Project	IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>
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Source(s)	**Soma Bandyopadhyay** **TATA Consultancy Services Limited** **M2 & N2, Sector V, Block GP, Salt Lake Electronics Complex** **Kolkata - 700091,West Bengal India**	**Voice: 091-33-2333-7417** **soma.bandyopadhyay@tcs.com**
Re:	Call for Comments and Contribution, "IEEE 802.16's License-Exempt (LE) Task Group
Abstract	This document contains comments on text originally in document IEEE P802.16h May 2006
Purpose	To provide some contextual ideas for further exploration and understanding
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Paragraph Number	Paragraph Title	Comments No	Comments/Idea Added
6.4.1	General concepts	1	**Co-Channel interference can be detected in the various phase of the 802.16 MAC.** **Following scenarios can be considered:** 1. During Initialization phase of the base station – main challenge is how to detect the interference 2. During the initial ranging phase LE BSs could also add a contention opportunity for uplink co-existence discovery message like SSURF. 3. Completion of initial ranging phase of SS and BS is in polled initial ranging phase – Along with the ranging opportunity for sending range request to BS, BS should also give a uni-cast (ideally, may be given multicast) opportunity for sending new MAC message for co-channel interference (like SSURF, BS_CCID_IND etc.) handling. The IEs for these messages can be added as extended UIUC in the UL-MAP. BS should schedule these grant periodically. 4. Post ranging phase – starting from the polled ranging phase BS should send the grant for new MAC message for co-channel interference per SS basis. 5. SS will get a uni-cast grant after expiration of T27 timer maintained by BS in this phase. The SS may send a REP-RSP containing channel measurement reports as well as co-channel interference measurement reports, in an unsolicited fashion, or when other interference is detected above a threshold value. 6. After Registration or capability negotiation with subscriber station- Detailed descriptions are given in the next section. N.B: The above text may be added in the 6.4.1
-6.4.1	General concepts	2	During ranging phase if SS receives a BSD message from any other BS, determination of transmit signal strength for that SS would be affected
-6.4.1	General concepts	3	Extra TLV could be added in RNG-REQ in the support of co-existent neighbor detection and maintenance
-6.3.2.3.62	Base Station Descriptor (BSD) message	4	BSD modulation type should be unique

-6.3.2.3.62	Base Station Descriptor (BSD) message	5	CMI frame requires a frame prefix; where it can describe the duration of the BSD message and the rate ID for demodulating BSD or can use a unique rate id for demodulating it. CMI frame prefix can have one symbol duration with a unique modulation /coding type. (Like FCH has BPSK1/2)
-6.3.2.3.62	Base Station Descriptor (BSD) message	6	After sending the BSD message BS sets a timer for the SSURF message. If no SSURF message is received during this time interval, it can consider that no SS belonging to other BS is interfering with it.
-6.3.2.3.63	Subscriber Station Uplink Radio Frequency (SSURF) message	7	SS sends the SSURF by using the **opportunity provided by its master BS in UL_MAP** to interferer BS in the first available CMI frame owned by the system. Currently if more than one SS belongs to the same master BS detects BSD from a same foreign BS all the SS will send the SSURF. Foreign Bs should process the first **SSURF and drop the other SSURF if they have same BS_ID**.
-6.3.2.3.63	Subscriber Station Uplink Radio Frequency (SSURF) message	8	If the number of SS increase, and BS can not provide unicast opportunity a contention opportunity is required for sending SSURF message for the SSs belonging to the same system, this needs to be clearly indicated by the ULMAP IE
-6.3.2.3.63	Subscriber Station Uplink Radio Frequency (SSURF) message	9	While sending a grant for SSURF to SS in CMI BS may add some specific criteria to become eligible for sending SSURF message in response to BSD . SS would match those criteria before sending the SSURF. This can reduce the chances of collision
-6.3.2.3.67	BS_CCID_IND message	10	SS is required to send the BS_CCID_IND message in the first unicast opportunity. According to 802.16d standard BS maintains a T27 idle timer for providing unicast opportunity to its SS. SS can use this opportunity for sending this message
-6.3.2.3.67	BS_CCID_IND message	11	Instead of using BS_CCID_IND SS can use REP_RSP message. BS needs to define a uni-cast opportunity for sending BS_CCID_IND message or can send in the first available unicast opportunity. The subscriber station can send co-channel interference information by using REP_RSP in an Unsolicited way
-6.3.2.3.68	BS_CCID_RSP message	12	Instead of BS_CCID_RSP message BS can use REP_REQ message to indicate whether the interference events identified in the BS_CCID_IND or REP_RSP sent by SS have been resolved.

-14	Management Interfaces and Procedures	13	A new object called **wmanIfBsCxObjects** needs to be added in the wmanIfMib strucure. The said object will contain list of co-neighbor BS's ID (BS_ID), their respective proxy IP, EIRP (Effective isotropic radiated power) ,and IP of its own shared proxy server. This is required for BS to get an updated information of its **wmanIfBsCxObjects** to schedule the interference free slot. BS needs to trigger the LE management plane for this updated information N.B: Currently wmanIfMib is defined in 802.16f document
-15.2.1.1.7	Coexistence Messaging Interval	14	BS only monitors CMI interval in a system. Can use a timer for monitoring this interval
-15.6.2.2.6.5	Radio Resources Sharing Opportunities Advertisement Discovery-	15	There is a chance of wastage of bandwidth for the use of CMI frame. By using Credit tokens mechanism BW wastage could be minimized in the neighbor advertisement process. The challenge here (Credit tokens) is to determine the renting period for the master BS.
-15.6.2.2.6.5	Radio Resources Sharing Opportunities Advertisement Discovery- "The MATI and SATI time positions are known by the "master" and "slave" SSs. "	16	SATI time information could be sent by the slave BS by adding new DL_MAP- IEs in the DLMAP. New DIUC to rate id definition is also required in this case. Slave SSs could listen this SATI interval by using this new DL_MAP_IE to get the ADAP. Master BS and slave BS may send the MATI and SATI time position information in the FCH of a frame that is going to contain MADD and SADD messages respectively.

-15.6.2.2.6.5	Radio Resources Sharing Opportunities Advertisement Discovery	17	The master BS may request (a new massage over IP may be introduced) network resource management system for a MATI with its T_Start_M. Scheduler of Master BS would determine T_Start_M, T_End_M as well as renting time interval. Resource management maintains a pool of MATI, in association with base station id. In reply to the said request, resource management would appraise the master BS of MATI. Master BS would send this MATI (time positions) to all the SSs (including slave SS) belonging to its cell. Master BS determines MATI position relative to a frame start time to determine whether that MATI would be the part of that frame or not and send this MATI information in the FCH of that frame. (It can use any burst other than the first burst of the DLFP)