IEEE P802.11
Wireless LANs

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| Minutes of the Tuesday PDED ad hoc group meeting during the IEEE 802.11 January 2017 meeting |
| Date: 2017-01-17 |
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Abstract

This document contains the minutes of the 2017-01-17 Tuesday AM2 meeting of the IEEE 802.11 PDED ad hoc group.

At 2017-01-17T10:30-05:00 the PDED ad hoc Chairman called the meeting to order. Andrew Myles acts as Chairman of IEEE 802.11 PDED ad hoc group. The Chairman presents 11-16/1602r2. The document contains a proposed agenda. The Chairman reminds attendees to record attendance.

Guido R. Hiertz volunteers to act as secretary. He records this meeting minutes.

At 2017-01-17T10:35-05:00 the group approved the agenda proposed in 11-16/1602r2 by unanimous consent. The Chairman continues reviewing slides 10 to 29 of his submission 11-16/1602r2. The Chairman outlines his view on the PDED ad hoc group’s topic of interest. The Chairman proposes that the 802.11 Working Group (WG) responds to 3GPP at some stage.

Discussion at 2017-01-17T10:46-05:00:

* Comment: Our next actions are based on speculations.
* Response: The Chairman and the commenter agree that both do not know why 3GPP did not respond.
* Comment: We should not continue conversation with 3GPP if is not productive.

At 2017-01-17T10:48-05:00 the Chairman continues presenting his submission 11-16/1602r2.

Discussion at 2017-01-17T10:49-05:00:

* Question about slide 30: Do we talk about all statements in the liaison letter or only about the −72 dBm threshold.
* Question: How do any of the options moves things forward?
* Response: The Chairman believes that we should agree to disagree with 3GPP. He states it is necessary to document that IEEE 802.11 disagrees with 3GPP. It is intended to document for other use in the future.

Discussion at 2017-01-17T10:52-05:00:

* Comment: The 14 different topics listed need to be handled on a case by case basis.

At 2017-01-17T10:54-05:00 the Chairman continues to present his submission from slide 31.

Discussion at 2017-01-17T10:56-05:00:

* Question: Are we asked for a response by 3GPP?
* Answer: No we are not requested. But if we do not respond it will be taken as an accept. We should use their (3GPP’s) own results to justify why we don’t change threshold.
* The Chairman argues that the data here will be used at ETSI TC BRAN for debating HS EN 301 893.

At 2017-01-17T11:03-05:00 the Chairman continues from slide 32 of his slides.

Discussion at 2017-01-17T11:10-05:00:

* Question regarding slide 36: Do we have any information about the 3GPP RAN4 timeline?
* No answer.
* Question: Does 3GPP use a threshold of −72 dBm for all devices (802.11 and LAA) in its simulation studies?
* Comment: Yes, they assume fairness if all use −72 dBm.
* Comment: No they simulate with −62 dBm and LAA using −72 dBm.
* Commenters disagree.

At 2017-01-17T11:12-05:00 the Chairman continues presenting from slide 37. Discussion:

* Comment: We should be more interested in what RAN1’s spec says than what RAN4 simulates.
* Question: Do you believe that any work in RAN4 will impact RAN1?
* Answer: I don’t know.
* Comment: We could make comments into the 3GPP process.
* Response: 3GPP might not agree but the material could spill over to ETSI TC BRAN and be used there.
* Comment: The military might comment in ETSI TC BRAN regarding the impact of ED thresholds on radar detection.
* Comment: This might be used to argue that 3GPP’s LAA technology must be forced to apply an ED threshold of −82 dBm.
* Comment: Until now, I haven’t seen any formal comments from the military.

At 2017-01-17T11:24-05:00 Chairman present slide 40.

Discussion at 2017-01-17T11:26-05:00:

* Question: What do we expect from such a letter?
* Response: We would expect they [3GPP] accept our views. This is unlikely. Therefore, it’s important to document. Then we can address other groups. All of this is public information. We should build a strong case. Maybe we can create a case that an ED level of −72 dBm is too high. We should leverage on the radar folks to make our arguments stronger.
* Comment: We should include, what we believe are the right scenarios for determining fair coexistence.
* Comment: We haven’t done the numerical analysis of how many low RSSI links we want etc.
* Comment: All options are on the table for the future. The future is beyond 3GPP release 13. We should use regulatory bodies to enforce a lower ED level for 3GPP’s LAA technology.
* Comment: Our overall goal is fair coexistence not a lower ED threshold.
* Comment: We have IEEE 802.19 for coexistence. This group shoul discuss ED only

At 2017-01-17T11:37-05:00 presents Kosuke Aio 11-17/62r0

* Comment: The value for CWmax for 802.11 APs is wrong. The 802.11 standard defines a value of 63 for 802.11 APs. Only for 802.11 STAs the value for CWmax is 1023 for the Best Effort category.
* Comment: There are differences in the channel access mechanism that cause difference between 802.11 and the example LAA implementation.
* Question: Do you intend to analyze more factors that influence performance? You have substantial differences in the assumptions?
* Comment: In your scenario, LAA uses CSMA/CD and 802.11 uses CSMA/CA. Your flowchart indicates that LAA never applies any random backoff on the initial transmission attempt.
* Comment: Your flowchart suggests that you implemented a much more aggressive medium access scheme for 3GPP LAA.
* Comment: The 802.11 capture effect has been identified ten or more years ago. The effect suggests that inner BSSs achieve lower performance than outer BSSs that have fewer neighbors. However, among the inner and among the outer BSSs performance should be equal. Your simulation results show inequal results for the inner BSSs. They are also different for the outer BSSs. The simulation probably never reached a steady state. There seem to be issues with the initialization of the simulation.
* Comment: I assume that ther are too few Monte Carlo drops? 20 are not sufficient. Maybe the stations are never equally distributed.
* Comment: Review the results with the right CWmax value of 63. Otherwise all your conclusions are flawed.
* Question: How does LAA transmit and how long 802.11? What is the airtime duration for with TXOP=0?
* Response: In our simulation the PPDUs for both technologies are equal. So is the airtime.
* Question: What is the algorithm to adjust power to anticipated recipient?
* Response: It’s the target RSSI.

At 2017-01-17T12:16-05:00 Kosuke Aio concludes his presentation.

* Question: For your power dependent ED adjustment, are you proposing something similar to 802.11ax? I am concerned that this is complicated and what it would do to legacy devices.
* Comment: This is same ED adjustment as in EN 301 893.
* Comment: For HS EN 301 893 and 3GPP LAA the ED threshold is static once decided. It only depends on the device’s maximum output power capability.
* Comment: Do device adapt their rates?
* Comment: This is a very complicated setup, probably beyond the scope of this group

At 2017-01-17T12:21-05:00 the Chairman declares the PDED ad hoc group recessed.