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Re:	IEEE 802.16h-06/015 – Working Group Review		
Abstract	Proposes a more logical structure which will allow better understanding of the existing mechanisms		
Purpose			
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Clarifications of some Coexistence Protocol messages

Mariana Goldhamer (Alvarion)

Introduction

The sub-group of CP messages to be reviewed / improved / added is related to the BS parameters, Radio Signature transmission, power control and new sub-frame creation.

15.5.2.17 Get_Param_For_Radio_Signature_Request message

Messages between BSs, used to request the [up-dated](#) list of parameters

Code:17

Parameters: [list of the BS parameters](#)~~none~~

15.5.2.18 Get_Param_For_Radio_Signature_Reply message

Messages between BSs, reply to the Get_Param_Request

Code:18

[Table ha - Get_Param_Reply Parameter set](#)

Attribute	Contents
_	_
_	_
_	_
_	_
_	_
_	_
_	_
_	_
_	_
_	_
_	_
Repetition interval between two Master sub-frames	The repetition interval between two Master sub-frames, measured in MAC-frames
MAC Frame number	_

Parameters: [list of the BS parameters](#)

15.5.2.19 Evaluate_Interference_Request message

~~A message sent by a new BS wishing to use an existing Master sub-frame, to the BS already acting as Masters in the specific sub-frame, and requesting them to evaluate its interference~~

[A message sent by a new BS wishing to evaluate the maximum co-channel and total interference, for separate or aggregated systems in the Community. The message is sent to every Base Station in the Community, indicating either the request to send the Radio Signature or the request to be inserted a GAP DIUC/UIUC interval for the duration of the Radio Signature. Alternatively, a BSIS can broadcast the message to an IP-multicast group including all the BSs in the community. The Radio signature may be transmitted by the BS or by the associated SSs. In case of the Radio Signature transmission by the BS, noted](#)

as RBS, is given the possibility for 20 radio signatures, which may differ due to Beam Forming or power concentration on specific sub-channels. The various RBS signatures are identified by the configuration number. The various SS signatures are identified by the RSS number, which runs from 1 to 199. The message is indicating the MAC Frame number, the offset from its start and the duration of the requested Radio Signature time-slot. A number of radio signatures may be concatenated, such that will be respected the total time-slot duration, including the propagation delays. It is recommended that this duration will be lower than 1ms. The time-slot shall use the DL sub-frame for BS signatures and UL sub-frame for SS signatures. The Radio Signature shall use the max. power used during the operation.

Code: 19

Parameters: t.b.e. The attributes are indicated in the table hx.

Table hx - Evaluate Interference Request Parameter set

<u>Attribute</u>	<u>Contents</u>
<u>-</u>	<u>-</u>
<u>-</u>	<u>-</u>
<u>-</u>	<u>-</u>
<u>-</u>	<u>-</u>
<u>-</u>	<u>-</u>
<u>-</u>	<u>-</u>
<u>-</u>	<u>-</u>
<u>-</u>	<u>-</u>
<u>-</u>	<u>-</u>
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<u>-</u>	<u>-</u>
<u>-</u>	<u>-</u>
<u>-</u>	<u>-</u>
<u>-</u>	<u>-</u>

15.5.2.20 Evaluate Interference Reply message

A message sent by the existing Master BSs, reply to the Evaluate Interference Request. It provides the timing and the identification of the scheduled radio signatures.

Code:20

The attributes are indicated in the table hy.

Table hy - Evaluate Interference Replay Parameter set

<u>Attribute</u>	<u>Contents</u>
<u>-</u>	<u>-</u>
<u>-</u>	<u>-</u>
<u>-</u>	<u>-</u>

<u> </u>	<u> </u>
<u> </u>	<u> </u>

Parameters: t.b.e.

15.5.2.21 Work_In_Paralel_Request message

A message sent by a new BS wishing to use an existing Master sub-frame, to ~~the a~~ BS already acting as Masters in the specific sub-frame, and requesting ~~them to evaluate its interference the existing BS to evaluate its interference.~~

If more than one Base Station is using the sub-frame as Master, the IBS will send this message to every BS separately.

The Radio Signature will be transmitted during the claimed Master sub-frame and will consist of a DL sub-frame, starting with the first zone using the mandatory permutation (if applicable) and continuing with other used zones and their permutations. Each zone will be transmitted using the maximum power.

Code: 21

Parameters: t.b.e.

The attributes are indicated in the table hz.

Table hz - Work_In_Paralel_Request Parameter set

<u>Attribute</u>	<u>Contents</u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>

Work_In_Parallel

15.5.2.22 Work_In_Parallel_Reply message

A message sent by the existing Master BSs, reply to the Evaluate_Interference_Request.

Code:22

Parameters: t.b.e.

The attributes are indicated in the table ht.

Table ht - Work_In_Parallel_Reply Parameter set

<u>Attribute</u>	<u>Contents</u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u>Receive antenna type (1 – omni, 2 – directional)</u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u>1:=Acceptance</u> <u>2 = Rejection</u>
<u> </u>	<u> </u>

15.5.2.23 Reduce_Power_or_Quit_Sub_Frame_Request message

A message sent by an ~~old~~operating Base Station, using the sub-frame as Master, in order to request the newer Base Station to cease the operation as Master or Slave in the current sub-frame. Supplementary, the message may indicate the power reduction for accepting the Base Station to use the sub-frame as Slave.

Code:23

~~Parameters: tbc.~~

The attributes are indicated in the table hu.

Table hu - Reduce_Power_or_Quit_Sub_Frame_Request Parameter set

<u>Attribute</u>	<u>Contents</u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>

15.5.2.24 Reduce_Power_or_Quit_Sub_Frame_Reply message

A message sent by a new Base Station, in response to the old Base Station's Quit_Sub_Frame_Request message. The message indicates the actual power reduction for the requested signatures.

Code:24

~~Parameters: tbc.~~

The attributes are indicated in the table hu.

Table hu - Reduce_Power_or_Quit_Sub_Frame_Replay Parameter set

<u>Attribute</u>	<u>Contents</u>
<u>---</u>	<u>---</u>
<u>---</u>	<u>---</u>
<u>---</u>	<u>---</u>
<u>---</u>	<u>---</u>

15.5.2.25 Create_New_Sub_Frame_Request message

A message sent by a BSs to all the community BSs, to request the creation of a new Master sub-frame; the message will include: interfering BSIDs the intended operating channel and the frame-number in which the change will take place

Code:25

Parameters: ~~tbc.~~

The attributes are indicated in the table hv.

Table hv - Create_New_Sub_Frame_Request Parameter set

<u>Attribute</u>	<u>Contents</u>
<u>---</u>	<u>---</u>
<u>---</u>	<u>---</u>
<u>---</u>	<u>---</u>
<u>---</u>	<u>---</u>
<u>Repetition interval between two Master sub-frames, measured in MAC-frames</u>	<u>The repetition interval between two Master sub-frames</u>
<u>MAC Frame number</u>	<u>---</u>

15.5.2.26 Create_New_Sub_Frame_Request_Replay message

A message sent in response to the Create_New_Sub_Frame_Request message. In case of reject

Code:26

Parameters: ~~tbc.~~

The attributes are indicated in the table hr.

Table hr - Create_New_Sub_Frame_Replay Parameter set

<u>Attribute</u>	<u>Contents</u>
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Note: the following 4 messages are redundant – shall be deleted also from table h9

15.5.2.27 Reduce_Power_Request message

A message between a BS and an interfering BS requesting to reduce the power of the specified transmitter (identified by frame_number, sub-frame, time-shift) by P dB

Code: 27

Parameters: tbc.

15.5.2.28 Reduce_Power_Reply message

A message by an interfering BS in response to the Reduce_Power_Reply message.

Code: 28

Parameters: tbc.

15.5.2.29 Stop_Operating_Request message

A message sent by a Master BS to the BSs operating in its Master sub-frame, but not being Masters for this sub-frame, requesting to cease using this sub-frame in parallel

Code: 29

Parameters: tbc.

15.5.2.30 Stop_Operating_Reply message

A message sent by the BSs operating in its Master sub-frame, in response to the Stop_Operating_Request message.

Code: 30

Parameters: tbc.