
IEEE P802.11
Wireless LANs

802.11y Sponsor Ballot Report**Date:** 2007-12-18**Author(s):**

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Abstract

This is the report documenting the results of the WG letter ballots on IEEE P802.11y. This report is to be submitted to the IEEE 802 Executive Committee to support the request to forward IEEE 802.11y to Sponsor Ballot.

1. Introduction and Summary

This is the report to the IEEE 802 Executive Committee documenting all the WG letter ballots of IEEE 802.11y, including voting results, comment statistics, and unresolved negative comments.

The total number of voters on IEEE 802.11y is 347. The final results of the voters on IEEE 802.11y are 271-2-54, for an approval percentage of 99.27%, a return percentage of 94.2%, and an abstain percentage of 16.51%.

There are 25 outstanding negative comments from two of the remaining negative voters; none of these outstanding negative comments are from the latest recirculation ballot, all are previously recirculated resolved negative comments from previous letter ballots.

In addition, there is one new invalid DISAPPROVE voter, discussed below.

Based on results of the letter ballots about P802.11y as documented in this report, we are asking for approval from the IEEE 802 Executive Committee to forward IEEE P802.11y to sponsor ballot.

Agenda Items and motions requesting conditional approval to forward when the prior ballot has closed shall be accompanied by:

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

Letter Ballot 94 was a vote on Draft 1.0, and ran for 40 days starting 12 December 2007, and ending on 7 January 2007.

309 voted, 182 yes, 59 no, 71 abstained, 75.52% approval rate

Letter Ballot 104 was a recirculation vote on Draft 2.0 and resolutions in 11-07-0008-12, and ran for 16 days from 19 April 2007 until 5 May 2007.

324 voted, 221 yes, 41 no, 62 abstained, 84.35% approval rate

Letter Ballot 106 was a recirculation vote on Draft 3.0 and resolutions recorded in 11-07-2019-06, and ran for 15 days from 5 June 2007 until 20 June 2007.

326 voted, 242 yes, 24 no, 60 abstained, 90.98% approval rate

Letter Ballot 109 was a recirculation vote on Draft 4.0 and resolutions recorded in 11-07-2333-07, and ran for 15 days from 6 August 2007 until 21 August 2007.

327 voted, 250 yes, 17 no, 60 abstained, 94.2% approval rate

Letter Ballot 112 was a recirculation vote on Draft 5.0 and resolutions recorded in 11-07-2623-03, and ran for 15 days from 28 September 2007 until 13 October 2007.

327 voted, 257 yes, 11 no, 59 abstained, 95.9% approval rate

Letter Ballot 116 was a recirculation vote on Draft 6.0 and resolutions recorded in 11-07-2945-01, and ran for 15 days from 23 November 2007 until 8 December 2007.

327 voted, 271 yes, 2 no, 54 abstained, 99.27% approval rate

At this time there are two Negative voters, with comments recorded in the comment database.

Note that the resolutions for LB 116 comments have not yet been approved by the WG.

Of the remaining 25 DISAPPROVE comments from all letter ballots, many are non-technical comments marked technical, and many address similar topics.

Thirteen Required Comments on Draft 1.0 from a commenter who did not subsequently vote or respond about LB 94 comment resolutions; in all but one case (Comment 434), the text being commented on was removed or rewritten in subsequent drafts. The majority of LB 94 comments had an issue related with TGn timelines: the extended Channel Switch Announcement text that also appeared in TGn Draft 1.0 (LB 84) and TGv Draft 0.05, and in subsequent events got consolidated into TGy. At the time of LB 94, the TGn Channel Switch Announcement defined another way to change Regulatory Classes, and proponents of that scheme made comments in LB 94 to remove Extended Channel Switching. TGn subsequently changed their definition of Regulatory Classes, and TGn Draft 3.0 refers to the TGy text. There is one remaining LB 94 comment to remove Extended Channel Switch Announcement, from a commenter whose TGn Channel Switch draft text was modified for inclusion in TGy Draft 5.0.

LB	Comment	Accept	Accept in Principle	Reject
94	Technical Required	6	5	3
104		0	0	0
106	Technical Required	1	4	0
109	Technical Required	0	5	0
112	Technical Required	1	0	0
116		0	0	0
	Total	8	14	3

Invalid DISAPPROVE vote on Draft 6.0 recirculation, LB 116

A voter whose previous LB 112 ballot was approve, submitted a DISAPPROVE vote with eight comments (5002-5009), as discussed in submission 11-07/2951r0, and summarized here.

Comments 5002, 5003, 5004, 5007 and 5009 are on editing instructions that were unchanged in the recirculation. Previously approved submission 11-07/2080r2 has correct editing instructions for comments 5002, 5003 and 5004. The TGy editor will adjust the editing instructions that comments 5007 and 5009 refer to.

Comment 5005 is on EDITORIAL NOTES that were unchanged in the recirculation, questioning whether the NOTES correctly state the amendment's baseline of other amendments.

Comment 5006 is on the value of an Order in a table entry that was unchanged in the recirculation. The value of the Order will change when the latest draft of P802.11k is incorporated in the amendment's baseline.

Comment 5008 is about a missing editing instruction in text that was unchanged in the recirculation. Previously approved submission 11-07/2364r2 has the correct editing instruction, and the TGy editor will incorporate it.

The Task Group holds that each of these DISAPPROVE comments is invalid, and consequently the DISAPPROVE vote is invalid.

The working group responses to all of these unsatisfied comments are on the following pages:

Cl 03 SC 3.y1 P9 L12 # 426
 "Palm, Stephen"
 Comment Type TR Comment Status D
 What does "publicly registered" mean?
 SuggestedRemedy
 explain
 Proposed Response Response Status W
 ACCEPT IN PRINCIPLE. Replaced with 'registered STA', meaning there is a registration system than can be used to facilitate interference resolution.

Cl 03 SC 3.y3 P9 L19 # 427
 "Palm, Stephen"
 Comment Type TR Comment Status D
 What does "publicly registered" mean?
 SuggestedRemedy
 explain
 Proposed Response Response Status W
 ACCEPT IN PRINCIPLE. Replaced with 'registered STA', meaning there is a registration system than can be used to facilitate interference resolution.

Cl 03 SC 3.y4 P9 L22 # 428
 "Palm, Stephen"
 Comment Type TR Comment Status D
 "some regulatory domains" contradicts the title that states "in USA". USA has only a single regulatory domain
 SuggestedRemedy
 correct title or definition to be consistant
 Proposed Response Response Status W
 ACCEPT.

Cl 05 SC 5.2.7 P10 L10 # 430
 "Palm, Stephen"
 Comment Type TR Comment Status D
 What is the definie of "cognative radio"?
 SuggestedRemedy
 define
 Proposed Response Response Status W
 ACCEPT IN PRINCIPLE. The sentence being commented on is removed in the rewrite of 5.2.7, now Annex J.2 (07/0271).

Cl 05 SC 5.2.7 P10 L15 # 431
 "Palm, Stephen"
 Comment Type TR Comment Status D
 Is"US" the same as "USA"? If so, the usage should be consistant
 SuggestedRemedy
 Change "US" to "USA"
 Proposed Response Response Status W
 ACCEPT. The comment is applied to Annex J.2 (07/0271).

Cl 05 SC 5.2.7 P10 L26 # 432
 "Palm, Stephen"
 Comment Type TR Comment Status D
 "leading us". Is "us" colloquial or "USA?"
 SuggestedRemedy
 correct title or definition to be consistant
 Proposed Response Response Status W
 ACCEPT IN PRINCIPLE. The sentence being commented on is removed in the rewrite of 5.2.7, now Annex J.2 (07/0271).

CI 05 SC 5.2.7 P10 L32 # 433

"Palm, Stephen"

Comment Type TR Comment Status D

Is the implication of the last clause that *only* 5MHz channels may be used or the 5 MHz may *also* be used?

SuggestedRemedy
clarify

Proposed Response Response Status W

ACCEPT. The 'shalls' in 5.2.7 are being moved to Annex J.2 defining operation in US 3650 MHz band.

CI 05 SC 5.2.7 P10 L9 # 429

"Palm, Stephen"

Comment Type TR Comment Status D

"should have" - is that a recommendation or requirement?

SuggestedRemedy
clarify

Proposed Response Response Status W

ACCEPT IN PRINCIPLE. The sentence being commented on is removed in the rewrite of 5.2.7, now Annex J.2 (07/0271).

CI 07 SC 7.2.3.1 P3 L24 # 2072

Trainin, Solomon

Comment Type TR Comment Status A

As it is stated in the subclause 11.9 of the basic spec "STAs shall use the DFS procedures defined in this subclause if dot11SpectrumManagementRequired is true." The Extended Channel switch functionality is part of the 11.9 definition, so both attributes dot11SpectrumManagementRequiredshoud and dot11ExtendedChannelSwitchImplemented should be mentioned as requirement for the Extended Channel Switch Announcement information element presence. The same comment applies to any appearance of the Extended Channel Switch Announcement in 7.2.3.4 - 7.2.3.9

SuggestedRemedy

The attribute dot11SpectrumManagementRequired enables wide range of features. In the current spec there is no way to separately declare support of them. Clear specification should be provided to allow or disallow separate use of the extended channel switching

Response Response Status W

ACCEPT IN PRINCIPLE. Commenter writes "I would see that the text at the line 24 on page 3 should be changed this way:
The Extended Channel Switch Announcement information element may be present only if dot11ExtendedChannelSwitchImplemented, dot11SpectrumManagementRequired and dot11RegulatoryClassesRequired are true." Will add a normative statement in 11.9.7 "When dot11ExtendedChannelSwitchImplemented is true, dot11MultiDomainCapabilityEnabled, dot11SpectrumManagementRequired and dot11RegulatoryClassesRequired shall be true."

CI 07 SC 7.2.3.1 P3 L27 # 2073
Trainin, Solomon

Comment Type TR Comment Status A

As it is stated in the subclause 11.9 of the basic spec "STAs shall use the DFS procedures defined in this subclause if dot11SpectrumManagementRequired is true." The Supported Regulatory Classes functionality is part of the 11.9 definition, so both attributes dot11SpectrumManagementRequiredshoud and dot11ExtendedChannelSwitchImplemented should be mentioned as requirement for the Supported Regulatory Classes information element presence. The same comment applies to any appearance of the Supported Regulatory Classes in 7.2.3.4 - 7.2.3.9

SuggestedRemedy

The attribute dot11SpectrumManagementRequired enables wide range of features. In the current spec there is no way to separately declare support of them. Clear specification should be provided to allow or disallow separate use of the Supported Regulatory Classes information element.

Response Response Status W

ACCEPT IN PRINCIPLE. Commenter writes "I would see that the text at the line 24 on page 3 should be changed this way:
The Extended Channel Switch Announcement information element may be present only if dot11ExtendedChannelSwitchImplemented, dot11SpectrumManagementRequired and dot11RegulatoryClassesRequired are true." Will add a normative statement in 11.9.7 "When dot11ExtendedChannelSwitchImplemented is true, dot11MultiDomainCapabilityEnabled, dot11SpectrumManagementRequired and dot11RegulatoryClassesRequired shall be true."

CI 07 SC 7.3.2.36 P16 L10 # 437
"Palm, Stephen"

Comment Type TR Comment Status D

As this line is not a sentence, "meter" shall not be capitalized. See http://www.bipm.fr/en/si/si_brochure/chapter5/5-2.html

SuggestedRemedy

Fix capitalization

Proposed Response Response Status W

ACCEPT. The definition in IETF RFC 3825 is unchanged by 802.11y, therefore this line is deleted.

CI 07 SC 7.3.2.36 P16 L11 # 436
"Palm, Stephen"

Comment Type TR Comment Status D

What are "floors"?

SuggestedRemedy

Define

Proposed Response Response Status W

REJECT. IETF RFC 3825 is the normative reference, and Floors is defined with respect to Datum therein. The definition in IETF RFC 3825 is unchanged by 802.11y, therefore the definition is removed.

CI 07 SC 7.3.2.36 P16 L12 # 438
"Palm, Stephen"

Comment Type TR Comment Status D

As the word is not at the beginning of a sentence, "meter" shall not be capitalized. See http://www.bipm.fr/en/si/si_brochure/chapter5/5-2.html

SuggestedRemedy

Fix capitalization

Proposed Response Response Status W

ACCEPT.

CI 07 SC 7.3.2.36 P16 L6 # 435
"Palm, Stephen"

Comment Type TR Comment Status D

Which one has the definitions, the reference or this document.

SuggestedRemedy

Clarify

Proposed Response Response Status W

ACCEPT. Clause 2 states Normative Reference for RFC 3825, and will change "2.1 or as" to "2.1 except as".

CI 07 SC 7.4.1.6 P13 L4 # 655

"Trainin, Solomon"

Comment Type TR Comment Status R

There is no need for additional Extended Channel Switch Announcement frame. The new Extended Channel Switch Information Element may be contained in the existent Channel Switch Announcement frame

SuggestedRemedy

Remove the Extended Channel Switch Announcement frame.

Response Response Status W

REJECT. The REV-ma Channel Switch Announcement element has a length of 5 octets, and legacy stations would have unspecified behavior if the element indicated a length other than 3. There is no backward compatibility with TGh stations in this band, and only the ECSA is used.

CI 09 SC 9.8.3 P13 L12 # 2074

Trainin, Solomon

Comment Type TR Comment Status A

As it is stated in "When dot11RegulatoryClassesImplemented is true and dot11LCIDSERequired is true, the following statements apply:" the defined rules applies to the STA that enables the Dependent Station Enablement procedures only. It seems that the rules may be useful for any station that operates with regulatory classes

SuggestedRemedy

Extend the rules for any station that operates with regulatory classes

Response Response Status W

ACCEPT.

CI 09 SC 9.8.3 P18 L45 # 3180

Trainin, Solomon

Comment Type TR Comment Status X

The rule that mandates including the Country Information and SupportedRegulatoryClasses elements in Association and Re-association frames when dot11RegulatoryClassesRequired is true contradicts the basic IEEE 802.11-2007 spec. This rule makes incompliant the legacy STAs that are compliant with the IEEE 802.11-2007 spec. This change breaks backward compatibility of the specification.

SuggestedRemedy

Remove the paragraph:
"When dot11RegulatoryClassesRequired is true and a STA is capable of operating as specified in more than one Regulatory Class, the STA shall include the Country Information and SupportedRegulatoryClasses elements in Association frames and Reassociation frames;"

Proposed Response Response Status W

ACCEPT IN PRINCIPLE. Will delete 'Country Information and' from the third statement of 9.8.3.

CI 09 SC 9.8.3 P19 L46 # 4043

Trainin, Solomon

Comment Type TR Comment Status X

The rule that mandates including the SupportedRegulatoryClasses elements in Association and Re-association frames when dot11RegulatoryClassesRequired is true contradicts the basic IEEE 802.11-2007 spec. This rule makes incompliant the legacy STAs that are compliant with the IEEE 802.11-2007 spec. This change breaks backward compatibility of the specification.

SuggestedRemedy

Add other qualifier like support of ECSA as a condition to include the SupportedRegulatoryClasses elements in Association frames and Reassociation frames

OR

make the condition of including the SupportedRegulatoryClasses elements in Association frames and Reassociation frames dependent on the support of ECSA only

Proposed Response Response Status W

ACCEPT. Will rewrite third rule of 9.8.3 and rules of 9.8.4 to include condition that dot11ExtendedChannelSwitchEnabled is true.

CI 11 SC 11.9.7 P36 L34 # 3177

Trainin, Solomon

Comment Type TR Comment Status X

"When dot11ExtendedChannelSwitchImplemented is true, dot11MultiDomainCapabilityEnabled, dot11SpectrumManagementRequired and dot11RegulatoryClassesRequired shall be true" The current solution mandates that STA that wants to support the ECSA shall support the entire TPC and DFS. In case there is no need to follow the regulations for example in 2.4GHz band the channel switching may be still important as in .11n. The definition of ECSA should allow using it separately and as an extension of DFS as well.

SuggestedRemedy

Separate the definition of ECSA from the DFS. Define rules of use it separately w/o support of the Spectrum management. Define rules to allow using ECSA together with Spectrum management

Proposed Response Response Status W

ACCEPT IN PRINCIPLE. Text will be rewritten to have implicit use of ECSA in US 3650 band, regardless of association, and explicit and advertised in the Extended Capabilities IE, independent of dot11SpectrumManagementRequired. The rules will make no distinction whether dot11SpectrumManagementImplemented is true or false.

CI 11 SC 11.9.7.1 P24 L23 # 2075

Trainin, Solomon

Comment Type TR Comment Status A

Using of an Extended Channel Switch Announcement element and frame and a Channel Switch Announcement element and frame actually will present the same information so it is not clear why the use of the Extended Channel Switch Announcement element and frame is mandated. The same comment applies to 11.9.7.2

SuggestedRemedy

Explain clearly when each of the information elements and frames should be used and why

Response Response Status W

ACCEPT IN PRINCIPLE. The change in regulatory class is the information that differs between ECSA and CSA. The only cases where regulatory class is changed and both ECSA and CSA are sent, are when the requirements signified by the new regulatory class are met by all STAs that act on the Channel Switch Announcement.

CI 11 SC 11.9.7.1 P24 L38 # 2076

Trainin, Solomon

Comment Type TR Comment Status A

Paragraph that starts at line 38 does not define behavior of the Extended Channel Switch Announcement element

SuggestedRemedy

Define behavior for the Extended Channel Switch Announcement element

Response Response Status W

ACCEPT IN PRINCIPLE. Will change initial text of second paragraph to "In the following text:" and make corresponding change to 11.9.7.2. Commenter writes "add the following text before paragraph the starts with "An AP shall inform associated STAs":

In the following text, wherever Channel Switch Announcement is referred to both the Extended Channel Switch Announcement and Channel Switch Announcement should be used as defined in 1) and 2)".

CI 11 SC 11.9.7.1 P36 L53 # 3176

Trainin, Solomon

Comment Type TR Comment Status X

The CSA is not optimized and contains substantial limitation for switching between regulatory classes. Due to support of ECSA is important for legacy stations that are associated in BSS that uses ECSA. For example the .11n compliant BSS may associate non .11n compliant STA as well. Support of Extended Channel Switching may be implemented as SW upgrade in the legacy STA. To make the support of ECSA in the legacy STA visible to other STA the ECSA capability should be signaled.

This comment is relevant for behavior of DFS owner in 11.9.7.2 as well

SuggestedRemedy

Add the ECSA capability field to the Extended Capabilities information element

Proposed Response Response Status w

ACCEPT IN PRINCIPLE. Extended Capabilities text will be based on 07/2326r2 7.3.2.27, pages 9 and 10, modified to meet 11y baseline, which excludes HT.

Cl 11 SC 11.9.7.1 P36 L53 # 3178
Trainin, Solomon

Comment Type TR Comment Status X

The definition is contradictory: If the CSA cannot be used for switching to new channel in a different regulatory class how to use both. If the CSA can be used for switching to a new channel there is no need to mandate the ECSA. If the CSA cannot be used the ECSA shall be used instead. So the problem is how to know that the ECSA is supported in the cases the CSA cannot be used.

This comment is relevant for behavior of DFS owner in 11.9.7.2 as well

SuggestedRemedy

Define use of ECSA as function of the ECSA capability. Define this capability as implicit in some kind of networks like TGn or explicit and advertised in ECSA capability field

Proposed Response Response Status W

ACCEPT IN PRINCIPLE. Text will be rewritten to have implicit use of ECSA in US 3650 band, regardless of association, and explicit and advertised in the Extended Capabilities IE. CSA cannot be used when changing Regulatory Class unless all STAs that act on the CSA meet the requirements signified by the new Regulatory Class. There is no contradiction, the AP knows from (re)Association frames whether STAs can do ECSA, and may attempt to switch channels with both ECSA and CSA if the AP expects the legacy STAs to be able to operate on the new channel and RC.

Cl 11 SC 11.9.7.1 P36 L58 # 3179
Trainin, Solomon

Comment Type TR Comment Status X

The AP knows dot11ExtendedChannelSwitchImplemented value of itself, but no means are defined to know state of the dot11ExtendedChannelSwitchImplemented of other stations. It may happen that no one of the associated stations does support the Extended Channel switching.

This comment is relevant for behavior of DFS owner in 11.9.7.2 as well

SuggestedRemedy

Define advertising of the Extended Channel switching support. Define ECSA capability field to allow upgrade of the legacy stations to support ECSA. Define the AP behavior to cover associated stations that part of them supports and part does not support ECSA.

Proposed Response Response Status W

ACCEPT IN PRINCIPLE. The AP knows from (re)Association frames whether STAs support ECSA and Supported Regulatory Classes. We define advertising ECSA via Supported Regulatory Classes and will add an Extended Capabilities indication field.

Cl A SC A.4.17 P48 L5 # 434
"Palm, Stephen"

Comment Type TR Comment Status D

This clause does not have explanatory text

SuggestedRemedy

Add text to introduce the clause

Proposed Response Response Status W

REJECT. In REV-ma Annex A.4, none of the prior clauses have explanatory text.