Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
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Re:	
Abstract	Minutes of TG1-PHY Session #11
Purpose	
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Minutes of Session #11 TG1 PHY

Monday (1/22) Afternoon:

We started to go over the editorial comments first.
Comments accepted (either with or without modifications):

- 273, 266, 267, 267, 271, 272, 281, 288, 291, 300, 308, 311, 312, 323, 326, 327, 328, 330, 260, 258, 262, 263, 264
- 305 deferred to technical comments resolution (Frequency synchronization) – ***Note: was rejected***

Tuesday (1/23)+Wednesday (1/24) morning (8:30-9:30):

We continued with the editorial comments. Comments accepted:

- 265, 268, 274, 275, 276, 277, 279, 280, 282, 290, 298, 303, 307, 329, 331

The following comment was rejected: 289

The correct value for minimum RS correction capability is t=0

The following comment requires further discussion: 294

The minimum payload size prior to RS encoding is 6 in one part of the document and k ($k \geq 6$) in another part.

The following comment requires more explanation from TG1-MAC: 283

This is regarding the PHY/SAP part. We seek guidance

We reviewed PHY related issues in Carl Eklund's document (P802161_D1-BodyCMP.pdf) which described editorial changes to the current draft. In general the requests for changes were accepted. There were 3 issues to be resolved:

- The description In section 8.2.2.2.1 (uplink, adaptive modulation) should match the MAC capabilities
- The descriptors in 8.2.4.3.2.1 contain FEC options irrelevant to mode A. This brought up a general issue to review all PHY descriptors for matching them correctly with PHY capability/functionality.
- Table 33 (8.2.2.1.8) should be eliminated as it is redundant to Table 38 (8.2.4.5.6)

Remark: Numbering referred to new document (Carl)

We then reviewed the technical comments.

- Accepted 278 (Modified to instruct the reader that the UIUC should be a robust burst profile as it deals with extreme conditions)
- Accepted: 297, 325, 270
- Accepted 284 (After Ken Stanwood clarified the issues, comment was accepted with modification to include a discussion on alternatives dealing with a situation when there is no information to transmit. One option is to use stuff bytes and another is to schedule a gap event).
- Accepted 286, 292
- Rejected 296. This is a misunderstanding of the commenter. The payload is 253 bytes. The TC layer deals with the data prior to encoding or after decoding.
- Accepted 299 (language somewhat modified yet to initial concept remains – corner points of the constellations coincide)
- Accepted 301
- Comment 302 deferred to a TG1 joint session discussion. This comment requests to delete the 64QAM option from the uplink. The concern is that this may impact terminal cost yet it was noted that we have no ETSI-TM4 like restrictions imposing 64QAM spectrum masks on QPSK signals if 64QAM is not deployed or if the channel arrangements are such that the adjacent channel issue maybe relaxed.
- Comment 304 rejected. There was no consensus for mandating a specific form of synchronization.

- Comment 306 modified. Instead of mentioning RF sources the term "Carrier frequency" was used to avoid mandating specific radio synchronization details.
- Accepted 309
- Rejected 310 as it seems that +/- 5 ppm is easily achievable at the base station.
- Rejected 313 as there is currently no reference to base station receiver parameters
- Rejected 314 as the BER mentioned in the base station section is intended for transmission quality purposes.
- Rejected 315, 316 as it was decided in Session #10 to remove these parameters at all.
- Rejected 317 as the commenter did supply sufficient data for the requested change.
- Rejected 318 as it was baud rate dependent and supplied information only for some discrete European bands
- Rejected 319 as the group felt that Tx power control range + a limit on minium max. power is sufficient
- Accepted 320 with a big modification – 0.5 dB steps with no tolerance mentioned. The original request for 1 dB steps may be too big when adaptive modulation is considered.
- Rejected 321 as there was no consensus mandating symbol clock synchronization in a specific way
- Accepted 322, 324
- Rejected 285. The group felt that modifications due to comment 284 are sufficient.
- Accepted 293
- We numbered 3 comments that were sent to Roger on time but were not in the data base (372, 373 and 374)
- Accepted 372 with modification. This comment requests to increase the resolution of burst time accuracy to +/- _ symbol. Modification to original comment regarding the language used for "resolution" and "accuracy". This comment was introduced on Tuesday but resolved on Wednesday morning after additional discussions.
- Comment 373 differed to a discussion with TG1-MAC. The issue here is to understand the MAC capability of setting the gaps between bursts. Bill Meyer noted that it is preffered to have the ramp-up/down SS limitation conveyed to the BS at registration making it more flexible (different vendors may have different performance levels) yet there should be some maximum (we don't want to consume a large portion of the frame for ramping up/down).
- Comment 374 accepted. This comment deals with the Tx/Rx gap time length and sets it on 2 uSec max. This issue was discussed on Tuesday and revisited on Wednesday morning as requested by Juha. After a short discussion the comment was accepted.

A motion by Jay Klein was introduced:

(a) Remove all items from 8.2.7 which have no data (TBD) and relevant sections which reference these items
(b) Remove TBR notation from items in 8.2.7 (keep the items)

Bill M. requested to have a list of removed items for tracking them for future input. The motion was modified to include a third item:

(c) Produce a list of removed items for future notification

Motion was approved unanimously. As a result of this motion and resolution of some comments and for better document organization/flow. Table 64 in 8.2.7 will be removed.

A short joint TG1 session was schedule for Wednesday 13:00 to go over some open PHY issue as indicated in the minutes.

Joint Session with TG1 (MAC/PHY) (Wednesday 1:00-2:30):

Jay presented a summary of the TG1 activities to the group.
Regarding the PHY/SAP, Jay will meet with Vladimir Y. for explanations (comment)
Carl's document was discussed:
(1) Using comment 371, It will be indicated to remove burst descriptors for Mode A as there is no burst mode in mode A.
(2) In mode B and uplink sections Jay will provide an accurate burst descriptor listing FEC possibilities and their effect on the list

Comment 302 regarding the removal of a 64-QAM option (SS) was rejected in a formal vote (6:1). The main reason for rejection —It is only an option that does not penalize QPSK terminals as there are no spectrum mask restriction specific to this case (they may vary and their effect may depend to the deployment scenario: number of channels, re-use plan etc.)

Comment 373 resolved with the modification regarding ramp up/down time – "A system wide parameter expressed in PS units (Modulation and Operating frequency dependent)" (Remark in the TG1-PHY discussions there was a reference to 373 and 374 but actually in the comments sent to Roger they are combined as one, meaning "373"="373"+"374")

Thursday (1/25) Morning:

2 issues remained:

- Comment 283 from Vladimir Y., requested PHY SAP parameters. Jay Klein introduced a document which supplies these parameters. There was a short discussion which led to some minor changes. The end result will be uploaded today to the server.
- Comment 294, regarding the shortening issue (both downstream mode B and the upstream). The current language about stuffing and shortening in the upstream section is the correct one and should be applied for the downstream as well. There is a reference in the downstream part how to deal with an allocation spanning more than one RS block leading to a remainder using a shortening procedure. This part is correct and should be applied for the upstream as well.

After concluding these issues the group approved to submit the PHY portion of the draft for letter balloting. The group decided that there is no need for a meeting on Friday morning.