IEEE P802.11
Wireless LANs

11k Sponsor Ballot Conditional Report to EXCOM for Sending D12.0 to REVCOM

Date: 2008-02-10

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Abstract

This document is the conditional report to EXCOM for sending D12.0 to REVCOM.

IEEE P802.11
Wireless LANs
802.11k Conditional Report to EXCOM to forward D12.0 to REVCOM

Date: 2007-2-8

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Abstract
This is the report to be submitted to the IEEE 802 Executive Committee, documenting that the 4th recirculation ballot on 802.11k draft 12 meets all the requirements of conditional approval to forward document D12.0 to REVCOM.

This report to the 802 Executive Committee documents the conditions in Clause 19, as they apply to the final sponsor ballot recirculation ballot on draft 12.0 of IEEE 802.11k.

From the 802 LMSC Policies and Procedures, Clause 19:

Conditions:

- Date the ballot closed
- Vote tally including Approve, Disapprove and Abstain votes
- Comments that support the remaining disapprove votes and WG responses.
- Schedule for recirculation ballot and resolution meeting.

- 4th Recirculation Dates and Vote Tally

4th Recirculation Sponsor Ballot Open Date: 2008-1-21
4th Recirculation Sponsor Ballot Close Date: 2008-2-1

105 Approve
5 Disapprove (Chaplin, Engwer, Hansen, Paine(on behalf of Aboba), Palm)
5 Abstain
115 Total

95% Affirmative

- Comments that support the remaining disapprove votes are attached

- 11k Sponsor Ballot is in its 5th recirculation with no changes to D12.0 and it concludes on 2008-02-14.

  - In the 4th recirculation, the 5 comments were rejected
  - In the 5th recirculation, the 5 rejected comments of Recirculation #4 are recirculated
  - The five comments of SB Recirculation #4 were on changed text or text affected by changed text, or text that is not part of the amendment.

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IEEE P802.11k D12.0 Radio Ressource Measurement - Sponsor Ballot Dissapprove Voter Reject comments

Cl **11k-D8.**   *SC* **D**   *P* **127**   *L*   # 7

Paine, Richard   Individual

Comment Type **T**   *Comment Status* **R**

LB96#18-Aboba: The modified IEEE 802.11 MIB, including all the changes, does not appear to have been run through a MIB compiler to test whether it will compile.

SuggestedRemedy

Issue a MIB file including all of the changes, then run the updated MIB through a MIB compiler, correcting the errors.

Response   *Response Status* **C**

REJECT.
This comment will be addressed after D9.0.

Cl **11k-D8.**   *SC* **7.3.2.21**   *P* **17**   *L* **17**   # 230

Hansen, C   Individual

Comment Type **TR**   *Comment Status* **R**

there's no restriction on how often a measurement request can be made. what is the expected behavior if this happens?

SuggestedRemedy

set maximum frequency allowable for measurement requests to once per 30 secs

Response   *Response Status* **C**

REJECT.
A STA has the option to reject a measurement (11.10.4). P88L7 indicates that only one measurement request frame may be active in any STA at any time. A new measurement request frame may be sent at any time (no time or frequency limitation) to supercede the prior measurement request frame.

Cl **11k-D8.**   *SC* **11.1**   *P* **85**   *L* **35**   # 232

Hansen, C   Individual

Comment Type **TR**   *Comment Status* **R**

There are no guidlines or limits defined in this section for how often measurements can be made. This is unacceptable. All measurements will have an effect on the network capacity and the thoughput available to stations incorporating these measurements. Implementations need guidance from the IEEE as to how often to make these measurements.

SuggestedRemedy

Add new text describing typical scenarios for how measurements are to be used.

Response   *Response Status* **C**

REJECT.
Rate, range, transmit power, regulatory classes, location, are all delimiters on the ability to provide services. The requirements and issues document produced by 11k provide those scenarios and the justification for a measurement service (02/508rX).

Cl **11k-D8.**   *SC* **11.10.2**   *P* **86**   *L* **24**   # 233

Hansen, C   Individual

Comment Type **TR**   *Comment Status* **R**

accuracy of +/- 1 TU is with respect to what point in time? one measurement may require multiple accesses to the radio, and those radio requests may not be serviced immediately

SuggestedRemedy

remove accuracy mandate

Response   *Response Status* **C**

REJECT.
REJECT TGk does not specify a measurement start time. The accuracy requirement referenced here is the accuracy of the reported actual measurement start time. Processing delays to initiate a measurement are permitted and do not affect the reported actual start time accuracy. Refer to Clause 11.1 for BSS synchronization accuracy requirements.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open   W/written   C/closed   U/unsatisfied Z/withdrawn
SORT ORDER: Comment ID

Comment ID # **233**   2/8/2008 6:19:38 PM

Submission   **Page 1 of 5**   **Joe Kwak, InterDigital**

IEEE P802.11k D12.0 Radio Ressource Measurement - Sponsor Ballot Dissapprove Voter Reject comments

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Cl **11k-D8.** *SC* **11.10.5** *P* **89** *L* **13** # 234
Hansen, C Individual

Comment Type **TR** *Comment Status* **R**

"NOTE--Since measurements on non-operating channels could potentially degrade a
station's performance,
non-operating channel measurements should be requested sparingly and for short
durations." This language is too weak and does not do enough to protect network
performance from poorly organized or excessive measurement requests that could severely
degrade QoS. Don't leave this to the WiFi alliance to solve. This should be resolved in the
IEEE.

SuggestedRemedy

Add specific requirements for when non-operating channel measurements can be made. For
example, if an AP has data queued for a particular STA it is not allowed to request non-
operating channel measurements for that STA. This needs to be a requirement on the AP,
not on the STA. Only STAs have low activity (in terms of communicated data frames in
either direction with the AP) should be requested to make non-operating channel
measurements.

Response *Response Status* **C**

REJECT.
The suggested remedy is beyond the scope of 11k, e.g. if the measuring STA is operating
on a noisy channel the user's policy may be to find a quieter channel, requiring higher than
normal priority for off-channel measurements. For busy STAs, clause 11.10.4 describes how
measurements may appropriately be refused.

Cl **11k-D9.** *SC* **I** *P* **183** *L* **1** # 1154
Chaplin, Clint Individual

Comment Type **T** *Comment Status* **R**

WM: The scope of this amendment, as stated in the PAR, is "This project will define Radio
Resource Measurement enhancements to provide interfaces to higher layers for radio and
network measurements." This does not include changes to regulatory matters

SuggestedRemedy

Delete the changes to AnnI, and submit them to TGmb, or to a Task Group that includes
regulatory matters in its scope.

Response *Response Status* **C**

REJECT.
802.11-2007 defines operation in Part 15 license-exempt bands for several PHYs, and this
amendment enhances operation with means to specify radio measurements in those bands.
To specify the radio channel for measurement, this amendment creates Regulatory Classes
for Part 15 license-exempt bands, so that the combination of Regulatory Class and Channel
Number uniquely specify channel measurement parameters e.g., channel bandwidth. 11k
would be incomplete and incorrect without these changes.

Cl **11k-D9.** *SC* **J** *P* **185** *L* **1** # 1155
Chaplin, Clint Individual

Comment Type **T** *Comment Status* **R**

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Resource Measurement enhancements to provide interfaces to higher layers for radio and
network measurements." This does not include changes to regulatory classes

SuggestedRemedy

Delete the changes to AnnJ, and submit them to TGmb, or to a Task Group that includes
regulatory matters in its scope.

Response *Response Status* **C**

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COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
SORT ORDER: Comment ID
Comment ID # **1155** 2/8/2008 6:19:39 PM

Submission **Page 2 of 5** **Joe Kwak, InterDigital**

IEEE P802.11k D12.0 Radio Ressource Measurement - Sponsor Ballot Dissapprove Voter Reject comments

Cl **11k-D9.** *SC* **11.10.11** *P* **143** *L* **10** # 1181
Engwer, Darwin   Individual

Comment Type **ER** *Comment Status* **R**

Values of mib objects are typically not detailed in the operational clauses of the standard.

SuggestedRemedy

Move table 11-11 to the appropriate section of AnnD (or AnnQ as appropriate).

Response *Response Status* **C**

REJECT.
Since the dot11MeasurementPilotCapability requires a detailed description and the sub-clauses of 11.10.11 refer to the description while describing the Measurement Pilot generation procedure. Having the table in 11.10.11 makes it easier for the reader to understand the settings. In the interest of clarity, this description deviates from the norm.

Cl **11k-D9.** *SC* **11.10.3** *P* **127** *L* **35** # 1183
Engwer, Darwin   Individual

Comment Type **TR** *Comment Status* **R**

The added text addresses the issue of measurement activity load on a STA that receives measurement requests, but does not adequately address the point raised in SB01-CID 230 (or LB78-CID-957).
The volume of measurement requests issued by a transmitting/ requesting station must be duty cycle limited in some way in order to avoid complete domination of the available network air time by measurement requests, especially in environments with hundreds or thousands of colocated STAs.

SuggestedRemedy

Add some mechanism to allow the duty cycle of measurements to be controlled wrt real data laden traffic.

Response *Response Status* **C**

REJECT.
The issue is not the % of wireless capacity or STA capacity used by radio measurements, it is to consider each STA's service load, power state and operating conditions. The AP has to consider traffic load and application requirements, regulatory requirements and specific measurement states from every STA in support of wireless network management. Guidelines and limits would have to consider regulatory requirements like 4 msec carrier sense and the detection of one microsecond radar pulses in Japan. There are no typical scenarios that describe 802.11 operation in all bands in most circumstances. Off-channel measurements are desireable to gather timely information about which channel to switch BSS operation to, and the noiser the operating environment, the more urgent the need for radio measurements off the serving channel. In any case, the STA can refuse any measurement request. We are unable to support a limit to measurements which precludes 'normal' 802.11 operation in a noisy environment, where collisions cause many retries.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
SORT ORDER: Comment ID
Comment ID # **1183** 2/8/2008 6:19:39 PM

IEEE P802.11k D12.0 Radio Ressource Measurement - Sponsor Ballot Dissapprove Voter Reject comments

Cl **11k-D12** *SC* **7.3.3**   *P* **16**   *L* **10**   # 4001

Chaplin, Clint   Individual

Comment Type   **ER**   *Comment Status*   **R**

This sub-section should not be numbered 7.3.3; it needs to come before all the 7.3.2.xxx information element descriptions. And, unfortunately, you cannot make a single sub-section.

SuggestedRemedy

Renumber as 7.3.2.1, or something like that.

Response   *Response Status*   **C**

REJECT.
The referenced text is correct, but improperly placed in the TGk draft (D12.0). Prior to publication the publication editor shall move text at P16L9-L29 and insert this text at P73L25. Page and line references are in the clean draft (D12.0). Please note that the IEEE standards are edited professionally before publication.

Cl **11k-D12** *SC* **7.3.2.21.10**   *P* **33**   *L* **49**   # 4002

Chaplin, Clint   Individual

Comment Type   **TR**   *Comment Status*   **R**

"The Sub-element ID field values for the defined optional sub-elements are shown in Table 7-29n. A Yes in the Extensible column of a sub-element listed in Table 7-29n indicates that the Length of the sub-element might be extended in future revisions or amendments of this standard. When the Extensible column of an element is set to Sub-elements, then the sub-element might be extended in future revisions or amendments of this standard by defining additional sub-elements within the sub-element. See 9.14.2." "Might be" or "can be"? Is this intended to be a warning, or a restriction on how the element might be extended? And why is a distinction being made between extending through simple data addition and through sub-elements? As far as the parser is concerned, it doesn't matter. Also, "When the Extensible column of an element is set to Sub-elements, then the sub-element might be extended in future revisions or amendments of this standard by defining additional sub-elements within the sub-element" will also extend the Length of the sub-element.

SuggestedRemedy

"The Sub-element ID field values for the defined optional sub-elements are shown in Table 7-29n. When the Extensible column of a sub-element is set to a value, then the sub-element might be extended in future revisions or amendments of this standard. If this value is "Yes", then this extension will be done by adding data onto the end of the sub-element; if this value is "Sub-elements", then the extension will be done by defining additional sub-elements within the sub-element. See 9.14.2."

Response   *Response Status*   **C**

REJECT.
We can see no technical difference in the proposed change to existing text. The simplified language and changing a period to a semi-colon we see as editorial. Consideration to this editorial item will be given by the editor prior to publication.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
SORT ORDER: Comment ID

Comment ID #   **4002**   2/8/2008 6:19:39 PM

Submission   **Page 4 of 5**   **Joe Kwak, InterDigital**

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Cl **11k-D12** *SC* **Q**   *P* **162**   *L* **12**   # **4003**

Chaplin, Clint   Individual

Comment Type **ER**   *Comment Status* **R**

"Max Measurement Duration in TUs = 2<superscript>
(dot11RRMMaxMeasurementDuration - 4)</superscript> * BeaconInterval"
Looks like some sort of formatting directives became text

SuggestedRemedy

delete the extraneous text, and format correctly

Response   *Response Status* **C**

REJECT.
The format in the draft text is defined in SNMP v2 as the correct way to indicate superscripting of characters.

Cl **11k-D12** *SC* **Q**   *P* **162**   *L* **21**   # **4004**

Chaplin, Clint   Individual

Comment Type **ER**   *Comment Status* **R**

"Non-OpMax Measurement Duration in TUs = 2<superscript>
(dot11RRMNonOperatingChannelMaxMeasurementDuration - 4) </superscript> *
BeaconInterval"
Looks like some sort of formatting directives became text

SuggestedRemedy

delete the extraneous text, and format correctly

Response   *Response Status* **C**

REJECT.
The format in the draft text is defined in SNMP v2 as the correct way to indicate superscripting of characters.

Cl **11k-D12** *SC* **Q**   *P* **181**   *L* **47**   # **4005**

Chaplin, Clint   Individual

Comment Type **TR**   *Comment Status* **R**

"FALSE::= { dot11RRMRequestEntry 36 }" This is the only place where the attribute is explicitly set to FALSE. No other place is this done.

SuggestedRemedy

"::= { dot11RRMRequestEntry 36 }" to delete the FALSE

Response   *Response Status* **C**

REJECT.
We deem this comment to be editorial. This editorial change and any other editorial MIB changes required for error free compilation will be made by the editor prior to publication.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
SORT ORDER: Comment ID

Comment ID # **4005**   2/8/2008 6:19:39 PM

Submission   **Page 5 of 5**   **Joe Kwak, InterDigital**