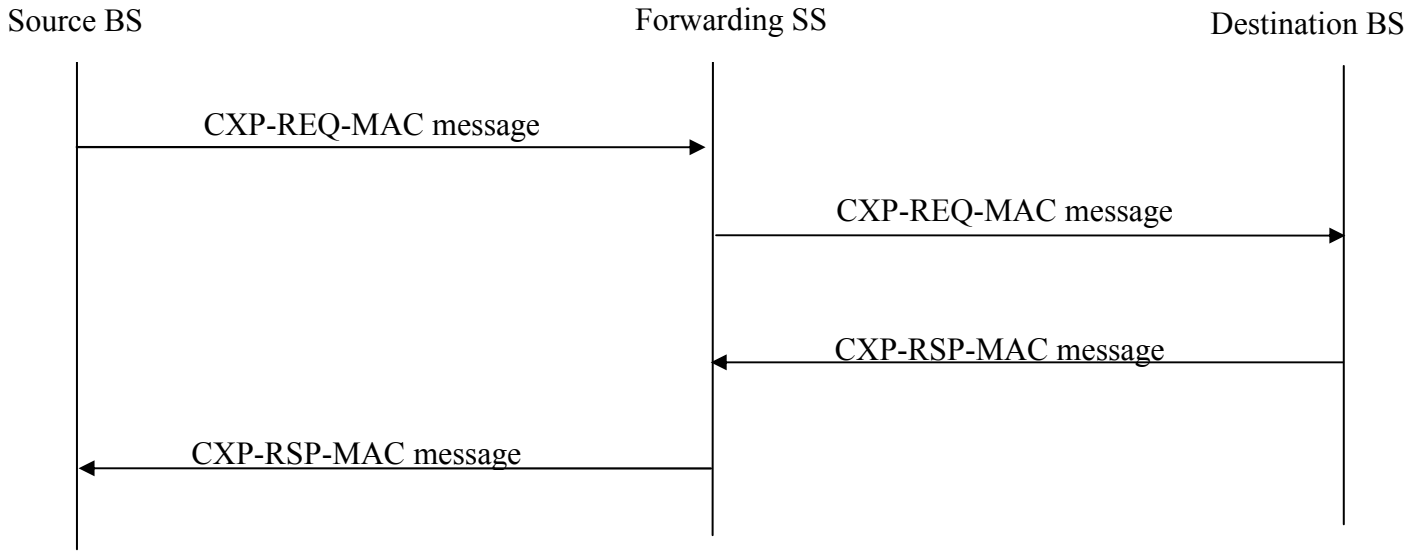

Figure 2 intersystem communication procedure over the air via the CXP-REQ/RSP-MAC messages

Depending on the properties of messages encapsulated into the CXP MAC messages, source BS may broadcast CXP messages to all possible forwarding SSs using broadcast CID, or source BS may send CXP messages to specific forwarding SS using basic CID. All CXP MAC messages from forwarding SSs to BS should be basic CID.

Proposed Text

6.3.2.3 MAC management messages

Table 14 MAC management message

Type	Message Name	Message Description	Connection
67	BSD	Base Station Descriptor	Broadcast
68	SSURF	SS Uplink RF Descriptor	Basic
~~69~~	~~ADPD~~	~~Advertisement Discovery Policy Descriptor~~	~~Multicast~~
~~70~~	~~ADV-REQ~~	~~Advertisement Request~~	~~Broadcast~~
~~71~~	~~Notification~~	~~Notify whether the relaying SS completes the CTCXP operations~~	~~Basic~~
~~72~~	~~ADV-RSP~~	~~Advertisement Response~~	~~Basic~~
~~73~~	~~RA-REQ~~	~~Resource Allocation Request~~	~~Basic~~
~~74~~	~~RA-RSP~~	~~Resource Allocation Response~~	~~Basic~~
~~75~~	~~ACK~~ ~~*[*Editor's notes: the*~~	~~The offeror BS acknowledges the correct reception of RA_RSP message~~	~~Basic~~

	~~*name of the CT message should be specific]*~~		
~~76~~69	BS_CCID_REQ	Base Station Co-Channel Interference Detection Indication	Basic
~~77~~70	BS_CCID_RSP	Base Station Co-Channel Interference Detection Response	Basic
~~78~~71	CXP-REQ-MAC	Coexistence Protocol Request MAC message	Broadcast or Basic or Multicast
~~79~~72	CXP-RSP-MAC	Coexistence Protocol Response MAC message	Broadcast or Basic
~~80~~73	OCSI_MNTR_CFG	CSI monitoring request message	Broadcast
~~81~~74	OCSI_MNTR_REP	CSI monitoring response message	Basic
~~82~~75-255	Reserved		

[***To Daivd: Could you check if all IEs of section 6.3.2.64~70 have been included into section 15.5.1.25~30. If yes, then we can delete section 6.3.2.64~70 since all IEs has included in CXP-REQ/RSP-MAC message. If no, could you make some modification to section 15.5.1.25~30 to include all IEs you need? And could you go through the document to replace the usage of messages of 6.3.2.64~70 to 15.5.1.25~30. Thanks.***]

[***To Editor: Change 6.3.2.3.71 to 6.3.2.3.64, 6.3.2.3.72 to 6.3.2.3.65, 6.3.2.3.73 to 6.3.2.3.66, 6.3.2.3.74 to 6.3.2.3.67, 6.3.2.3.75 to 6.3.2.3.68, 6.3.2.3.76 to 6.3.2.3.69***]

6.3.2.~~73~~66 Coexistence Protocol Request MAC message (CXP-REQ-MAC)

This message encapsulates the Coexistence Protocol Request MAC messages.

For intersystem communication over the air, CXP-REQ-MAC message is transmitted from source BS to forwarding SS/SSs or forwarding SS/SSs to destination BS. For downlink, based on the number of forwarding SS, CXP-RSP-MAC messages may be transmitted using broadcast CID, multicast CID or basic CID. For uplink, CXP-REQ-MAC messages should be transmitted using forwarding SS's basic CID allocated by destination BS.

CXP-REQ-MAC ~~is a broadcast message and~~ shall include the following parameters:
~~**Requesting Source BSID:** the BSID of the BS requesting an action through the Coexistence Protocol~~
~~**Target BSID:** the BSID of the BS that should receive the message or the BSID of the Base Station Identification Server~~
CXP_Message_type: this is a TLV described in the paragraph *15.5.1*

CXP-REQ-MAC has the following format:

Table 108al—CXP-REQ-MAC message format

Syntax	Size	Notes
CXP-REQ-MAC_Message_Format () {		
Management Message Type = 78	8 bits	
CXP_Message	variable	See the description of the Coexistence Protocol messages in *15.5.1*
}		

6.3.2.~~74~~67 Coexistence Protocol Response MAC message (CXP-RSP-MAC)

This message encapsulates the Coexistence Protocol Response MAC messages.

For intersystem communication over the air, CXP-RSP-MAC message is transmitted from destination BS to forwarding SS/SSs or forwarding SS/SSs to source BS. For downlink, based on the number of forwarding SS, CXP-REQ-MAC messages may be transmitted using broadcast CID, multicast CID or basic CID. For uplink, CXP-REQ-MAC messages should be transmitted using forwarding SS's basic CID allocated by source BS.

CXP-RSP-MAC ~~is a broadcast message and~~ shall include the following parameters:
CXP_Message_type: this is a TLV described in the paragraph *15.5.1*

CXP-REQ-MAC has the following format:

Table 108am—CXP-RSP-MAC message format

Syntax	Size	Notes
CXP-RSP-MAC_Message_Format () {		
Management Message Type = 79	8 bits	
CXP_Message	variable	See the description of the Coexistence Protocol messages in *15.5.1*
}		

Reference

[1] 80216h-7_014r1, comment on working group draft p802.16h/D2b

[2] C802.16h-07_27r1, A Method to Implement the Inter-system Communication over Air

[3] IEEE 802.16h-D2b, Air Interface for Fixed and Mobile Broadband Wireless Access Systems: Amendment for Improved Coexistence Mechanisms for License-Exempt Operation

[4] IEEE 802.16e-2005, 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