Cl **00** *SC* *P* *L* # 62
PONNUSWAMY, SUBBURAJAN Individual

Comment Type **G** *Comment Status* **R**
all Action frames, whether sent in State

SuggestedRemedy

Response *Response Status* **C**
REJECT. Entry error on web form.

Cl **00** *SC* *P* *L* # 83
KLEINDL, GUNTER Individual

Comment Type **TR** *Comment Status* **R** *amendments*
With this revision the definition of 11a, 11b and 11g get lost.

SuggestedRemedy
Indicate in the PICS (Annex A) which items are mandatory for 11a, 11b and 11g.

Response *Response Status* **U**
REJECT. The designations of each amendment are ephemeral and cease to exist when the revision is approved. IEEE-SA procedure does not allow for these designations to continue to be used in the standard.

Cl **00** *SC* *P* *L* # 61
PONNUSWAMY, SUBBURAJAN Individual

Comment Type **G** *Comment Status* **R**
Now, and prior to the introduction of TGw

SuggestedRemedy

Response *Response Status* **C**
REJECT. Entry error on web form.

Cl **00** *SC* *P* *L* # 107
CHAPLIN, CLINT F Individual

Comment Type **G** *Comment Status* **A**
No line numbers

SuggestedRemedy
Put in line numbers, please

Response *Response Status* **C**
ACCEPT.

Editor included in draft 5.2.

Cl **00** *SC* *P* *L* # 110
CHAPLIN, CLINT F Individual

Comment Type **TR** *Comment Status* **A** *11e*
IEEE 802.11e should be included in this roll-up. (I realize that it probably would have been anyway, but I wanted to make sure).

SuggestedRemedy
Include IEEE 802.11e

Response *Response Status* **U**
ACCEPT.

Editor included in draft 5.1 by adding 802.11e.

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COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn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: Clause, Subclause, page, line

Cl **00**
SC

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Submission **Bob O'Hara, Cisco Systems**

Cl **00**	*SC*	*P*	*L*	#	20

COORDINATION, SCC14

Comment Type   **GR**   *Comment Status*   **A**

In the early pages (!) of this document there is a large section devoted to definitions. However, it does not include definitions of "byte" and "octet". In some standards the two terms are synonymous, but in this standard the terms are used and are not synonyms. Please add the two definitions.

SuggestedRemedy

Response   *Response Status*   **U**

ACCEPT IN PRINCIPLE. All uses of "byte" the the text are synonymous with "octet". Replace all occurrences of "byte" with "octet", except in the C code in Annex H.

Editor included in draft 5.2 by changes in 7.3.2.29, 7.3.2.33, 9.9.3.2, 11.2.1.4, 15.2.3.5, 15.2.3.6, 15.2.3.7, 15.4.8.2, 15.4.8.2, 15.4.8.3, 17.3.10.1, 17.3.10.2, 17.3.30.3, 17.3.10.4, 17.3.12, 19.5,1, 19.5.2, 19.5.3, and K.3.3.1.

Editor did not change C code in 8.2.3.5.1, 18.2 Figure 271, and pseudo code in H.5.1.

In H.5.1:
1. replace "preferable" with "preferably",
2. replace "lowest byte of time" with "least significant octet of the timestamp" in three locations,
3. replace "packet is seen" with "packet is received",
4. replace "concatenate the seen time" with "concatenate this octet",
5. replace "take the lowest byte of RSSI" with "take the least significant octet of RSSI",
6. replace "concatenate the sent time, received time, RSSI, and Snonce" with concatenate the sent time, received time, RSSI, and SNonce octets"

Editor included in draft 5.2 in H.5.1.

Cl **00**	*SC*	*P*	*L*	#	111

CHAPLIN, CLINT F   Individual

Comment Type   **TR**   *Comment Status*   **A**

The term "AAA Key" is being deprecated within the IETF. As a consequence, the use of that term in this standard needs to be changed to a replacement term. The term suggested by the IETF is "MSK"

SuggestedRemedy

Replace all instances of "AAA Key" to "MSK. Change the definition of "AAA Key" to define "MSK". Add an entry for "MSK" to the acronym section.

Response   *Response Status*   **U**

ACCEPT.

Replace all "AAA Key" occurrences with "MSK". Add the acronym "MSK" to clause 3.

Add the definition of MSK as follows to clause 3.

Master Session Key (MSK): The Master Session Key is keying material that is derived between the EAP peer and exported by the EAP method to the NAS. The MSK is at least 64 octets in length.

Editor included in draft 5.2, by deleting 3.10 and adding 3.80, deleting AAA abbreviation in clause 4, and adding abbreviations for MSK in clause 4. Editor used AS instead of NAS.

Editor in draft 5.2 by expunging AAA key term in favor of MSK, by introducing the new term in 8.4.6.1, and using it in 8.4.8, 8.5.1.2, 8.5.6.3.

Cl **00**	*SC*	*P*	*L*	#	55

PONNUSWAMY, SUBBURAJAN   Individual

Comment Type   **G**   *Comment Status*   **R**

802.11 to support Action frames in

SuggestedRemedy

Response   *Response Status*   **C**

REJECT. Entry error on web form.

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: Clause, Subclause, page, line

Cl **00**
SC

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Submission   **Bob O'Hara, Cisco Systems**

Cl **00** *SC* *P* *L* # 3
COORDINATION, EDITORIAL

Comment Type **ER** *Comment Status* **A**
Good to go, Section 1 comments have been addressed.
-Mike Fisher, IEEE Staff Editor

SuggestedRemedy

Response *Response Status* **U**
ACCEPT.

No editor action required.

Cl **00** *SC* *P* *L* # 19
WORSTELL, HARRY R Individual

Comment Type **TR** *Comment Status* **A** *11e*
This ballot does not contain the 802.11e ammendment and should include it. I vote NO.

SuggestedRemedy
Include 802.11e in the rollup

Response *Response Status* **U**
ACCEPT.

Editor included in draft 5.1 by adding 802.11e.

Cl **00** *SC* *P* *L* # 60
PONNUSWAMY, SUBBURAJAN Individual

Comment Type **G** *Comment Status* **R**
applications which use this capability.

SuggestedRemedy
vi) Spectrum Management Action

Response *Response Status* **C**
REJECT. Entry error on web form.

Cl **00** *SC* *P* *L* # 59
PONNUSWAMY, SUBBURAJAN Individual

Comment Type **G** *Comment Status* **R**
more reason to keep it, as there may be

SuggestedRemedy
To

Response *Response Status* **C**
REJECT. Entry error on web form.

Cl **00** *SC* *P* *L* # 58
PONNUSWAMY, SUBBURAJAN Individual

Comment Type **G** *Comment Status* **R**
Yes, this is a unique capability, all the

SuggestedRemedy
Within an IBSS, action frames are class 1.

Response *Response Status* **C**
REJECT. Entry error on web form.

Cl **00** *SC* *P* *L* # 57
PONNUSWAMY, SUBBURAJAN Individual

Comment Type **G** *Comment Status* **R**
TGh, and should remain in the standard.

SuggestedRemedy

Response *Response Status* **C**
REJECT. Entry error on web form.

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: Clause, Subclause, page, line

Cl **00**
SC

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Submission **Bob O'Hara, Cisco Systems**

Cl **00**   *SC*   *P*   *L*   # 56
PONNUSWAMY, SUBBURAJAN   Individual

Comment Type **G**   *Comment Status* **R**
     State 1. This capability was added by

SuggestedRemedy
     vi) Action

Response   *Response Status* **C**
     REJECT. Entry error on web form.

Cl **00**   *SC*   *P*   *L*   # 63
PONNUSWAMY, SUBBURAJAN   Individual

Comment Type **G**   *Comment Status* **R**
     1 or State 3 are unprotected

SuggestedRemedy

Response   *Response Status* **C**
     REJECT. Entry error on web form.

Cl **00**   *SC*   *P*   *L*   # 304
AMANN, KEITH   Individual

Comment Type **TR**   *Comment Status* **A**   *11e*
     802.11e recently completed sponsor ballot and was approved. My understanding is that if this standard revision does not incorporate 802.11e then the 802.11e standard can be lost. I believe this would be a significant error on the part of the IEEE, and that it would seriously set the standard back.

SuggestedRemedy
     Update the draft to incorporate the 802.11e standard as recently approved by the IEEE sponsor ballot process.

Response   *Response Status* **U**
     ACCEPT.

     Editor included in draft 5.1 by adding 802.11e.

Cl **00**   *SC*   *P* **565**   *L*   # 80
MORETON, MIKE   Individual

Comment Type **TR**   *Comment Status* **R**   *amendments*
     It's no longer possible to identify which PICS items were introduced in which ammendment. As users of this standard tend to identify functionality by the name of the ammendment that introduced it, this is a bit of a problem.

SuggestedRemedy
     Add definitions of "802.11a", "802.11b" etc.

Response   *Response Status* **U**
     REJECT. See the resolution to comment ID 83.

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: Clause, Subclause, page, line

Cl **00**
SC

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Submission   **Bob O'Hara, Cisco Systems**

Cl **00**   *SC* **Annex C**   *P* **619**   *L*   # 233

FISCHER, MICHAEL A   Individual

Comment Type   **G**   *Comment Status*   **R**

Annex C is badly in need of a major update that incorporates the additions and changes to the MAC since 1999, as well as corrections to the errors and omissions that have been found in the 1999 version. Furthermore, the description in Annex C uses SDL-92, whereas the current version of ITU-T Recommendation Z.100 is SDL-2004. In between SDL-92 and SDL-2004 there has been one major revision and two maintenance revisions, so the descriptive notation is also in need of significant updating. (In particular, the description of the handling of management frames is accomplished using SDL-92 "Services" which have were eliminated from the language starting with SDL-2000.)

SuggestedRemedy

Update Annex C to describe the current MAC using SDL-2004 notation. This commenter, who was the author of the existing Annex C, is willing to participate in this update, but cannot volunteer to do the entire task by himself.

Response   *Response Status*   **C**

REJECT.

The annex no longer has source files for the SDL. It would require significant work to begin from scratch, rather than to update. The annex does have value in its current form, if the reader of the standard is aware of the limitations of the annex. Therefore, the following changes are made.

Below the annex title, change "normative" to "informative".

Before the subtitle, insert "This clause is no longer maintained and may not be compatible with or describe all features of this standard."

Replace "Formal description of MAC operation" with "Formal description of a subset of MAC operation" in the subtitle of the Annex.

In the first sentence of the annex, insert "of a subset" between "formal descriptions" and "of the behavior".

Cl **00**   *SC* **Annex D**   *P* **868**   *L*   # 93

ECCLESINE, PETER   Individual

Comment Type   **TR**   *Comment Status*   **A**   *mib*

dot11TIThreshold object is not used in clause 17 CCA

SuggestedRemedy

deprecate dot11TIThreshold

Response   *Response Status*   **U**

ACCEPT.

Editor included in draft 5.2 by changing definition in Annex D of dot11PhyOFDMEntry 2.

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: Clause, Subclause, page, line

Cl **00**
SC **Annex D**

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Submission

Bob O'Hara, Cisco Systems

Cl **00**   *SC* **Annex D**   *P* **868**   *L*   # 95
ECCLESINE, PETER   Individual

Comment Type   **TR**   *Comment Status* **A**   *mib*

dot11FrequencyBandsSupported should remove unnecessary Country information and just specify frequency bands. It is redundant to have CEPT mid-band and US mid-band bits.

SuggestedRemedy

Change description to ""The capability of the OFDM PHY implementation to operate in the 4.9 GHz and 5 GHz
bands. Coded as an integer value with bit 0 LSB as follows:
bit 0 .. capable of operating in the 5.15-5.25 GHz band
bit 1 .. capable of operating in the 5.25-5.35 GHz band
bit 2 .. capable of operating in the 5.725-5.825 GHz band
bit 3 .. capable of operating in the 5.47-5.725 GHz band
bit 4 .. capable of operating in the lower Japanese (5.15-5.25 GHz) band
bit 5 .. capable of operating in the 5.0 GHz band
bit 6 .. capable of operating in the 4.9 GHz band
For example, for an implementation capable of operating in the
5.15-5.35 GHz bands this attribute would take the value 3."

Response   *Response Status* **U**

ACCEPT.

Change description to ""The capability of the OFDM PHY implementation to operate in the 4.9 GHz and 5 GHz
bands. Coded as an integer value with bit 0 LSB as follows:
bit 0 .. capable of operating in the 5.15-5.25 GHz band
bit 1 .. capable of operating in the 5.25-5.35 GHz band
bit 2 .. capable of operating in the 5.725-5.825 GHz band
bit 3 .. capable of operating in the 5.47-5.725 GHz band
bit 4 .. capable of operating in the lower Japanese (5.15-5.25 GHz) band
bit 5 .. capable of operating in the 5.03-5.091 GHz band
bit 6 .. capable of operating in the 4.94-4.99 GHz band
For example, for an implementation capable of operating in the
5.15-5.35 GHz bands this attribute would take the value 3."

Editor included in draft 5.2 by modifying the definition in Annex D of dot11PhyOFDMEntry 3.

Cl **00**   *SC* **Annex D**   *P* **868**   *L*   # 94
ECCLESINE, PETER   Individual

Comment Type   **TR**   *Comment Status* **A**   *mib*

dot11FrequencyBandsSupported does not scale across 4.9-6 GHz uses of the OFDM PHY. It combines both frequency information and regulatory information.

SuggestedRemedy

Resolve or deprecate dot11FrequencyBandsSupported

Response   *Response Status* **U**

ACCEPT. See the resolution to comment # 95.

Cl **00**   *SC* **Annex D**   *P* **868**   *L*   # 96
ECCLESINE, PETER   Individual

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

dot11FrequencyBandsSupported should have an entry for US 15.247 channels

SuggestedRemedy

Change SYNTAX INTEGER (1,127) to (1,255) and change the integer, adding: bit 7 .. Capable of operating in the 5.725-5.850 GHz band

Response   *Response Status* **C**

REJECT. The proposed change would create potential interoperability problems between a management entity compliant to the original definition and a STA compliant to this new definition.

Cl **00**   *SC* **Annex I**   *P* **960**   *L*   # 297
INOUE, YASUHIKO   Individual

Comment Type   **G**   *Comment Status* **R**

5.25-5.35 GHz frequency band is now available in Japan.

SuggestedRemedy

Please update the table.

Response   *Response Status* **C**

REJECT.

It is believed that the contents of the tables in Annex I are complete and up to date. The commenter is requested to provide more specific changes to correct these tables. Are there additional regulations that should be cited in these tables?

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: Clause, Subclause, page, line

Cl **00**
SC **Annex I**

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Submission   **Bob O'Hara, Cisco Systems**

Cl **00**   *SC* **Annex J**   *P* **965**   *L*   # 104
BUTTAR, ALISTAIR G   Individual

Comment Type   **TR**   *Comment Status* **A**   *4.9*
*** Comment submitted with the file 676700024-11-05-1121-01-000m-modifications-to-802.11ma-regarding-4.9ghz-band.doc attached ***
Normative text for Public Safety US band

SuggestedRemedy
Per attached document 05/1121r1

Response   *Response Status* **U**
ACCEPT. See the resolution to comment #103.

Cl **00**   *SC* **Annex J**   *P* **965**   *L*   # 103
BUTTAR, ALISTAIR G   Individual

Comment Type   **TR**   *Comment Status* **A**   *4.9*
Modification required for the 4.9GHz public safety band in the USA and the use of 5MHz channels (1/4 clock) in this band both in the US and Japan

SuggestedRemedy
All the necessary changes are provided in the following document: IEEE 802.11-05/1121r1

Response   *Response Status* **U**
ACCEPT.

Editor included in draft 5.2.

Cl **00**   *SC* **Annex J**   *P* **966**   *L*   # 298
INOUE, YASUHIKO   Individual

Comment Type   **G**   *Comment Status* **R**
I hope the Table J.3 to be modified based on current regulation.

SuggestedRemedy

Response   *Response Status* **C**
REJECT.

The commenter is asked to provide specific changes to the tables in Annex J to become current with Japanese regulations. The suggested remedy does not provide sufficient guidance to resolve this comment.

Cl **00**   *SC* **D**   *P* **874**   *L* **1**   # 102
O'HARA, ROBERT   Individual

Comment Type   **T**   *Comment Status* **A**   *mib*
In the dot11Compliance section of the MIB, on page 873/top 874, it makes reference to dot11SMTbase4 (which is marked deprecated).

SuggestedRemedy
It should probably be dot11SMTbase5.

Response   *Response Status* **C**
ACCEPT.

Editor included in draft 5.1 in Annex D by the definition of dot11Compliance MODULE-COMPLIANCE. It was changed to dot11SMTbase6.

Cl **00**   *SC* **Figure 51**   *P* **86**   *L*   # 87
ECCLESINE, PETER   Individual

Comment Type   **E**   *Comment Status* **A**
Figure 51 does not show all cases correctly, e.g. where dot11RegulatoryClassesRequired is false

SuggestedRemedy
Change Figure 51 as shown in attachment, so that all cases are shown

Response   *Response Status* **C**
ACCEPT.

Editor included in draft 5.2 by changing Figure 64 in 7.3.2.9.

Cl **00**   *SC* **Generally**   *P*   *L*   # 9
STEPHENS, ADRIAN P   Individual

Comment Type   **E**   *Comment Status* **A**
There are no line numbers

SuggestedRemedy
Add them

Response   *Response Status* **C**
ACCEPT.

Editor included in draft 5.2.

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: Clause, Subclause, page, line

Cl **00**
SC **Generally**

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Submission   **Bob O'Hara, Cisco Systems**

Cl **00**   *SC* **M**   *P*   *L*   # 71

MYLES, ANDREW F   Individual

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

This annex allegedly provides an AP functional description
However, in reality it has very limited value given that it is mostly content free and almost
totally disconnected from implementation reality. The use of a large number of new terms
and the semi-formal specification language only increases its obscurity.

SuggestedRemedy

Remove entire annex

Response   *Response Status*   **U**

REJECT. The material in the annex does provide useful information to readers new to the
standard, to understand the function and description of an AP, without providing normative
requirements.

Cl **00**   *SC* **N**   *P*   *L*   # 72

MYLES, ANDREW F   Individual

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

There is little obvious value in this annex

SuggestedRemedy

Remove entire annex

Response   *Response Status*   **U**

REJECT. The material in the annex does provide useful information to readers new to the
standard, to understand the function and description of an AP, without providing normative
requirements.

Cl **00**   *SC* **N & M**   *P*   *L*   # 7

STEPHENS, ADRIAN P   Individual

Comment Type   **ER**   *Comment Status*   **A**

There is confusion between these two annexes as to exactly what an AP is. Annex N
provides no means for an AP to discover about mapping changes from the DS. Annex M
says that this is possible.

SuggestedRemedy

There probably needs to be a new DS-STA-NOTIFY.request (from DS to AP) to provide
this communication. Alternatively the use of terms like AP needs to be clarified (i.e. in M it
includes the DS, in N they are called out separately).

Response   *Response Status*   **U**

ACCEPT IN PRINCIPLE.

It is a fact that Annex N does not provide a means for an AP to discover
about mapping changes from the DS. Annex M says that "an AP may also receive access
control updates from other APs in the form of inter-access point notifications of MU
association events and transitions". That inter-access point notification is accomplished via
protocol messages, not via the DS SAP.
Those protocol messages are initiated via the IAPP SAP, which is defined in
802.11F.

--begin detailed explanation--
The AP has knowledge of which MUs (mobile STAs) are associated (locally).
The AP informs the DS of such updates so that the DS can forward MSDUs
destined for that MU to the correct AP. The DS has no knowledge of the entities for which
it is distributing MSDUs. For example, an AP may choose to notify the DS about the AP
itself (i.e. the ACM_STA), so that MSDUs destined for that AP's SME can be properly
delivered by the DS.

In the mobility scenario, the MU is associated with an old AP, and that
AP will have notified the DS of the MU's AP (the old AP). When the MU transitions to a
new AP, the new AP notifies the DS of the MU's AP (now the new AP).

This immediately causes new MSDUs that are destined for that MU (that are
received by the DS) to be forwarded to the new AP.

The remaining issue is the dangling association status at the old AP.
The old AP has no way to know that the MU has transitioned to a new AP.
While this does not affect new outbound traffic destined for the MU, there
is the issue of queued data at the old AP. The old AP will continue to attempt
to transmit this queued data until the max retry limit has been exceeded. As this happens
the old AP will then discard the MSDUs one-by-one. Eventually the old AP will timeout the
MU's association status.

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: Clause, Subclause, page, line

Cl **00**
SC **N & M**

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Submission   **Bob O'Hara, Cisco Systems**

If the MU transitioned to the new AP using a reassociate frame then early
teardown of the MU's association status at the old AP is possible. This early teardown (as
defined in 802.11F) is accomplished by a direct AP-to-AP communication from the new AP
to the old AP, in effect saying "I have this MU now, you can discard the MU's context
information along with any queued MSDUs and MPDUs".

In contrast, the DS needs to keep track of the minimal info it needs to
distribute MSDUs, and the old AP might or might not benefit from knowing that the
association is dead. (Keep in mind that the MU could conceivably have disassociated, or
might do a new association rather than a reassociation.)
So the AP-to-AP update is only handy (not compulsory). The AP-to-DS update is
necessary to proper functioning of the WLAN system. Therefore separate
mechanisms, and therefore different primitives. (Although the IAPP SAP needs something
like the DS to work, it does not need the DS -- for example, in a WLAN switch the IAPP
SAP can exist out-of-band of the DS).

So, Annex N is correct and complete wrt the DS SAP interface primitives.
Annex M is correct wrt the functions of the AP. And 802.11F is correct wrt the IAPP
functions.
--end detailed explanation--

Early draft text for Annex M clause M.4 contained a reference to 802.11F
wrt the AP-to-AP communication needed to support early teardown of the MU's
association status at the old AP. The text describing that specific use case scenario was
removed in response to a comment on an earlier draft of 802.11ma. (see the Primary AP
Functions section of doc 5/120r9 for the original Annex M text, which cites the specific
IAPP SAP primitives that define this functionality and cause the corresponding protocol
messages to be sent).

In response to the last line of the Suggested Remedy, Annex M does not indicate that an
AP includes the DS, they are separate entities and are described individually. Annex M
does point out that it is possible to combine
an AP and a DS into a single unit called an Access Unit, but that's just
one possible product instantiation.

Editor: In clause M.4 change
Change
"An AP may also receive access control updates from other APs in the form
of inter-access point notifications of MU association events and transitions."
to
"An AP may also receive access control updates directly from other APs, via
a protocol outside the scope of this standard, in the form of inter-access
point notifications of MU association events and transitions."

Editor included in draft 5.2 by adding to N.4.

Cl **01**   *SC* **1.1**   *P* **1**   *L* **1**   # 112
FISCHER, MICHAEL A   Individual

Comment Type   **G**   *Comment Status*   **A**
This scope statement was appropriate for the scope of the standards development project
that produced the original 802.11 standard, but not for a roll-up of approved amendments
to an approved standard.

SuggestedRemedy
Replace the existing sentence with "The scope of this standard is to define one medium
access control (MAC) and several physical layer (PHY) specifications for wireless
connectivity for fixed, portable, and moving stations within a local area.

Response   *Response Status*   **C**
ACCEPT.

Editor included in draft 5.2 by modifying 1.1.

Cl **02**   *SC* **2**   *P* **3**   *L*   # 39
O'HARA, ROBERT   Individual

Comment Type   **E**   *Comment Status*   **A**
IEEE Std 802-1990 should be -2001.

SuggestedRemedy
Change to IEEE Std 802-2001.

Response   *Response Status*   **C**
ACCEPT.

Editor included in draft 5.2 by modifying clause 2.

Cl **02**   *SC* **2**   *P* **3**   *L*   # 36
O'HARA, ROBERT   Individual

Comment Type   **G**   *Comment Status*   **A**
Old citation for IEEE 802.1X dating from when it was a draft.

SuggestedRemedy
IEEE P802.1X-2004 citation should remove the "P" and change the name to the official
name (no draft!): "IEEE Standard for Local and Metropolitan Area Networks: Port-Based
Network Access Control".

Response   *Response Status*   **C**
ACCEPT.

Editor included in draft 5.2 by modifying clause 2.

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: Clause, Subclause, page, line

Cl **02**
SC **2**

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Submission   **Bob O'Hara, Cisco Systems**

Cl **02**   *SC* **2**   *P* **3**   *L*   # 35
O'HARA, ROBERT   Individual

Comment Type   **G**   *Comment Status*   **A**

Many of the RFCs cited here are in fact not IETF standards (nor are they even standards-track documents), but are informational documents, yet they are cited here as "normative" references.

SuggestedRemedy

Use the citation format from the RFC index, which has the standardization status as part of the citation.

Response   *Response Status*   **C**

ACCEPT.

The following was found by the editor at http://www.faqs.org/rfcs/rfc-index.html.

1321 The MD5 Message-Digest Algorithm. R. Rivest. April 1992. (Format: TXT=35222 bytes) (Status: INFORMATIONAL).

1750 -- see comment #37

2104 HMAC: Keyed-Hashing for Message Authentication. H. Krawczyk, M. Bellare, R. Canetti. February 1997. (Format: TXT=22297 bytes) (Status: INFORMATIONAL)

2202 Test Cases for HMAC-MD5 and HMAC-SHA-1. P. Cheng, R. Glenn. September 1997. (Format: TXT=11945 bytes) (Status: INFORMATIONAL)

3394 Advanced Encryption Standard (AES) Key Wrap Algorithm. J. Schaad, R. Housley. September 2002. (Format: TXT=73072 bytes) (Status: INFORMATIONAL)

3610 Counter with CBC-MAC (CCM). D. Whiting, R. Housley, N. Ferguson. September 2003. (Format: TXT=64509 bytes) (Status: INFORMATIONAL)

3748 Extensible Authentication Protocol (EAP). B. Aboba, L. Blunk, J. Vollbrecht, J. Carlson, H. Levkowetz, Ed.. June 2004. (Format: TXT=157994 bytes) (Obsoletes RFC2284) (Status: PROPOSED STANDARD)

4017 see comment #38.

The editor included in draft 5.2 each of the following:
Modified Clause 2 to reflect the above information for RFC 1321, 2104, 3394, 3610, 3748, 4017.

Moved RFC 1750, 2202 from Clause 2 to Annex E because they are not normatively referenced by normative text.

Cl **02**   *SC* **2**   *P* **3**   *L*   # 37
O'HARA, ROBERT   Individual

Comment Type   **T**   *Comment Status*   **A**

RFC 4086 obsoleted RFC 1750 (it still has the same title).

SuggestedRemedy

Change RFC 1750 to RFC 4086.

Response   *Response Status*   **C**

ACCEPT. Include correct date in citation.

As part of the editor's action, this entry was determined to not be normatively referenced in normative text.

The publication date was determined from http://www.faqs.org/rfcs/rfc-index.html

4086 Randomness Requirements for Security. D. Eastlake, 3rd, J. Schiller, S. Crocker. June 2005. (Format: TXT=114321 bytes) (Obsoletes RFC1750) (Also BCP0106) (Status: BEST CURRENT PRACTICE)

Editor included in draft 5.2 by modifying clause 2, Annex B and H.5.

Cl **02**   *SC* **2**   *P* **3**   *L*   # 38
O'HARA, ROBERT   Individual

Comment Type   **T**   *Comment Status*   **A**

Citation for RFC 4017 has inaccurate title.

SuggestedRemedy

Change title of RFC 4017 to "Extensible Authentication Protocol (EAP) Method Requirements for Wireless LANs".

Response   *Response Status*   **C**

ACCEPT.

The following was found by the editor at http://www.faqs.org/rfcs/rfc-index.html.

4017 Extensible Authentication Protocol (EAP) Method Requirements for Wireless LANs. D. Stanley, J. Walker, B. Aboba. March 2005. (Format: TXT=22183 bytes) (Status: INFORMATIONAL)

Editor included in draft 5.2 by modifying clause 2.

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: Clause, Subclause, page, line

Cl **02**
SC **2**

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Submission   **Bob O'Hara, Cisco Systems**

Cl **02**   *SC* **2**   *P* **4**   *L*   # 136

FISCHER, MICHAEL A   Individual

Comment Type   **G**   *Comment Status* **A**

Message Sequence Charts (MSCs) have become quite common in many subclauses of this standard, especially those that define enhanced security. A reference to the MSC definition should be included in clause 2.

SuggestedRemedy

Add a reference to the current version of ITU-T Recommendation Z.120

Response   *Response Status* **C**

ACCEPT.

Editor included in draft 5.2 by moving the reference in Annex E to clause 2, 11.4.3,

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Cl **03**   *SC* **3.10**   *P* **5**   *L*   # 41

O'HARA, ROBERT   Individual

Comment Type   **E**   *Comment Status* **A**

Incorrect citation of IEEE 802.1X.

SuggestedRemedy

Replace with "IEEE 802.1X-2004."

Response   *Response Status* **C**

ACCEPT.

Editor included in draft 5.2 by modifying 3.12, 3.13, 3.139, clause 4 (PAE, EAPOL), 5.4.2.2, 5.7, 8.4.6.1, 8.4.8, 8.5.2, 8.5.3.7.4.

Cl **03**   *SC* **3.104**   *P* **11**   *L* **1**   # 121

FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status* **A**

"extended service set (ESS) basic rate set" is undefined

SuggestedRemedy

Add a definition of ESS basic rate set

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

See #114 for editorial resolution.

Cl **03**   *SC* **3.106**   *P* **11**   *L*   # 42

O'HARA, ROBERT   Individual

Comment Type   **E**   *Comment Status* **A**

Incorrect citation of IEEE 802.1X.

SuggestedRemedy

Replace with "See IEEE 802.1X-2004."

Response   *Response Status* **C**

ACCEPT.

See comment #49 for editorial resolution.

Cl **03**   *SC* **3.107**   *P* **11**   *L*   # 43

O'HARA, ROBERT   Individual

Comment Type   **E**   *Comment Status* **A**

Lack of parallel structure with 3.11.

SuggestedRemedy

Should have similar structure, such as: "The medium access control (MAC) address of the IEEE 802.1X Supplicant."

Response   *Response Status* **C**

ACCEPT.

Editor included in draft 5.2 in 3.140.

Cl **03**   *SC* **3.11**   *P* **5**   *L*   # 44

O'HARA, ROBERT   Individual

Comment Type   **E**   *Comment Status* **A**

Awkward sentence structure.

SuggestedRemedy

Would be clearer as: "The medium access control (MAC) address of the IEEE 802.1X Authenticator."

Response   *Response Status* **C**

ACCEPT.

Editor included in draft 5.2 in 3.14.

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: Clause, Subclause, page, line

Cl **03**
SC **3.11**

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Submission   **Bob O'Hara, Cisco Systems**

Cl **03**   *SC* **3.116**   *P* **12**   *L*   # 45
O'HARA, ROBERT   Individual

Comment Type **E**   *Comment Status* **A**

Inconsistent definition. The synonym for "unicast frame" should be "directed frame" not "directed address".

SuggestedRemedy

Change "directed address" to "directed frame".

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Former resolution:
Change 3.30 and 3.116 to "directed frame"

In 9.8, change "either directed or group-addressed" to "either individual or group-addressed".

New propsoed resolution:

Change 3.30 to "directed frame"

Change 3.116 to "unicast" instead of "unicast frame". See comment #48 for similar wording changes proposed for multicast which should be adopted for unicast. Separate the definition of unicast from the definitoin of unicast address.

In 9.8, change "either directed or group-addressed" to "either individual or group-addressed"

Editor included in draft 5.2 in 3.37, 3.161, 3.162, and 9.7.

Cl **03**   *SC* **3.116**   *P* **12**   *L* **1**   # 123
FISCHER, MICHAEL A   Individual

Comment Type **E**   *Comment Status* **A**

The definition of "unicast frame" is unnecessarily asymmetric with the definition of "multicast" in 3.69.

SuggestedRemedy

Change term being defined to "unicast" -- which is a suitable match to the stated synonym "directed address" whereas including "frame" is not. Also, reword description to be symmetric with the definition of multicast in 3.69.

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Editor included in draft 5.2 in 3.158.

Cl **03**   *SC* **3.117**   *P* **12**   *L* **1**   # 122
FISCHER, MICHAEL A   Individual

Comment Type **E**   *Comment Status* **A**

"provides uniform loading across a minimum set of channels" emphasizes the wrong concept. "Uniform loading" implies comparable traffic levels on the various channels, which is dynamic and undeterminable in advance. The correct concept is uniformity of channel occupancy or channel usage.

SuggestedRemedy

Change "loading across" to "occupancy of" or "usage across"

Response   *Response Status* **C**

ACCEPT.

Editor included in draft 5.2 in 3.159.

Cl **03**   *SC* **3.19**   *P* **43**   *L*   # 283
LEVY, JOSEPH S   Individual

Comment Type **E**   *Comment Status* **A**

Item being defined not in bold.

SuggestedRemedy

Bold "channel spacing"

Response   *Response Status* **C**

ACCEPT.

See comment #46 for editorial resolution.

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: Clause, Subclause, page, line

Cl **03**
SC **3.19**

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Submission   **Bob O'Hara, Cisco Systems**

Cl **03** *SC* **3.19** *P* **6** *L* # 86
ECCLESINE, PETER Individual

Comment Type **E** *Comment Status* **A**
Channel spacing' is not bolded

SuggestedRemedy
Bold 'Channel Spacing'

Response *Response Status* **C**
ACCEPT.

See comment #46 for editorial resolution.

Cl **03** *SC* **3.19** *P* **6** *L* # 46
O'HARA, ROBERT Individual

Comment Type **E** *Comment Status* **A**
The name of the defined term is not in boldface.

SuggestedRemedy
Change formatting of "channel spacing" to boldface.

Response *Response Status* **C**
ACCEPT.

Editor included in draft 5.1 in 3.22.

Cl **03** *SC* **3.24** *P* **6** *L* # 47
O'HARA, ROBERT Individual

Comment Type **E** *Comment Status* **A**
Remove the second "with" from the name of the defined term.

SuggestedRemedy
Change all instances that spell out the definition of CCMP to remove the second "with".

Response *Response Status* **C**
ACCEPT. Make the deletion in the following clauses:
3.24 in two places
3.79
3.95
4
5.2.3.2
A.4.4.1 PC34.1.2.1

Editor included in draft 5.2 in 3.20, 3.102, 3.125, clause 4, 5.2.3.2, A.4.4.1.

Cl **03** *SC* **3.26** *P* **6** *L* # 40
O'HARA, ROBERT Individual

Comment Type **E** *Comment Status* **A**
Missing punctuation.

SuggestedRemedy
Add a space after "disclosure" and add a period at end of sentence.

Response *Response Status* **C**
ACCEPT.

Editor included in draft 5.2 in 3.32.

Cl **03** *SC* **3.26** *P* **6** *L* **1** # 117
FISCHER, MICHAEL A Individual

Comment Type **E** *Comment Status* **A**
missing space in "disclosureto"

SuggestedRemedy
change to "disclosure to"

Response *Response Status* **C**
ACCEPT.

See comment #40 for editorial resolution.

Cl **03** *SC* **3.36** *P* **7** *L* **8** # 115
FISCHER, MICHAEL A Individual

Comment Type **E** *Comment Status* **A**
"the station sending the MSDU chooses to involve DSS" seems to be in conflict with the description of DSS in 5.4.1.1

SuggestedRemedy
Replace from text starting "but the station sending..." through the end of this sentence with "and the station is associated with an AP."

Response *Response Status* **C**
ACCEPT.

Editor included in draft 5.2 in 3.44.

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: Clause, Subclause, page, line

Cl **03**
SC **3.36**

Submission **Bob O'Hara, Cisco Systems**

Cl **03**   *SC* **3.42**   *P* **7**   *L* **1**   # 116
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status* **A**

Only encapsulate is defined, and encapsulation is not defined; whereas in 3.28 and 3.29 both decapsulate and decapsulation are defined.

SuggestedRemedy

Add a definition of encapsulation with wording parallel to 3.29.

Response   *Response Status* **C**

ACCEPT.

Editor included in draft 5.2 by adding 3.52.

Cl **03**   *SC* **3.43**   *P* **7**   *L* **2**   # 114
FISCHER, MICHAEL A   Individual

Comment Type   **T**   *Comment Status* **A**

"extended service set (ESS) basic rate set" is undefined. BSS basic rate set is defined in 3.15, but there is no definition of ESS basic rate set, but "ESS basic rate set" is used in places that include 3.104.

SuggestedRemedy

Either add a definition of ESS basic rate set or change this reference to BSS basic rate set.

Response   *Response Status* **C**

ACCEPT.

Change all occurrences of "extended service set (ESS) basic rate set" to "BSS basic rate set"
in at least 3.43., 3.104.

Editor included in draft 5.2 in 3.55, 3.138.

Cl **03**   *SC* **3.45**   *P* **7**   *L*   # 100
MORETON, MIKE   Individual

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

The 1999 version of the standard included integrated LANs in the definition of ESS, which made it and the DS a really neat, generic concept that was architecturally clean.

Removing the integrated LANs raises a whole set of questions about how to communicate with integrated LANS that didn't exist when the architecture was clean.

SuggestedRemedy

Re-include the integrated LANs in the definition of ESS.

Save the DS!

Response   *Response Status* **U**

REJECT. The integrated LAN is not part of the ESS. It must be reached by a portal and invocation of the integration function.

Cl **03**   *SC* **3.46**   *P* **7**   *L* **1**   # 113
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status* **A**

The referent of "It" at the beginning of the second sentence is ambiguous.

SuggestedRemedy

Replace "It" with "A 4-Way Handshake"

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Editor included in draft 5.2 by using similar wording in 3.58.

Cl **03**   *SC* **3.63**   *P* **8**   *L* **2**   # 118
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status* **A**

Should include "using services of the physical layer" so as to match what is said for MPDU in 3.64.

SuggestedRemedy

Add ", using services of the physical layer (PHY)," between "MAC entities" and "to implement"

Response   *Response Status* **C**

ACCEPT.

Editor included in draft 5.2 in 3.82.

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: Clause, Subclause, page, line

Cl **03**
SC **3.63**

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Submission   **Bob O'Hara, Cisco Systems**

Cl **03**   *SC* **3.69**   *P* **9**   *L*   # 48
O'HARA, ROBERT   Individual

Comment Type   **E**   *Comment Status*   **A**
   Too much detail.

SuggestedRemedy
   No need to mention frame types when defining multicast. Remove all text after the first
   sentence of the definition.

Response   *Response Status*   **C**
   ACCEPT.
   replace:

   3.69 multicast: A medium access control (MAC) address that has the group bit set. A
   multicast MAC service data unit (MSDU) is one with a multicast destination address. A
   multicast MAC protocol data unit (MPDU) or control frame is one with a multicast receiver
   address.

   by:

   3.69 multicast: When applied to a MAC service data unit (MSDU), it is an MSDU with a
   multicast address as the destination address (DA).   When applied to a MAC protocol data
   unit (MPDU) or control frame it is an MPDU or control frame with a multicast address as
   the receiver address (RA).

   3.69a multicast address: A medium access control (MAC) address that has the group bit
   set.

   3.69b multicast-group address: A medium access control (MAC) address associated by
   higher level convention with a group of logically related stations.

   (the latter is consistent with an existing definition in the standard)

   Editor included the above responses in draft 5.2 by changin 3.88, adding 3.89 and 3.90.
   Editor also modified unicast to be similar, changing 3.161 and adding 3.162.

   In reviewing the usage of "multcast address" I find it is used inaccurately in the following
   places so I suggest also:

   In 9.7, replace all instances
   Add "¹group" after "multicast" to become:
   4¨¶Data(bc/mc)÷ represents any frame of type Data with a broadcast or multicast-group
   address in the Address1 field.

   Editor included the above response in draft 5.2 by modifying note 4 of Table 73 in 9.12.

In the description of MIB, "dot11GroupAddressesTable"
replace ¶multicast Address÷ by ¶multicast-group address÷

In the description of MIB component, "dot11GroupAddressesEntry" -> "dot11Address"
replace ¶multicast Addresses÷ by ¶multicast-group addresses÷

Editor included the above responses in draft 5.2 in Annex D.

Cl **03**   *SC* **3.72**   *P* **9**   *L*   # 49
O'HARA, ROBERT   Individual

Comment Type   **E**   *Comment Status*   **A**
   Circular definition.

SuggestedRemedy
   Don't use "pair" or "pairwise" when defining "pairwise". This definition avoids this issue:
   "Referring to, or an attribute of, two entities that are associated with each other, e.g., an
   access poitn (AP) and an associated station (STA), or two STAs in an independent basic
   service set (IBSS) network. This term is used to refer to a type of encryption key hierarchy
   pertaining to keys shared by only two entities."

Response   *Response Status*   **C**
   ACCEPT.

   Editor included in draft 5.2 in 3.97.

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: Clause, Subclause, page, line

Cl **03**   Page 15 of 75
SC **3.72**   3/10/2006 9:40:53 AM

Submission   **Bob O'Hara, Cisco Systems**

Cl **03** *SC* **3.8** *P* **5** *L* # 50
O'HARA, ROBERT Individual

Comment Type **E** *Comment Status* **A**
Circular definition.

SuggestedRemedy
Remove the word "suite" from the definition, or define it.

Response *Response Status* **C**
ACCEPT.

Change

"3.8 authentication and key management (AKM) suite: A set of AKM suite selectors."

To

"3.11 authentication and key management (AKM) suite: A set of one or more algorithms, designed to provide authentication and key management, either individually or in combination with higher layer authentication and key management algorithms outside the scope of this standard."

Editor included in draft 5.2 in 3.11.

Cl **03** *SC* **3.87** *P* **10** *L* **2** # 119
FISCHER, MICHAEL A Individual

Comment Type **E** *Comment Status* **A**
"may or may not be understood by receivers" is poor wording. "Understanding" is not an attribute that other clauses consider a station to posess.

SuggestedRemedy
Replace with "may or may not be detected as valid network activity by the PHY entities at those receiving stations."

Response *Response Status* **C**
ACCEPT.

Editor included in draft 5.2 in 3.112.

Cl **03** *SC* **3.89** *P* **10** *L* **2** # 120
FISCHER, MICHAEL A Individual

Comment Type **E** *Comment Status* **A**
"a nonce should be one of th inputs" makes the use of the nonce seem to be optional, which is not the case in clause 8.

SuggestedRemedy
Replace with "a nonce is used as one of the inputs"

Response *Response Status* **C**
ACCEPT.

Editor included in draft 5.2 in 3.114.

Cl **03** *SC* **3.9** *P* **5** *L* # 51
O'HARA, ROBERT Individual

Comment Type **E** *Comment Status* **A**
Incorrect citation of IEEE 802.1X.

SuggestedRemedy
Replace with "IEEE 802.1X-2004."

Response *Response Status* **C**
ACCEPT.

See comment #41 for editorial resolution.

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: Clause, Subclause, page, line

Cl **03**
SC **3.9**

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Submission **Bob O'Hara, Cisco Systems**

Cl **05**   *SC* **5.1.1**   *P* **56**   *L* **2**   # 284
LEVY, JOSEPH S   Individual

Comment Type   **G**   *Comment Status*   **A**
    The second sentance seems to be out of place. Why is this statement located here.
    "Some countries impose specific requirements for radio equipment in addition to those
    specified
    in this standard." While this is true I fail to see how it relates to why wireless LAN systems
    are different.

SuggestedRemedy
    Move or remove the statement or clarify why this makes wireless LAN systems different.

Response   *Response Status*   **C**
    ACCEPT.

    Add "This standard does not provide information to meet these country-specific radio
    regulations." following the sentence beginning "Some countries"

    Editor included in draft 5.2 in 5.1.1.

Cl **05**   *SC* **5.1.1.4**   *P* **20**   *L* **1**   # 124
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**
    "a current style" was appropriate in early drafts of this standard, but with 802.11 having
    been an approved standard since 1997, wireless LANs are now part of the "currrent style."

SuggestedRemedy
    Change to "conventional" or "wired"

Response   *Response Status*   **C**
    ACCEPT.

    Editor included in draft 5.2 in 5.1.1.4.

Cl **05**   *SC* **5.2**   *P* **20**   *L* **8**   # 125
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**
    "members of the BSA" is poor wording, as membership is not an attribute of an area

SuggestedRemedy
    Change to "stations present in the BSA"

Response   *Response Status*   **C**
    ACCEPT.

    Editor included in draft 5.2 in 5.2.

Cl **05**   *SC* **5.2.3**   *P* **21**   *L* **13**   # 126
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**
    missing space in "isany"

SuggestedRemedy
    change to "is any"

Response   *Response Status*   **C**
    ACCEPT.

    Editor included in draft 5.2 in 5.2.3.

Cl **05**   *SC* **5.2.3**   *P* **58**   *L* **13**   # 286
LEVY, JOSEPH S   Individual

Comment Type   **E**   *Comment Status*   **A**
    There is a space missing text currenlty reads "isany".

SuggestedRemedy
    Replace "isany" with "is any"

Response   *Response Status*   **C**
    ACCEPT.

    See response to comment #126 for editorial resolution.

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: Clause, Subclause, page, line

Cl **05**
SC **5.2.3**

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Submission   **Bob O'Hara, Cisco Systems**

Cl **05**   *SC* **5.2.3**   *P* **58**   *L* **5**   # 285
LEVY, JOSEPH S   Individual

Comment Type **E**   *Comment Status* **R**
This is the first intance of WM in the text so it should be defined as DSM is in the latter part of the sentence.

SuggestedRemedy
Replace WM with: wireless medium (WM)

Response   *Response Status* **C**
REJECT.

WM is used and defined in 1.2. DSM is, however, first used in 5.2.3.

Cl **05**   *SC* **5.2.5**   *P* **61**   *L* **10**   # 287
LEVY, JOSEPH S   Individual

Comment Type **G**   *Comment Status* **A**
While Figure4 is is an interesting Figure, it is completely meaningless since there is no scale provided or any indication as to what the nessisary field strength for the WM to function is.

SuggestedRemedy
Provide a scale or a reference as to where this information can be obtained.

Response   *Response Status* **C**
ACCEPT IN PRINCIPLE.

A statement defining the range of the signal plotted to be 50dB is added to give specific meaning to this example.

Editor included in draft 5.2 in 5.2.5.

Cl **05**   *SC* **5.4.2.2**   *P* **30**   *L* **9**   # 127
FISCHER, MICHAEL A   Individual

Comment Type **E**   *Comment Status* **A**
In "this is different" the referent of "this" is ambiguous.

SuggestedRemedy
Change to "association is handled differently"

Response   *Response Status* **C**
ACCEPT.

Editor included in draft 5.2 in 5.4.2.2.

Cl **05**   *SC* **5.4.2.4**   *P* **31**   *L* **10**   # 128
FISCHER, MICHAEL A   Individual

Comment Type **E**   *Comment Status* **A**
"MAC management is designed to accommodate loss of an associated STA" implies that stations physically disappear.

SuggestedRemedy
Change to "MAC management is designed to accommodate loss of communication with an associated STA."

Response   *Response Status* **C**
ACCEPT.

Editor included in draft 5.2 in 5.4.2.4.

Cl **05**   *SC* **5.4.3.3**   *P* **33**   *L* **19**   # 130
FISCHER, MICHAEL A   Individual

Comment Type **E**   *Comment Status* **A**
Clarify the last sentence of the subclause.

SuggestedRemedy
Add "of frames that are being discarded" to the end of the last sentence of the last paragraph.

Response   *Response Status* **C**
ACCEPT.

Editor included in draft 5.2 in 5.4.3.3.

Cl **05**   *SC* **5.4.3.3**   *P* **33**   *L* **2**   # 129
FISCHER, MICHAEL A   Individual

Comment Type **E**   *Comment Status* **A**
The referent of "With a wireless shared medium, this is not the case" is ambiguous.

SuggestedRemedy
Change to "With a wireless, shared medium, there is no physical connection, and all stations and certain other RF devices in or near the LAN may be able to send, receive, and/or interfere with the LAN traffic."

Response   *Response Status* **C**
ACCEPT.

Editor included in draft 5.2 in 5.4.3.3.

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: Clause, Subclause, page, line

Cl **05**
SC **5.4.3.3**

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Submission   **Bob O'Hara, Cisco Systems**

Cl **05**   *SC* **5.6**   *P* **37**   *L*   # 132
FISCHER, MICHAEL A   Individual

Comment Type   **T**   *Comment Status*   **A**

[3rd paragraph above 5.7] -- Clarify the non-use of the Class 3 frame received by STA A from STA B.

SuggestedRemedy

Between "shall" and "send a disassociation frame" insert the text "ignore the received Class 3 frame and"

Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.

Between "shall" and "send a disassociation frame" insert the text "disallow the received Class 3 frame and"

Editor included in draft 5.2 in 5.6.

Cl **05**   *SC* **5.6**   *P* **37**   *L*   # 133
FISCHER, MICHAEL A   Individual

Comment Type   **T**   *Comment Status*   **A**

[2nd paragraph above 5.7] -- Clarify the non-use of the Class 3 frame received by STA A from STA B.

SuggestedRemedy

Between "shall" and "send a deauthentication frame" insert the text "ignore the received Class 3 frame and"

Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.

Between "shall" and "send a deauthentication frame" insert the text "disallow the received Class 3 frame and"

Editor included in draft 5.2 in 5.6.

Cl **05**   *SC* **5.6**   *P* **37**   *L*   # 131
FISCHER, MICHAEL A   Individual

Comment Type   **T**   *Comment Status*   **A**

[line just above "c)"] -- Clarify the non-use of the Class 2 frame received by STA A from STA B.

SuggestedRemedy

Between "shall" and "send a deauthentication frame" insert the text "ignore the received Class 2 frame and"

Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.

Between "shall" and "send a deauthentication frame" insert the text "disallow the received Class 2 frame and"

Editor included in draft 5.2 in 5.6.

Cl **05**   *SC* **5.6, a), 2), vi)**   *P* **36**   *L*   # 54
PONNUSWAMY, SUBBURAJAN   Individual

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

TGm has removed the capability of

SuggestedRemedy

Change from

Response   *Response Status*   **U**

REJECT. Entry error on web form.

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: Clause, Subclause, page, line

Cl   **05**
SC   **5.6, a), 2), vi)**

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3/10/2006 9:40:54 AM

Submission   **Bob O'Hara, Cisco Systems**

Cl **05**   *SC* **5.6, a), 2), vi)**   *P* **36**   *L*   # 64
PONNUSWAMY, SUBBURAJAN   Individual

Comment Type   **TR**   *Comment Status*   **R**   action frame

TGm has removed the capability of 802.11 to support Action frames in State 1. This capability was added by TGh, and should remain in the standard. Yes, this is a unique capability, all the more reason to keep it, as there may be applications which use this capability. Now, and prior to the introduction of TGw all Action frames, whether sent in State 1 or State 3 are unprotected.

SuggestedRemedy

Change from vi) Action within an IBSS, action frames are Class 1. To vi) Spectrum Management Action

Response   *Response Status*   **U**

REJECT. The reason for restricting the use of Action frames to class 3 in an infrastructure BSS is to limit the times when a STA must interpret and respond to an Action frame. When associated to an AP, a STA only needs to be responding to action frames from its AP. Requiring that Action frames be Class 1 in all cases leads to a new denial of service attack against a STA.

Cl **05**   *SC* **5.7**   *P* **38**   *L*   # 53
O'HARA, ROBERT   Individual

Comment Type   **E**   *Comment Status*   **A**

It seems that the section heading for "Reference Model" was deleted between D3.0 and D4.0 -- it used to be at 5.9, but now the text and diagram are concatenated with section 5.7 entitled "Differences between ESS and IBSS LANs". I think the section heading should be restored (now it would be 5.8).

SuggestedRemedy

Insert the correct heading and section number, renumber subsequent sections.

Response   *Response Status*   **C**

ACCEPT.   In addition to the suggested remedy, ensure that any references to the new 5.8 are correctly linked and that current references to 5.8 are changed to 5.9.

Editor included in draft 5.2 by adding heading 5.8. No references were found.

Cl **05**   *SC* **5.7**   *P* **39**   *L*   # 135
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**

[last paragraph above 5.8] -- This paragraph states that Figure 11 shows an interface between the 802.1X Supplicant/Authenticator and the SME; however, no such interface appears in Figure 11.

SuggestedRemedy

Either change "shown in Figure 11" to "not shown in Figure 11" or add a symbol and label in Figure 11 to represent this interface.

Response   *Response Status*   **C**

ACCEPT.

Editor included in draft 5.2 in 5.7.

Cl **05**   *SC* **5.7**   *P* **39**   *L*   # 134
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**

[Figure 11] -- The "802.1X" box is narrower than the Data Link Layer boxes immediately below.

SuggestedRemedy

Widen the "802.1X" box to the same width as the Data Link Layer MAC Sublayer and MAC Sublayer Management Entity boxes immediately below.

Response   *Response Status*   **C**

ACCEPT.

Editor included in draft 5.2 in Figure 11 of 5.8. No changes bars shown.

Cl **06**   *SC* **6.2.1**   *P* **48**   *L* **5**   # 137
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**

incorrect word

SuggestedRemedy

change "specify" to "specific"

Response   *Response Status*   **C**

ACCEPT.

Editor included in draft 5.2 in 6.2.1.

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: Clause, Subclause, page, line

Cl **06**
SC **6.2.1**

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Submission																																												**Bob O'Hara, Cisco Systems**

Cl **06**   *SC* **6.2.1.1.1**   *P* **49**   *L* **1**   # 2
JAMES, DAVID V   Individual

Comment Type   **TR**   *Comment Status*   **A**

(These apply throughout; the page, sub-clause, and line numbers
were put in to bypass the format checker and are only relevant
for a small portion of this comment)

This document does not conform to the IEEE Style Manual.
A couple of examples:
  1) List of Figures ==> List of figures
  2) Figure 118 in TOF breaks across line
  3) Redundant/confusing names:
    destination address, DA
  4) Mbit/s ==> Mb/s
  5) State machine on #811 not consistent with state machine
    notation in other 802 specifications

SuggestedRemedy

Conform to the IEEE Style Manual.
If necessary, please request assistance from the IEEE Editors.

Response   *Response Status*   **U**

ACCEPT. The Working Group editor is working with the IEEE-assigned project editor to
ensure conformance with the IEEE Style Manual.

Change abbreviation for "megabits per second" to the correct spelling throughout (either
Mbit/s or Mb/s).

There is no requirement for state machine format consistency between 802 documents.

Editor included in draft 5.2 by changing capitalization of List of tables, List of figures.

Editor searched for megabit and it does not occur in document.

Editor consulted current IEEE style guide and IEEE staff. Both Mb/s and Mbit/s are
considered standard, acceptable, and clear. No changes were made.

Cl **06**   *SC* **6.2.1.2.2**   *P* **51**   *L* **2**   # 138
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**

The last sentence of the first paragraph on the page is misleading, in that one could
interpret this sentence to mean that there are cases where the 802.11 MAC does not report
"success" as reception status on MA-UNITDATA.indication.

SuggestedRemedy

In the 2nd line of the paragraph, change "only reports" to "always reports" and change
"when" to "because"

Response   *Response Status*   **C**

ACCEPT.

Editor included part of this change in draft 5.1 (from 802.11e) and part in draft 5.2 in
6.2.1.2.2.

Cl **06**   *SC* **6.2.1.2.3**   *P* **51**   *L* **3**   # 139
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**

The reference to "WEP encryption" appears to be an editing artifact that predates 802.11i.
This should be corrected because the current statement raises the question of whether MA-
UNITDATA.indication is generated when encryption other than WEP is used.

SuggestedRemedy

Replace "WEP encryption" with "security and integrity information"

Response   *Response Status*   **C**

ACCEPT.

Editor included in draft 5.2 in 6.2.1.2.3.

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: Clause, Subclause, page, line

Cl   **06**
SC   **6.2.1.2.3**

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Submission   **Bob O'Hara, Cisco Systems**

Cl **06**   *SC* **6.2.1.2.4**   *P* **51**   *L* **1**   # 140

FISCHER, MICHAEL A   Individual

Comment Type   **T**   *Comment Status* **A**

"validity and content of the frame" is not correct, because by the time MA-UNITDATA.indication is generated a received frame has already been validated, and the item being indicated by MA-UNITDATA.indication is an MSDU, not a frame.

SuggestedRemedy

Replace "validity and content of the frame" with "content of the MSDU"

Response   *Response Status* **C**

ACCEPT.

Editor changed comment type to technical from editorial.

Editor included in drat 5.2 in 6.2.1.2.4.

Cl **06**   *SC* **6.2.1.3.2**   *P* **51**   *L*   # 141

FISCHER, MICHAEL A   Individual

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

[also page 52] -- Items "b)" and "i)" remain listed due to their inclusion in previous versions of the standard, but are not, in fact, reasonable to generate in conformant implementations because to do so would necessitate delaying generation of any MA-UNITDATA-STATUS.indication that might otherwise be "successful" until after it is known that the retry limits and transmit lifetimes are NOT exceeded. Because there is no means by which an MA-UNITDATA-STATUS.indication can be matched to an arbitrary, previous MA-UNITDATA.request, this delayed generation of MA-UNITDATA-STATUS.indication would, necessarily, prevent acceptance of additional MA-UNITDATA.request primitives until successful transfer of the previous outgoing MSDU or expiration of the appropriate retry counter or timeout.

SuggestedRemedy

Either remove items "b)" and "i)" and renumber the list elements, or add a NOTE, applicable to items "b)" and "i)" that states something like: "Implementations are never required to generate Undeliverable transmission status due to unacknowledged directed MSDUs nor due to expiration of an MSDU transmit lifetime timer." More detail about why these are not required may be included in this NOTE if desired.

Response   *Response Status* **U**

REJECT.

The integration of 802.11e into the draft makes numerous changes to the SAP and associated primitives. The commenter is encouraged to examine this clause in light of those changes, during the recirculation ballot. This topic will be revisited after the recirculation ballot.

Cl **07**   *SC* **7**   *P* **53**   *L* **1**   # 142

FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status* **A**

split infinitive

SuggestedRemedy

Change "shall be able to properly construct" to "shall be able properly to construct"

Response   *Response Status* **C**

ACCEPT.

Editor included in draft 5.2 in first paragraph of clause 7.

Cl **07**   *SC* **7.1.1**   *P* **53**   *L* **4**   # 143

FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status* **A**

At the end of the first sentence of the second paragraph of this subclause, the mention of bits should be plural.

SuggestedRemedy

Change "bit" to "bits"

Response   *Response Status* **C**

ACCEPT.

Editor included in draft 5.2 in 7.1.1.

Cl **07**   *SC* **7.1.3.1.1**   *P* **54**   *L* **4**   # 144

FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status* **A**

Clarify where the Protocol Version field is checked.

SuggestedRemedy

Change "device that receives" to "MAC entity that receives"

Response   *Response Status* **C**

ACCEPT.

Editor included in draft 5.2 in 7.1.3.1.1.

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: Clause, Subclause, page, line

Cl **07**
SC **7.1.3.1.1**

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Submission   **Bob O'Hara, Cisco Systems**

Cl **07**   *SC* **7.1.3.1.4**   *P* **56**   *L*   # 300
ENGWER, DARWIN A   Individual

Comment Type   **TR**   *Comment Status*   **A**

Re Table 2: for the bit field combination of ToDS=1 and FromDS=1, the description references the WDS, which doesn't really exist (yet).

SuggestedRemedy

Change
"Data frame using the four-address wireless distribution system
(WDS) format."
to
"Data frame using the four-address format."

Response   *Response Status*   **U**

ACCEPT.

Editor reverted to the 5.0 text on which this comment is based. The 5.1 text is shown as stricken and replace with 5.0 text and the changes suggested.

Editor included in draft 5.2 in 7.1.3.1.4 in Table 2.

Cl **07**   *SC* **7.1.3.1.9**   *P*   *L*   # 17
STEPHENS, ADRIAN P   Individual

Comment Type   **E**   *Comment Status*   **A**

"Only WEP is allowed as the cryptographic encapsulation algorithm for management frames of subtype Authentication." This statement doesn't relate to the interpretationof the Protected Frame Field.

SuggestedRemedy

Move to an appropriate section under the format of the authentication frame.

Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.

Delete the last sentence of the clause. Change "When the Protected Frame field is set to 1 in a data frame" to "When the Protected Frame field is set to 1".

Editor included in draft 5.2 in 7.1.3.1.9.

Cl **07**   *SC* **7.1.3.3.2**   *P* **58**   *L* **11**   # 146
FISCHER, MICHAEL A   Individual

Comment Type   **TR**   *Comment Status*   **A**

The last sentence of the paragraph designated "2)" states that it is not necessary that a station be capable of generating the broadcast address, however, there are other normative requirements in clauses 9, 10, and 11, that require a STA to send MMPDUs with a broadcast address. Examples are Beacon frames in an IBSS and Probe Request frames for active scanning. There is nothing in later clauses, nor in the PICS, that suggests that some stations are incapable of participating in an IBSS, nor are incapable of active scanning, therefore generation of the broadcast address is mandatory, at least for MMPDUs.

SuggestedRemedy

Preferred change: Replace the last 2 sentences of this paragraph with "All stations shall be able to generate and recognize the broadcast address." Acceptable, but non-preferred change: Limit the requirement for all stations to be able to generate the broadcast address to MMPDUs, while stating that it is not required to be able to generate the broadcast address for MSDUs.

Response   *Response Status*   **U**

ACCEPT IN PRINCIPLE.

Delete "All stations are able to recognize the broadcast address. It is not necessary that a station be capable of generating the broadcast address."

Editor included in draft 5.2 in 7.1.3.3.2.

Cl **07**   *SC* **7.1.3.3.2**   *P* **58**   *L* **2**   # 145
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**

Describing a MAC address as being "associated with" a station is unclear in this context, because "associated with" is also used to describe the relationship between a STA and a BSS.

SuggestedRemedy

Change "associated with" to "assigned to" in line "a)" and to "that may be in use by" in line "b)"

Response   *Response Status*   **C**

ACCEPT.

Editor included in draft 5.2 in 7.1.3.3.2.

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: Clause, Subclause, page, line

Cl **07**
SC **7.1.3.3.2**

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Submission   **Bob O'Hara, Cisco Systems**

Cl **07**   *SC* **7.1.3.3.3**   *P* **58**   *L*   # 301
ENGWER, DARWIN A   Individual

Comment Type   **TR**   *Comment Status* **A**

The term "broadcast BSSID" belies the real use of a value of all 1's in the BSSID field of a probe request. It is not a "broadcast" BSSID, it is a "wildcard" BSSID intended to match all BSSIDs.

SuggestedRemedy

Change "broadcast BSSID" to "wildcard BSSID".

Response   *Response Status* **U**

ACCEPT.

Editor included in draft 5.2 in 7.1.3.3.3, 7.2.3, and 10.3.2.1.2.

Cl **07**   *SC* **7.1.3.4.1**   *P* **59**   *L* **4**   # 147
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status* **A**

Clarify what sequence number each fragment contains.

SuggestedRemedy

Change "Each fragment of an MSDU or MMPDU contains the assigned sequence number." To "Each fragment of an MSDU or MMPDU contains a copy of the sequence number assigned to that MSDU or MMPDU."

Response   *Response Status* **C**

ACCEPT.

Editor included in draft 5.2 in 7.1.3.4.1.

Cl **07**   *SC* **7.2.1**   *P* **60**   *L* **2**   # 148
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status* **A**

Clarify which SIFS interval is referred to.

SuggestedRemedy

Change "whose reception concluded within the prior short interframe space (SIFS) interval" to "whose reception concluded within the short interframe space (SIFS) interval preceding the start of the current frame."

Response   *Response Status* **C**

ACCEPT.

Editor included in draft 5.2 in 7.2.1.

Cl **07**   *SC* **7.2.1.2**   *P* **61**   *L*   # 149
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status* **A**

[5th line from end] -- Clarify the duration value in the CTS frame for a data or management frame that requires acknowledgement.

SuggestedRemedy

Change "plus one SIFS interval, one ACK frame, and an additional SIFS interval" to "plus two SIFS intervals plus one ACK frame."

Response   *Response Status* **C**

ACCEPT.

Editor included in draft 5.2 in 7.2.1.2.

Cl **07**   *SC* **7.2.1.3**   *P* **61**   *L* **4**   # 150
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status* **A**

The name of the bit is "More Fragments" (plural)

SuggestedRemedy

Correct two instances of "More Fragment" in the first two lines of the last paragraph on the page.

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Editor included in draft 5.1 in 7.2.1.3.

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: Clause, Subclause, page, line

Cl **07**
SC **7.2.1.3**

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Submission   **Bob O'Hara, Cisco Systems**

Cl **07**   *SC* **7.2.1.4**   *P* **62**   *L*   # 152
FISCHER, MICHAEL A   Individual

Comment Type   **TR**   *Comment Status*   **A**
[Last paragraph] -- The stated rules for updating the NAV upon receipt of PS-Poll frames are incomplete.

SuggestedRemedy
Replace the last sentence of the last paragraph of the subclause with "All STAs, upon receipt of a PS-Poll frame, update their NAV settings as appropriate under the coordination function and data rate selection rules using a duration value equal to the time, in microseconds, required to transmit one ACK frame plus one SIFS interval. If the calculated duration includes a fractional microsecond, that value is rounded up the next higher integer."

Response   *Response Status*   **U**
ACCEPT IN PRINCIPLE.
Delete the last sentence of 7.2.1.4.

In the first sentence of 9.2.5.4, change "Duration/ID" to "Duration".

Add after the first sentence of 9.2.5.4:
"Upon receipt of a PS-Poll frame, a STA shall update its NAV settings as appropriate under the data rate selection rules using a duration value equal to the time, in microseconds, required to transmit one ACK frame plus one SIFS interval, but only when the new NAV value is greater than the current NAV value. If the calculated duration includes a fractional microsecond, that value is rounded up the next higher integer."

Editor included in draft 5.2 in 7.2.1.4 and 9.2.5.4.

Cl **07**   *SC* **7.2.1.4**   *P* **62**   *L*   # 292
ENGWER, DARWIN A   Individual

Comment Type   **TR**   *Comment Status*   **A**
comment: RA is not shown in Figure 26

SuggestedRemedy
Like the change that was made to Table 4 in clause 7.2.2,
change the third box annotation in Figure 26 from "BSS ID" to "RA = BSSID".

Response   *Response Status*   **U**
ACCEPT IN PRINCIPLE.

change the third box annotation in Figure 26 from "BSS ID" to "BSSID (RA)", where "(RA)" appears on the line under "BSSID".

Editor included in draft 5.2 in 7.2.1.4 Figure 27.

Cl **07**   *SC* **7.2.1.4**   *P* **62**   *L*   # 151
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**
[Figure 26] -- There should not be a space between "BSS" and "ID"

SuggestedRemedy
Correct the field label to "BSSID"

Response   *Response Status*   **C**
ACCEPT.

Editor included in draft 5.2 in 7.2.1.4 Figure 27.

Cl **07**   *SC* **7.2.1.5**   *P* **62**   *L*   # 296
ENGWER, DARWIN A   Individual

Comment Type   **TR**   *Comment Status*   **A**
TA is not shown in Figure 27.

SuggestedRemedy
Like the change that was made to Table 4 in clause 7.2.2,
change the fourth box annotation in Figure 27 from "BSSID" to "TA = BSSID".

Response   *Response Status*   **U**
ACCEPT IN PRINCIPLE.

change the fourth box annotation in Figure 27 from "BSS ID" to "BSSID (TA)", where "(TA)" appears on the line under "BSSID".

Editor included in draft 5.2 in 7.2.1.5 Figure 28.

Cl **07**   *SC* **7.2.1.5**   *P* **62**   *L*   # 294
ENGWER, DARWIN A   Individual

Comment Type   **GR**   *Comment Status*   **A**
TA is not shown in Figure 27.

SuggestedRemedy
Like the change that was made to Table 4 in clause 7.2.2,
change the fourth box annotation in Figure 27 from "BSSID" to "TA = BSSID".

Response   *Response Status*   **U**
ACCEPT IN PRINCIPLE.

See comment #296 for editorial resolution.

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: Clause, Subclause, page, line

Cl **07**
SC **7.2.1.5**

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Submission   **Bob O'Hara, Cisco Systems**

Cl **07**   *SC* **7.2.1.6**   *P* **63**   *L*   # 295
ENGWER, DARWIN A   Individual

Comment Type   **TR**   *Comment Status*   **A**
    TA is not shown in Figure 28.

SuggestedRemedy
    Like the change that was made to Table 4 in clause 7.2.2,
    change the fourth box annotation in Figure 28 from "BSSID" to "TA = BSSID".

Response   *Response Status*   **U**
    ACCEPT IN PRINCIPLE.

    change the fourth box annotation in Figure 28 from "BSS ID" to "BSSID (TA)", where "(TA)"
    appears on the line under "BSSID".

    Editor included in draft 5.2 in 7.2.1.6 Figure 28.

Cl **07**   *SC* **7.2.2**   *P* **63**   *L*   # 153
FISCHER, MICHAEL A   Individual

Comment Type   **T**   *Comment Status*   **R**
    [Paragraph just below Table 4] -- This paragraph requires validation of the BSSID in cases
    where the Address 1 field contains a group address. However, for WDS format (To DS=1,
    From DS=1), there is no BSSID among the address values. Nothing is said about how such
    a frame is validated.

SuggestedRemedy
    Add text to cover the missing case, either by prohibiting a group RA in WDS format data
    frames, or by stating what other address information is to be validated in WDS format data
    frames with a group RA.

Response   *Response Status*   **C**
    REJECT.

    Table 2 following clause 7.1.3.1.5 states that this standard does not describe operations
    when both ToDS and FromDS are 1. Adding such description here contradicts that
    statement.

Cl **07**   *SC* **7.2.2**   *P* **64**   *L*   # 154
FISCHER, MICHAEL A   Individual

Comment Type   **T**   *Comment Status*   **A**
    [4th paragraph on page] -- The statement regarding the frame body being "null (0 octets in
    length) in frames fo Subtype Null &" is incomplete.

SuggestedRemedy
    To the sentence beginning "The frame body is null (0 octets in length) &" insert
    immediately after the closing parenthesis the text "and the Protected Frame subfield in the
    Frame Control field is set to 0"

Response   *Response Status*   **C**
    ACCEPT IN PRINCIPLE.

    Clauses 8.3.2.2 and 8.3.3.1 clearly show that the frame body must be one byte or greater
    in length to apply the encryption encapsulations. The subtypes of the data frame
    enumerated by the commenter do not meet this criterion. Therefore, they may not be
    encrypted. To make clear that the Protected Frame bit cannot be set for these subtypes,
    the following change will be made.

    Add to the end of 7.1.3.1.9: "The Protected Frame field is set to 0 in Data frames of
    subtype Null Function, CF-ACK (no data), CF-Poll (no data), and CF-ACK+CF-Poll (no
    Data) (see clauses 8.3.2.2 and 8.3.3.1 that show that the frame body must be one byte or
    longer to apply the encapsulation)."

    Editor included in draft 5.2 in 7.1.3.1.9.

Cl **07**   *SC* **7.2.2**   *P* **64**   *L*   # 155
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**
    [Last paragraph] -- There has been considerable confusion among readers of previous
    versions of the 802.11 standard regarding which frames are considered for NAV update.
    The last sentence of this paragraph is one place where clarification can, and should, be
    provided.

SuggestedRemedy
    After "less than or equal to 32,767 from valid data frames" insert the text "(without regard
    for the RA, DA, and/or BSSID address values that may be present in these frames)"

Response   *Response Status*   **C**
    ACCEPT.

    Editor added to draft 5.2 in 7.2.2.

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: Clause, Subclause, page, line

Cl **07**   Page 26 of 75
SC **7.2.2**   3/10/2006 9:40:54 AM

Submission   **Bob O'Hara, Cisco Systems**

Cl **07**　　　*SC* **7.2.3**　　　　　　　*P* **64**　　　　*L*　　　　# 299

ENGWER, DARWIN A　　　　　　　　Individual

Comment Type　**TR**　　　*Comment Status*　**A**

The second paragraph in this section makes references to Address 1, yet Address 1 is not shown in Figure 30, and therefore there is no way to coorelate the text with the actual management frame format.

SuggestedRemedy

Correct the Figure and the text to correspond to each other.

Response　　　　　　　　*Response Status*　**U**

ACCEPT.

Add "Address 1" to the third box in Figure 30 of 7.2.3. Place "DA" in parentheses below it in the same box.

Editor included in draft 5.2 in 7.2.3 in Figure 36.

Cl **07**　　　*SC* **7.2.3**　　　　　　　*P* **64**　　　　*L*　　　　# 156

FISCHER, MICHAEL A　　　　　　　　Individual

Comment Type　**TR**　　　*Comment Status*　**A**

[2nd paragraph] -- The stated rules for receipt of management frames with a group address in the Address 1 field have a listed exception for frames of type Beacon, but also need an exception for frames of type Probe Request, otherwise most Probe Request frames will be discarded due to failure to contain the BSSID of the current BSS.

SuggestedRemedy

Add the following sentence to the end of the second paragraph in this subclause: "Frames of type Probe Request with a group address in the Address 1 field are accepted if the BSSID field contains either the BSSID of the current BSS, or the broadcast BSSID."

Response　　　　　　　　*Response Status*　**U**

ACCEPT IN PRINCIPLE.

Add the following sentence to the end of the second paragraph in 7.2.3: "Frames of type Probe Request with a group address in the Address 1 field are processed as described in 11.1.3.2.1."

Replace the first sentence of 11.1.3.2.1 with:
"STAs, subject to criteria below, receiving Probe Request frames shall respond with a probe response only if
a) the SSID in the probe request is the wildcard SSID or the specific SSID of the STA , and
b) the BSSID field in the probe request is the wildcard BSSID , or the BSSID of the STA."

Add at the beginning of the second paragraph of 11.1.3.2.1: "Only APs and STAs in an IBSS respond to probe requests."

Editor included in draft 5.2 in 7.2.3 and 11.1.3.2.1.

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: Clause, Subclause, page, line

Cl **07**
SC **7.2.3**

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3/10/2006 9:40:54 AM

Submission　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　**Bob O'Hara, Cisco Systems**

Cl **07**   *SC* **7.2.3**   *P* **65**   *L*   # 157
FISCHER, MICHAEL A   Individual

Comment Type   **T**   *Comment Status*   **A**

[Next-to-last paragraph] -- Frame body processing should be clarified in the case that an information element is encountered with an unrecognized element type.

SuggestedRemedy

Extend the sentence which currently reads "Stations encountering an element type they do not understand ignore that element" by adding the text "but continue to attempt to process any remaining information elements in the frame body."

Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.

Extend the sentence which currently reads "Stations encountering an element type they do not understand ignore that element" by adding the text "but continue to process any remaining information elements in the frame body."

Editor included similar text in draft 5.1 in 7.2.3 from 802.11e.

Cl **07**   *SC* **7.2.3**   *P* **65**   *L*   # 302
ENGWER, DARWIN A   Individual

Comment Type   **TR**   *Comment Status*   **A**

The term "broadcast BSSID" belies the real use of a value of all 1's in the BSSID field of a probe request. It is not a "broadcast" BSSID, it is a "wildcard" BSSID intended to match all BSSIDs.

SuggestedRemedy

Change "broadcast BSSID" to "wildcard BSSID".

Response   *Response Status*   **U**

ACCEPT.

Make the change in item c).

Editor included in draft 5.2 in 7.2.3.

Cl **07**   *SC* **7.2.3.1**   *P* **65**   *L*   # 158
FISCHER, MICHAEL A   Individual

Comment Type   **TR**   *Comment Status*   **A**

[first paragraph] -- There are a considerable number of elements with sizes constrained only by the maximum element size. Even without the complicating issue of the possible inclusion of one or more Vendor Specific elements, it appears possible for the combined size of the information elements listed in Table 5 to exceed the maximum length of a management frame body. This situation should be addressed in the text describing the Beacon frame format.

SuggestedRemedy

Either add a rule for determining which element(s) are to be omitted if the frame body length would otherwise exceed 2304 octets, or add an informative NOTE that explains why the Beacon frame body will always fit within 2304 octets, despite the presence of numerous, variable-size information elements.

Response   *Response Status*   **U**

ACCEPT IN PRINCIPLE.

There is already sufficient space in the Beacon for the information content required by the standard. There is also already a limitation on the maximum frame size. There is no need to add any rules for which information is more, or less, important than other information and should then be included in the Beacon when space is running short. It is up to the user to configure the WLAN in such a way that the required information is carried in the Beacon.

Add in the Notes column of Table 5 for the Vendor Specific IE: "This information element follows all other information elements." In the Order column, change "22" to "Last". Make these changes in all tables providing the order of items in a frame, except in Table 12 (Probe Response).

In Table 12, add in the Notes column for the Vendor Specific IE: "This information element follows all other information elements, except the Requested Information elements."

Editor included in draft 5.2 in clause 7 Table 8, Table 10, Table 11, Table 12, Table 13, Table 14, Table 15, Table 16, Table 18, Table 19.

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: Clause, Subclause, page, line

Cl   **07**
SC   **7.2.3.1**

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3/10/2006 9:40:54 AM

Submission   **Bob O'Hara, Cisco Systems**

Cl **07**   *SC* **7.2.3.1**   *P* **66**   *L*   # 160
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**

[Table 5, order 21] -- The conditions under which the RSN information element is present are unclear.

SuggestedRemedy

Change "is only present" to either "shall be present" or "may be present" for clarity and to match the description of other selectively-present elements.

Response   *Response Status*   **C**

ACCEPT.

Editor included in draft 5.2 in 7.2.3.1 Table 8.

Cl **07**   *SC* **7.2.3.1**   *P* **66**   *L*   # 159
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**

[Table 5, order 19] -- "extended rate PHYs" is not defined in the definitions clause

SuggestedRemedy

Either add a definition of "extended rate PHY" and its acronym to clause 3, or include a reference to clause 19 in the Notes column of order 19 of Table 5.

Response   *Response Status*   **C**

ACCEPT.

Editor included in draft 5.2 in 7.2.3.1 Table 8.

Cl **07**   *SC* **7.2.3.9**   *P* **69**   *L*   # 161
FISCHER, MICHAEL A   Individual

Comment Type   **TR**   *Comment Status*   **A**

[first paragraph] -- There are a considerable number of elements with sizes constrained only by the maximum element size. Even without the complicating issues of the possible inclusion of one or more Vendor Specific elements, or an unconstrained number of information requests, it appears possible for the combined size of the information elements listed in Table 12 to exceed the maximum length of a management frame body. This situation should be addressed in the text describing the Probe Response frame format. With the inclusion of requested information elements, the size of the set of response elements is effectively unconstrained.

SuggestedRemedy

Either add a rule for determining which element(s) are to be omitted if the frame body length would otherwise exceed 2304 octets, or add a mechanism by which the responder can indicate that only the first portion of the response information is present in the frame body (along with a mechanism for transfering the subsequent portion or portions).

Response   *Response Status*   **U**

ACCEPT IN PRINCIPLE.

See resolution to comment #158.

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: Clause, Subclause, page, line

Cl   **07**
SC   **7.2.3.9**

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3/10/2006 9:40:54 AM

Submission   **Bob O'Hara, Cisco Systems**

Cl **07**   *SC* **7.2.3.9**   *P* **70**   *L*   # 101
SIMPSON, FLOYD D   Individual

Comment Type   **GR**   *Comment Status* **A**

The draft is silent on what the Order column of Tables describing management response frames, such as Table 12, for probe response means. With the case of probe request/response as an example, if a STA receives a probe request must the order of the IEs from table 12 that could be in the probe response have to follow the numerical order listed in table 12? This has come up as an issue in 11k where some people say 'yes' and others say the answer is 'no' to this question. Either way, the draft should provide normative text where necessary to make it clear whether the IEs can occur in any order or must follow the order of the table. Note: The procedures for handling the Request element in a probe request says the probe response must contain the request elements in the same order as was listed in the Request element, so it seems that interpretation of Order columns in the table 12 (an others) should be that the element in the probe response occur in the order listed in the respective table.

SuggestedRemedy

Clarify what the intent is with regard to the comment by adding normative text that explains how tables with the Order column describing management frames should be interpreted.

Response   *Response Status* **U**

ACCEPT IN PRINCIPLE.
This is explicitly defined by clause 7.1.1
7.1.1 Conventions
"The MPDUs or frames in the MAC sublayer are described as a sequence of fields in specific order. Each figure in Clause 7 depicts the fields/subfields as they appear in the MAC frame and in the order in which they are passed to the physical layer convergence procedure (PLCP), from left to right."

Clause 7.2.3 further clarifies:
"The frame body consists of the fields and information elements defined for each management frame subtype. All fields and information elements are mandatory unless stated otherwise, and they can appear only in the specified order. Stations encountering an element type they do not understand ignore that element. A STA receiving a vendor-specific IE that it does not support shall ignore the vendor-specific IE. Element type codes not explicitly defined in this standard are reserved, and do not appear in any frames. Gaps may exist in the ordering of fields and elements within frames. The order that remains shall be ascending."

Therefore, IEs must be included in a given frame in the order defined by the standard. Note that some IEs are optional and may be omitted.

However, 7.2.3 is modified by deleting "they can" and "only" to further clarify the intent. The sentence will now read "All fields and information elements are mandatory unless stated otherwise, and appear in the specified order."

Cl **07**   *SC* **7.3.1.6**   *P* **76**   *L* **1**   # 162
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status* **A**

Clarify the use of the listen interval

SuggestedRemedy

In the first line, add the words "in power save mode" after "STA"

Response   *Response Status* **C**

ACCEPT.

Editor included in draft 5.2 in 7.3.1.6.

Cl **07**   *SC* **7.3.1.7**   *P* **77**   *L*   # 163
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status* **A**

[Reason code 13] -- The meaning of "invalid information element" needs to be clarified, because this is NOT an unrecognized information element type, because those are stated to be ignored in 7.2.3.

SuggestedRemedy

Add to the Meaning column for reason code 13 text which indicates what might constitute an "invalid information element" so as to distinguish this from the case of an unrecognized information element type.

Response   *Response Status* **C**

ACCEPT.

Add explanation that an invalid information element is one defined in the standard for which the content does not meet the specifications in Clause 7.

Editor included in drat 5.2 in 7.3.1.7.

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: Clause, Subclause, page, line

Cl **07**   Page 30 of 75
SC **7.3.1.7**   3/10/2006 9:40:54 AM

Submission   **Bob O'Hara, Cisco Systems**

Cl **07**   *SC* **7.3.1.9**   *P* **79**   *L*   # 164
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status* **A**

[Status code 40] -- The meaning of "invalid information element" needs to be clarified, because this is NOT an unrecognized information element type, because those are stated to be ignored in 7.2.3.

SuggestedRemedy

Add to the Meaning column for status code 40 text which indicates what might constitute an "invalid information element" so as to distinguish this from the case of an unrecognized information element type.

Response   *Response Status* **C**

ACCEPT.

See resolution to comment #18.

Editor included in draft 5.2 in 7.3.1.9.

Cl **07**   *SC* **7.3.2**   *P* **80**   *L*   # 28
O'HARA, ROBERT   Individual

Comment Type   **T**   *Comment Status* **A**

As all bits in the Capability Information Field are now consumed, a new place to identify the use of new capabilities must be defined. An information element is the perfect place for this.

SuggestedRemedy

Add a new "Extended Capability Information Field" IE that is a bit field capabile of extension to the full length of an IE.

Response   *Response Status* **C**
ACCEPT. Incorporate text from 11/06-0191r0.

Editor included in draft 5.2 in 7.3.2 Table 26 and in 7.3.2.27.

Cl **07**   *SC* **7.3.2**   *P* **80**   *L*   # 165
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status* **A**

[Table 22] -- This table would be more useful if there were an additional column that indicated the length, or range of possible lengths that are defined for each element ID.

SuggestedRemedy

Add a "Length in Octets" column to Table 22.

Response   *Response Status* **C**
ACCEPT.

Editor included in draft 5.2 in 7.3.2 Table 26.

Cl **07**   *SC* **7.3.2.13**   *P* **91**   *L*   # 169
FISCHER, MICHAEL A   Individual

Comment Type   **TR**   *Comment Status* **A**

[5th paragraph on page] -- The statement "if a member of anb IBSS detects one or more &" does not make it clear whether the Barker_Preamble_Mode bit should be set to 1 in ERP information elements only when sent by the detecting station or in such elements in beacons by any stations that either did the detecting or received a beacon with this bit set to 1.

SuggestedRemedy

Clarify the temporal extent and set of stations that are to set the Barker_preamble_mode bit.

Response   *Response Status* **U**
ACCEPT IN PRINCIPLE.

Change "If a member of an IBSS detects one or more non-short preamble-capable STAs that are members of the same
IBSS, then the Barker_Preamble_Mode bit should be set to 1 in the transmitted ERP Information Element." to "If a member of an IBSS detects one or more non-short preamble-capable STAs that are members of the same
IBSS or receives a Beacon from a member of the same IBSS with the Barker_Mode_Preamble bit set to 1, then the Barker_Preamble_Mode bit should be set to 1 in the transmitted ERP Information Element.

Editor included in draft 5.2 in 7.3.2.13.

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: Clause, Subclause, page, line

Cl **07**
SC **7.3.2.13**

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3/10/2006 9:40:54 AM

Submission   **Bob O'Hara, Cisco Systems**

Cl **07** *SC* **7.3.2.15** *P* **93** *L* # 170

FISCHER, MICHAEL A   Individual

Comment Type **E** *Comment Status* **A**

[1st paragraph on page] -- The statement of units of decibels is inconsistent with others in adjacent subclauses.

SuggestedRemedy

At the end of the second sentence of the paragraph, add the text "relative to 1mW"

Response *Response Status* **C**

ACCEPT.

Editor included in draft 5.2 in 7.3.2.15.

Cl **07** *SC* **7.3.2.23** *P* **103** *L* # 171

FISCHER, MICHAEL A   Individual

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

[6th paragraph] -- It is inadvisable for a quiet interval to prevent transmission of the next beacon, but the constraint on the magnitude of the Quiet Offset does not achieve the necessary restriction.

SuggestedRemedy

Preferred: Change "The value of the Quiet Offset field shall be less than one beacon interval." to "The sum of the values of the Quiet Duration field and the Quiet Offset field shall be less than one beacon interval." The alternative resolution is to add rules (presumably in 11.6) for the handling of the case where the quiet interval extends across a TBTT -- is the beacon delayed, as with busy medium at TBTT or is the beacon never sent. Also the case of the interaction between quiet intervals and the IBSS distributed beacon generation algorithm needs to be covered by such rules.

Response *Response Status* **U**

REJECT.

The text of 11.6.2 is clear that the NAV is set during the quiet interval. This clearly makes use of the existing NAV mechanisms, including those used for the transmission of a Beacon.

Cl **07** *SC* **7.3.2.25** *P* **104** *L* # 172

FISCHER, MICHAEL A   Individual

Comment Type **E** *Comment Status* **A**

[Figure 77] -- The representation of the lengths of the various fields is inconsistent with said representation in the figures that show the formats of other information elements.

SuggestedRemedy

Change the format of Figure 77 to match the other element format figures.

Response *Response Status* **C**

ACCEPT.

Editor included in draft 5.2 in Figure 90 of 7.3.2.25.

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: Clause, Subclause, page, line

Cl **07**
SC **7.3.2.25**

Submission   **Bob O'Hara, Cisco Systems**

Cl **07**   *SC* **7.3.2.26**   *P* **109**   *L*   # 232

FISCHER, MICHAEL A   Individual

Comment Type   **GR**   *Comment Status*   **A**

Vendor specific information elements are permitted in the bodies of management frames, but there are no service primitives, either at the MLME SAP or elsewhere, by which the contents of these elements can be transferred into and out of the MAC. Because the generation and interpretation of management frames are fully contained within the MAC, this lack of service primitives renders vendor specific information elements (formally) useless. While it could be argued that vendor specific information elements can be transferred to/from the MAC exclusively by informal means, doing so is inconsistent with the extreme effort to provide adequate primitive functionality at the MLME-SAP to allow generation and reporting of all defined management frame types.

SuggestedRemedy

Add (to clause 10) MLME-VENDOR.request, .confirm, and .indication primitives that each have as parameters, zero or more vendor specific information elements.

Response   *Response Status*   **U**

ACCEPT IN PRINCIPLE.

Many other parameters are also provided to the MAC via "informal" means, e.g. via MIB objects. While adding primitives to clause 10 to allow the SME to provide vendor specific information might appear to help the situation it also makes matters worse because now the temporal aspects of the new primitives wrt the existing primitives is an additional factor/complication.

For example, if one desires to provide the parameters for a probe request action, presumably those must be provided *before* the PROBE-REQUEST.request. Similarly, the new .indication would need to somehow be coupled to the corresponding existing .indication.

Alternatively one can use the existing MLME_GET and SET primitives to affect change and query of MAC internal parameters relating to vendor specific capabilities.

Alternatively one could add vendor specific arguments to all the affected existing primitives, so that those arguments could (optionally) be provided simultaneously with the existing invocations. This approach would more closely couple the vendor specific information to the actual action at hand and eliminate the need for temporal alignment of primitives.

Therefore the proposed resolution is:
Add vendor specific arguments to all the existing primitives that correspond to frame sequences that now included vendor specific information elements.

Add the "VendorSpecificInfo" parameter as the last parameter in all clause 10 management primitives for association, reassociation, disassociation, authentication, deauthentication, start, join, scan, measurement request, channel measurement, measurement report,

channel switch, TPC request, addTS, and deleteTS.

As description of the parameter in all service primitives, add the following text in the parameter tables:
Name: VendorSpecificInfo
Type: a set of information elements
Valid range: as defined in 7.3.2.26
Description: zero or more information elements

Cl **07**   *SC* **7.3.2.6**   *P* **84**   *L*   # 166

FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**

[next to last paragraph] -- Future tense used in last sentence in paragraph.

SuggestedRemedy

Change "will be" to "is"

Response   *Response Status*   **C**

ACCEPT.

Editor included in draft 5.2 in 7.3.2.6.

Cl **07**   *SC* **7.3.2.6**   *P* **84**   *L*   # 167

FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**

[last paragraph] -- Clarify the length of the TIM element in the event that all bits other than bit 0 are 0.

SuggestedRemedy

Add "and the length field is 4." to the end of the sentence.

Response   *Response Status*   **C**

ACCEPT.

Editor included in draft 5.2 in 7.3.2.6.

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: Clause, Subclause, page, line

Cl **07**   Page 33 of 75
SC **7.3.2.6**   3/10/2006 9:40:54 AM

Submission   **Bob O'Hara, Cisco Systems**

Cl **07**   *SC* **7.3.2.9**   *P* **85**   *L*   # 168

FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**

[NOTE at bottom] -- This NOTE appears to be an editing artifact.

SuggestedRemedy

Either removed the NOTE or reword so the reference to what text is or is not unnecessary is clear in the present context.

Response   *Response Status*   **C**

ACCEPT.

Editor deleted text in draft 5.2 in 7.3.2.9.

Cl **07**   *SC* **7.3.2.9**   *P* **86**   *L* **3**   # 289

ECCLESINE, PETER   Individual

Comment Type   **GR**   *Comment Status*   **A**

*** Comment submitted with the file 684900024-Figure51.tif attached ***
Figure 51 does not correctly show all cases, whether Regulatory classes are required or not

SuggestedRemedy

Redraw as shown in attached file

Response   *Response Status*   **U**

ACCEPT.

See duplicate comment #87 for editorial resolution.

Cl **08**   *SC* **8.1.3**   *P* **113**   *L* **1**   # 74

DHARANIPRAGADA, KALYAN R   Individual

Comment Type   **G**   *Comment Status*   **A**

Usage of "a RSNA" and "an RSNA" is inconsistent

SuggestedRemedy

Use "a RSNA"

Response   *Response Status*   **C**

ACCEPT. The text is to made consistent.

Editor included in draft 5.2 by changing TWO instances to "an RSNA" in 3.127 and 8.1.

Cl **08**   *SC* **8.1.3**   *P* **113**   *L* **6**   # 75

DHARANIPRAGADA, KALYAN R   Individual

Comment Type   **G**   *Comment Status*   **A**

words "to protect" are redundant

SuggestedRemedy

It programs the agreed-upon temporal keys and cipher suitesinto the MAC and invokes protection.

Response   *Response Status*   **C**

ACCEPT. Delete "to protect" from the first sentence of 8.1.3 a) 6).

Editor included in draft 5.2 in 8.1.3.

Cl **08**   *SC* **8.2.1.2**   *P*   *L*   # 18

STEPHENS, ADRIAN P   Individual

Comment Type   **E**   *Comment Status*   **A**

Footnote to Figure 86 seems out of place.

SuggestedRemedy

If it's necessary to say this, put it in a section on document conventions.

Response   *Response Status*   **C**

ACCEPT.

The footnote is not a necessary statement.

Delete the footnote.

Editor included in draft 5.2 in 8.2.1.2.

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: Clause, Subclause, page, line

Cl **08**
SC **8.2.1.2**

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Submission   **Bob O'Hara, Cisco Systems**

Cl **08**   *SC* **8.3.2**   *P* **123**   *L*   # 105
HALASZ, DAVID E   Individual

Comment Type   **G**   *Comment Status* **A**

The QoS user priority is protected by the Michael MIC. However, it isn't included for encryption/decryption. In this case, the packet would decrypt but then have a MIC error. This would cause counter measures to be invoked.

SuggestedRemedy

One way to address this is to create a TKIPv2. I'm not sure that this issue is sufficient to create a TKIPv2. However, if one was desired the QoS user priority could be included in the IV. In this way, if the QoS user priority was modified, the decryption would fail and the packet would be rejected without counter measures being invoked.

One arguement for not addressing this issue is because AES-CCMP does not have this issue. Users concerned about the issue could use AES-CCMP instead.

Also, wireless is inherently open to localized denial of service. This would argue against addressing the issue.

Response   *Response Status* **C**

ACCEPT.

Wireless is inherently open to localized denial of service. TKIP has always been seen as a mechanism that has a very limited life, due to some of the weaknesses of the underlying usage of RC4 and the Michael MIC. Adding an updated TKIPv2 built on the same underlying mechanisms would not prolong the life of TKIP and would require significant changes to all TKIP implementations. No change to the draft is required to address this issue.

Cl **08**   *SC* **8.3.2.4**   *P* **129**   *L* **1**   # 77
DHARANIPRAGADA, KALYAN R   Individual

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

TKIP countermeasures optional/configurable?

SuggestedRemedy

Introduce dot11RSNATKIPCounterMeasures = TRUE (default) in dot11PrivacyTable

Response   *Response Status* **C**

REJECT. The use of countermeasures in TKIP cannot be made configurable. To protect against frame forgeries, an attacker must require a certain, large amount of time to mount a successful attack against the MIC. In order to make the successful attack time large enough, the countermeasures must be carried out at a rate no less than that specified in the standard.

Cl **08**   *SC* **8.3.2.4**   *P* **129**   *L* **1**   # 76
DHARANIPRAGADA, KALYAN R   Individual

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

The standard requires the rate of MIC failures < 2 per 60 seconds! i.e. STA/Aps detecting 2 MIC failures in 60s must disable all receptions using TKIP for 60s. In addition the PTK and GTK should be changed (renegotiated) using a 4-way handshake. Can we have a MIB variable to configure the rate and set the default to 2/60

SuggestedRemedy

Introduce dot11RSNATKIPCounterMeasureRate = 2 (default) in dot11PrivacyTable

Response   *Response Status* **C**

REJECT. The reason the rate of 2 per 60s is chosen is that to obtain the security objectives of the Michael MIC, i.e., to protect against frame forgeries, an attacker must require a certain, large amount of time to mount a successful attack against the MIC. In order to make the successful attack time large enough, the countermeasures must be carried out at a rate no less than that specified in the standard.

Cl **08**   *SC* **8.3.3.3.3**   *P* **140**   *L*   # 73
SHVODIAN, WILLIAM M   Individual

Comment Type   **E**   *Comment Status* **A**

Some of the figures are very clear visually like Figures 100 and 101. Others are quite blocky and poor quality, like figure 89, 94, 95, 98, 99, 102, 103, and 104. This draft would be easier to read and look more professional if all of the figures had the same level of high quality.

SuggestedRemedy

Imporve the visual quality of the figures.

Response   *Response Status* **C**

ACCEPT. The editor is directed to determine a method to maintain a common, high quality for the figures.

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: Clause, Subclause, page, line

Cl **08**
SC **8.3.3.3.3**

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Submission											**Bob O'Hara, Cisco Systems**

Cl **08**   *SC* **8.4.1.2.1**   *P* **145**   *L*   # 30
O'HARA, ROBERT   Individual

Comment Type   **E**   *Comment Status*   **A**
    The reference to section 5.5 is incorrect, after 5.5 was changed to 5.6.

SuggestedRemedy
    change "5.5" to "5.6".

Response   *Response Status*   **C**
    ACCEPT.

    Editor included in draft 5.2 in 8.4.1.2.1.

Cl **08**   *SC* **8.5.1.1**   *P*   *L*   # 84
MYLES, ANDREW F   Individual

Comment Type   **TR**   *Comment Status*   **R**   *security*
    There is some concern that SHA-1 is not sufficiently strong as part of the PRF for the long
    term, although it is considered adaquate in the short to medium term.

SuggestedRemedy
    Make a modification in 7.3.2.25.2 , 8.5.1.1 and possibly other clauses to allow the use of
    SHA-256 as part of the PRF instead of SHA-1 in a backward compatible way.

    In doing so other changes could also be made to the PRF to make precomputation attacks
    harder and prefix attacks impossible.

Response   *Response Status*   **U**
    REJECT.

    The suggested remedy does not provide sufficient guidance to resolve this comment.

Cl **08**   *SC* **8.5.1.2**   *P* **156**   *L* **2**   # 16
STEPHENS, ADRIAN P   Individual

Comment Type   **TR**   *Comment Status*   **A**
    (Submitted on behalf of Jesse Walker, TGi edior)
    Line 2 says: "PMK <-- L(PTK, 0, 256)"
    This was an editorial error with normative consequences.

SuggestedRemedy
    Replace the quoted text with:
    PMK <-- L(AAA Key, 0, 256)

Response   *Response Status*   **U**
    ACCEPT.

    Editor included similar in draft 5.2 in 8.5.1.2. Replacement text is MSK not AAA Key.

Cl **08**   *SC* **8.5.1.2**   *P* **156**   *L* **2**   # 29
O'HARA, ROBERT   Individual

Comment Type   **T**   *Comment Status*   **A**
    the formula PMK=L(PTK,0,256) is incorrect. The text is clearly
    stating that PMK is the first 256 bits of the AAA key.

SuggestedRemedy
    Replace "PTK" with "AAA key".

Response   *Response Status*   **C**
    ACCEPT.

    See #16 for editorial resolution.

Cl **08**   *SC* **8.5.7.2**   *P* **188**   *L* **37**   # 1
KARCZ, KEVIN J   Individual

Comment Type   **E**   *Comment Status*   **A**
    EAPOL misspelled in definition of GTimeoutCtr as EAPIOL.

SuggestedRemedy
    edit

Response   *Response Status*   **C**
    ACCEPT.

    Editor included in draft 5.2 in 8.5.7.2.

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: Clause, Subclause, page, line

Cl **08**
SC **8.5.7.2**

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Submission   **Bob O'Hara, Cisco Systems**

Cl **09** *SC* **9.1.4** *P* **198** *L* # 173
FISCHER, MICHAEL A Individual

Comment Type **E** *Comment Status* **A**
[3rd paragraph] -- Typo in attribute name

SuggestedRemedy
Delete the initial "a" in "adot11FragmentationThreshold"

Response *Response Status* **C**
ACCEPT.

Editor included in draft 5.1 in 9.1.5.

Cl **09** *SC* **9.10** *P* **229** *L* **6** # 228
FISCHER, MICHAEL A Individual

Comment Type **E** *Comment Status* **A**
There are no requirements relevant (in any discernable way) to the ERP information element in subclause 9.2.6.

SuggestedRemedy
Substitute the correct subclause number for "9.2.6"

Response *Response Status* **C**
ACCEPT.

Replace "9.2.6" with "9.6". The comment is made against the new clause 9.13, first paragraph.

Cl **09** *SC* **9.10** *P* **230** *L* # 229
FISCHER, MICHAEL A Individual

Comment Type **T** *Comment Status* **A**
[3rd paragraph on page] -- The list of frames which propagate the NAV throughout the BSS is incomplete.

SuggestedRemedy
Replace "nonzero CF time, and CF-End frames" with "nonzero CFDurRemaining, CF-End frames, and CF-End+ACK frames"

Response *Response Status* **C**
ACCEPT.

Editor included in draft 5.2 in 9.13.

Cl **09** *SC* **9.2** *P* **199** *L* # 175
FISCHER, MICHAEL A Individual

Comment Type **E** *Comment Status* **A**
[7th paragraph] -- "cannot" is too absolute

SuggestedRemedy
In the last sentence on the page, change "cannot" to "may not be able to"

Response *Response Status* **C**
ACCEPT.

Editor included in draft 5.2 in 9.2.

Cl **09** *SC* **9.2** *P* **199** *L* # 174
FISCHER, MICHAEL A Individual

Comment Type **E** *Comment Status* **A**
[4th paragraph] -- The relevant field name in the formats of both RTS (7.2.1.1) and CTS (7.2.1.2) is "Duration"

SuggestedRemedy
In the 3rd line of the 4th paragraph of this subclause, change "Duration/ID field" to "Duration field"

Response *Response Status* **C**
ACCEPT.

Editor included in draft 5.2 in 9.2.

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: Clause, Subclause, page, line

Cl **09**
SC **9.2**

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Submission **Bob O'Hara, Cisco Systems**

Cl **09**   *SC* **9.2**   *P* **200**   *L*   # 178
FISCHER, MICHAEL A   Individual

Comment Type   **TR**   *Comment Status*   **A**

[4th paragraph on page] -- There is no parameter named "aBasicRateSet" in either MLME-JOIN.request or MLME-START.request

SuggestedRemedy

Change "aBasicRateSet" to the correct parameter, and identify the proper source(s) of this parameter. Presumably the reference should be to the BSSBasicRateSet, except this is a parameter of MLME-START.request, but not of MLME-JOIN.request.

Response   *Response Status*   **U**

ACCEPT.

Replace "aBasicRateSet specified parameter of the MLME-JOIN.request and MLME-START.request" with "BSSBasicRateSet parameter of the MLME-START.request or BSSBasicRateSet of the BSSDescription representing the SelectedBSS parameter of the MLME-JOIN.request".

Editor included in draft 5.2 in 9.2.

Cl **09**   *SC* **9.2**   *P* **200**   *L*   # 179
FISCHER, MICHAEL A   Individual

Comment Type   **TR**   *Comment Status*   **A**

[5th paragraph on page] -- The statement regarding not indicating data type frames to LLC when the frame body is null is either incorrect or in need of clarification. Data type frames of subtype Null Function are NOT indicated to LLC. Both consistency with other 802 MAC standards and with technical decisions made by the WG during development of the 1997 & 1999 standards, suggest that a data type frame of subtype Data SHOULD be indicated to LLC, even if the frame body is null (meaning 0 octets). Indeed, there were several instances during WG meetings when this specific question came up, and was answered that the functional difference between a Null frame and a Data frame with a null payload was that the former was not indicated to LLC, whereas the later was indicated to LLC.

SuggestedRemedy

If the intent is that data type frames of subtype Data should not be indicated to LLC when the frame body contains zero octets, change "shall not indicate a data frame to LLC when the frame body is null." to "shall not indicate a data frame to LLC when either the subtype is Null Function or the subtype is Data and the frame body contains zero octets." If the intent is that (valid, appropriately addressed) data type frames of subtype Data should always be indicated to LLC, change "shall not indicate a data frame to LLC when the frame body is null." to "shall not indicate a data frame to LLC when the subtype is Null Function, but shall indicate a data frame to LLC when the subtype is Data, even if the frame body contains zero octets."

Response   *Response Status*   **U**

ACCEPT.

change "shall not indicate a data frame to LLC when the frame body is null." to "shall not indicate a data frame to LLC when the subtype is Null Function, but shall indicate a data frame to LLC when the subtype is Data, even if the frame body contains zero octets."

Editor included in draft 5.2 in 9.2.

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: Clause, Subclause, page, line

Cl **09**
SC **9.2**

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Submission   **Bob O'Hara, Cisco Systems**

Cl **09**   *SC* **9.2**   *P* **200**   *L*   # 176
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**
[1st paragraph] -- "immediate address" is unclear

SuggestedRemedy
In the first sentence of the first paragraph on the page, change "immediate" to "destination" and change "multiple destinations" to "multiple recipients"

Response   *Response Status*   **C**
ACCEPT.

Editor included in draft 5.2 in 9.2.

Cl **09**   *SC* **9.2**   *P* **200**   *L*   # 177
FISCHER, MICHAEL A   Individual

Comment Type   **TR**   *Comment Status*   **A**
[3rd paragraph on page] -- The statement "shall always respond to an RTS addressed to it with a CTS" is incorrect, because such CTS response does not occur if the NAV indicates medium busy at the station receiving the RTS.

SuggestedRemedy
At the end of the 3rd paragraph on the page, add the text "if permitted by medium access rules."

Response   *Response Status*   **U**
ACCEPT.

Editor included in draft 5.2 in 9.2.

Cl **09**   *SC* **9.2.1**   *P* **200**   *L*   # 180
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**
[3rd paragraph] -- The two subclauses listed as containing mechanisms for setting the NAV are not all of the places where NAV update rules are given. These references appear to give special status to those two subclauses.

SuggestedRemedy
Extend this paragraph to include references to all subclauses of clause 9 where significant rules regarding NAV update are given. This will be quite useful, especially to new readers of the standard.

Response   *Response Status*   **C**
ACCEPT IN PRINCIPLE.

Commenter did not provide any references to include.

Editor included in draft 5.2 in 9.2.1 by adding a reference to 9.9.2.2.1.

Cl **09**   *SC* **9.2.10**   *P* **212**   *L*   # 201
FISCHER, MICHAEL A   Individual

Comment Type   **T**   *Comment Status*   **A**
[2nd paragraph] -- It is unclear whether "first symbol of the next frame on the medium" means the first symbol of the preamble (which, for some PHYs is a different-duration training symbol) or the first symbol of the PHY (PLCP) header.

SuggestedRemedy
Clarify by stating "first symbol of the preamble of the next frame on the medium"

Response   *Response Status*   **C**
ACCEPT.

Editor included in draft 5.2 in 9.2.10.

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: Clause, Subclause, page, line

Cl **09**
SC **9.2.10**

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3/10/2006 9:40:54 AM

Submission   **Bob O'Hara, Cisco Systems**

Cl **09**   *SC* **9.2.10**   *P* **212**   *L*   # 200
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**
[Figure 133] -- "aMACPrcDelay" is inconsistent with 10.4.3.2, where the parameter is named "aMACProcessingDelay"

SuggestedRemedy
Change "aMACPrcDelay" to "aMACProcessingDelay"

Response   *Response Status*   **C**
ACCEPT.

Editor included in draft 5.2 in Figure 165.

Cl **09**   *SC* **9.2.2**   *P* **200**   *L*   # 182
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**
[2nd paragraph] -- In the 2nd sentence of the 2nd paragraph, the mention of "the error mahy have occurred in the reception of the ACK frame" leaves out the possibility that the error might have occurred due to a collision or attenuation event on the WM.

SuggestedRemedy
Change "reception of the ACK" to "transfer or reception of the ACK"

Response   *Response Status*   **C**
ACCEPT.

Editor included in draft 5.2 in 9.2.2.

Cl **09**   *SC* **9.2.2**   *P* **200**   *L*   # 181
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**
[2nd paragraph] -- In the 1st sentence of the 2nd paragraph, the use of "source STA" is ambiguous, as it could reasonably refer to either the source of the frame being acknowledged or the source of the acknowledgement.

SuggestedRemedy
Change "source STA" to "STA initiating the frame exchange"

Response   *Response Status*   **C**
ACCEPT.

Editor included in draft 5.2 in 9.2.2.

Cl **09**   *SC* **9.2.3.1**   *P* **201**   *L* **1**   # 183
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**
The statement "SIFS shall be used for an ACK frame" is unclear -- "used for" is imprecise as to the proper time of usage.

SuggestedRemedy
Change "for an ACK" to "prior to transmission of an ACK"

Response   *Response Status*   **C**
ACCEPT.

Editor included in draft 5.2 in 9.2.3.1.

Cl **09**   *SC* **9.2.3.1**   *P* **201**   *L* **2**   # 184
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**
The "It" at the beginning of the 2nd sentence of the paragraph is ambiguous.

SuggestedRemedy
Change "It" to "SIFS"

Response   *Response Status*   **C**
ACCEPT.

Editor included in draft 5.2 in 9.2.3.1.

Cl **09**   *SC* **9.2.3.4**   *P* **202**   *L*   # 185
FISCHER, MICHAEL A   Individual

Comment Type   **T**   *Comment Status*   **A**
[last sentence] -- The statement tha the "station reverts to NAV" appears to indicate that CCA is not used at this point.

SuggestedRemedy
Change "reverts to the NAV" to "reverts to the NAV and physical CS"

Response   *Response Status*   **C**
ACCEPT IN PRINCIPLE.

Change "reverts to the NAV" in the last sentence to "reverts to normal medium access".

Editor included in draft 5.2 in 9.2.3.5.

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: Clause, Subclause, page, line

Cl **09**
SC **9.2.3.4**

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Submission   **Bob O'Hara, Cisco Systems**

Cl **09**   *SC* **9.2.3.4**   *P* **202**   *L*   # 81

MORETON, MIKE — Individual

Comment Type **TR**   *Comment Status* **A**   *11e*

There are changes to EIFS behaviour, but these contradict changes made in the 802.11e ammendment.

SuggestedRemedy

Incorporate the 802.11e ammendment into this revision

Response   *Response Status* **U**

ACCEPT.

Editor included in draft 5.1.

Cl **09**   *SC* **9.2.4**   *P* **203**   *L* **1**   # 186

FISCHER, MICHAEL A — Individual

Comment Type **E**   *Comment Status* **A**

In the sentence beginning "Once it reaches aCWmax" the referent of "it" is ambiguous.

SuggestedRemedy

Change "it" to "CW"

Response   *Response Status* **C**

ACCEPT.

Editor included in draft 5.2 in 9.2.4.

Cl **09**   *SC* **9.2.5.1**   *P* **203**   *L*   # 187

FISCHER, MICHAEL A — Individual

Comment Type **E**   *Comment Status* **A**

[last paragraph on page] -- There are two references to "backoff algorithm" when the activity being described is defined in 9.2.5.2 as the "backoff procedure"

SuggestedRemedy

Change both instances of "algorithm" to "procedure"

Response   *Response Status* **C**

ACCEPT.

Editor included in draft 5.2 in 9.2.5.1.

Cl **09**   *SC* **9.2.5.1**   *P* **204**   *L*   # 188

FISCHER, MICHAEL A — Individual

Comment Type **E**   *Comment Status* **A**

[Figure 126] -- The label "Select Slot and Decrement Backoff&" is confusing, because what is selected under the backoff procedure is the backoff time, which is in units of the slot time.

SuggestedRemedy

Change "Slot" to "Backoff Time"

Response   *Response Status* **C**

ACCEPT.

Editor included in draft 5.2 in Figure 158.

Cl **09**   *SC* **9.2.5.2**   *P* **204**   *L*   # 191

FISCHER, MICHAEL A — Individual

Comment Type **G**   *Comment Status* **A**

[last paragraph on page] -- In this paragraph, and several others scattered throughout clause 9, are repetitive, although not always identical, recitations of the criteria for use of EIFS. This would be much less prone to misinterpretation, as well as being easier to maintain in the future, if there was a SINGLE PLACE where the criteria for use of EIFS versus DIFS were defined, in relation to the appropriate PHY service primitives, and all other places were modified to just refer to "EIFS" or "DIFS or EIFS as appropriate, see X.Y.Z" rather than trying to rehash the EIFS usage rules each time.

SuggestedRemedy

Make 9.2.3.4 the single point of definition of the criteria for use of EIFS, in relation to PHY service primitives and MAC validity checks. Remove the partial restatement of these criteria from all other references to the use of EIFS, with addition of an explicit reference to 9.2.3.4 if necessary.

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Editor included in draft 5.2 in 9.2.5.2 and 9.9.1.5.

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: Clause, Subclause, page, line

Cl **09**
SC **9.2.5.2**

Submission   **Bob O'Hara, Cisco Systems**

Cl **09**   *SC* **9.2.5.2**   *P* **205**   *L*   *#* 189
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**

[3rd paragraph on page] -- The reference in the middle of this paragraph to "ACK timeout interval" should be to "ACKTimeout interval" and should include the forward reference to where this interval is defined.

SuggestedRemedy

Change "ACK timeout interval" to "ACKTimeout interval" and insert immediately thereafter "(defined in 9.2.8)"

Response   *Response Status*   **C**

ACCEPT.

Editor included in draft 5.2 in 9.2.5.2.

Cl **09**   *SC* **9.2.5.2**   *P* **205**   *L*   *#* 192
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**

[4th paragraph on page] -- The statement about which station will win the contention is based on an unstated, and non-obvious, assumption.

SuggestedRemedy

At the end of the paragraph, insert the text "(assuming all of the contending stations detect the same instances of WM activity at their respective receivers)"

Response   *Response Status*   **C**

ACCEPT.

Editor included in draft 5.2 in 9.2.5.2.

Cl **09**   *SC* **9.2.5.2**   *P* **205**   *L*   *#* 190
FISCHER, MICHAEL A   Individual

Comment Type   **G**   *Comment Status*   **A**

[3rd paragraph on page] -- In this paragraph, and many other places in clauses 9 and 11, the concept of "successful" transmission or frame transfer is mentioned. This concept does have a specific meaning herein -- and that meaning includes BOTH transmission of a directed frame along with the receipt of the acknowledgement thereto, and transmission of a multicast or broadcast frame (which is deemed to always be "successful" upon completion of the transmission). However, there is not a single place where this definition can be found, nor is it always clear when an instance of "successful" refers to this concept.

SuggestedRemedy

Add a definition of "successful transmission" in one place (either in clause 3 or clause 9), and do a global search to ensure that all references to this concept use the proper terminology (perhaps capitalizing "Successful" to make this usage more obvious).

Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.

A sentence will be added to explain a successful transmission. References will be added to this explanation as needed. Also, the concept of an unsuccessful transmission will also be explained.

Editor included in draft 5.2 in 9.1.1, 9.1.5, 9.2.5.2, and 9.2.5.5.

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: Clause, Subclause, page, line

Cl **09**
SC **9.2.5.2**

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Submission   **Bob O'Hara, Cisco Systems**

Cl **09**   *SC* **9.2.5.4**   *P* **206**   *L*   # 79
MORETON, MIKE   Individual

Comment Type   **TR**   *Comment Status* **A**
A STA should update its NAV if it receives a broadcast frame with a non-zero duration -
otherwise there would be no point in sending one. While it could be argued that this is
already the requirement, there seems to be some confusion, so it's best clarified.

SuggestedRemedy
Rephrase the first sentence as: "STAs receiving a valid frame shall update their NAV with
the information received in the Duration/ID field,
but only when the new NAV value is greater than the current NAV value and only when the
frame is not
addressed to the unicast address of the receiving STA."

Response   *Response Status* **U**
ACCEPT IN PRINCIPLE.

Replace the first sentence in 9.2.5.4 with the following:
STAs receiving a valid frame shall update their NAV with the information received in the
Duration/ID field for all frames where the new NAV value is greater than the current NAV
value, except those where the RA is equal to the receiving STA's MAC address.

Editor included in draft 5.2 in 9.2.5.4.

Cl **09**   *SC* **9.2.5.5**   *P* **208**   *L*   # 193
FISCHER, MICHAEL A   Individual

Comment Type   **T**   *Comment Status* **A**
[last line in subclause] -- Unacknowledged fragments are not always retransmitted, so the
use of "shall" is not correct.

SuggestedRemedy
Change "shall be retransmitted" to "may be retransmitted"

Response   *Response Status* **C**
ACCEPT IN PRINCIPLE.

Delete the last sentence. It adds no information beyond what is above it in the clause.

Editor included in draft 5.2 in 9.2.5.5.

Cl **09**   *SC* **9.2.5.6**   *P* **209**   *L*   # 196
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status* **A**
[Figure 131] -- The left edge of the rectangle "NAV (Fragment)" in the top section of the
diagram is not aligned over the right edge of the rectangle "Fragment" in the lower section
of the diagram.

SuggestedRemedy
Extend the left edge of the "NAV (Fragment)" rectangle so that it is visually aligned over the
right edge of the "Fragment" rectangle.

Response   *Response Status* **C**
ACCEPT.

Editor included in draft 5.2 in Figure 163.

Cl **09**   *SC* **9.2.5.7**   *P* **209**   *L*   # 195
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status* **A**
[1st paragraph] -- The relevant field name in the format of CTS (7.2.1.2) is "Duration"

SuggestedRemedy
In the last sentence of the 1st paragraph, change "Duration/ID field of the CTS frame" to
"Duration field of the CTS frame"

Response   *Response Status* **C**
ACCEPT.

Editor included in draft 5.2 in 9.2.5.7.

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: Clause, Subclause, page, line

Cl **09**
SC **9.2.5.7**

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Submission   **Bob O'Hara, Cisco Systems**

Cl **09**   *SC* **9.2.5.7**   *P* **209**   *L*   # 194

FISCHER, MICHAEL A   Individual

Comment Type   **TR**   *Comment Status*   **A**

[1st paragraph] -- The rule for adjusting the duration value from the RTS frame for use in the CTS frame is inconsistent with the rule for the data rate to use for control response frames in 9.6. Here (9.2.5.7) the rate for the CTS is stated to be the same as used for the RTS, whereas in 9.6 the control response (which includes CTS) is stated to be sent at the highest rate in BSSBasicRateSet that is less than or equal to the rate of the immediately previous frame.

SuggestedRemedy

Use a consistent rule for CTS data rate in 9.2.5.7 and 9.6. This commenter believes the rule in 9.6 is correct and that 9.2.5.7 should be updated to match.

Response   *Response Status*   **U**

ACCEPT.

Change "required to transmit a CTS frame at the data rate used for the RTS frame to which this CTS frame is a response." to "required to transmit the CTS frame at a data rate determined by the rules in 9.6."

Editor included in draft 5.2 in 9.2.5.7.

Cl **09**   *SC* **9.2.5.7**   *P* **209**   *L*   # 280

FISCHER, MICHAEL A   Individual

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

[2nd paragraph] -- There is no parameter defined with the name "aPHY-RX-START-Delay" -- but there needs to be, although implementation-neutral definition of such a parameter is complicated by the fact that, for the OFDM PHYs, this delay varies with data rate as well as with implementation of the Viterbi decoder.

SuggestedRemedy

Change "aPHY-RX-START-Delay" to "aRXSTARTDelay" and create a new parameter in PLME-CHARACTERISTICS.confirm (10.4.3.2) named "aRXSTARTDelay" with a description of "The maximum time (in microseconds) that the PHY requires between the start of the first symbol of an incoming PHY header on the WM and generation of the PHY-RXSTART.indication primitive to the MAC. If this delay varies with data rate or modulation type, the parameter value shall be the longest among those supported by the PHY." Then add appropriate mention of this constraint in the definition of PHY-RXSTART.indication in 12.3.5.11.3, and add a row to the PHY Characteristics tables of each PHY (clauses 14-19) defining the value of this parameter. For the non-OFDM PHYs, the proper value is probably aPreambleLength + aPLCPHeaderLength + aRxRFDelay + aRxPLCPDelay + aSymbolTime. In the case of the OFDM PHYs, the value is likely to be "implementation dependent," in which case the following upper bound needs to be specified: "aRXSTARTDelay shall not exceed aPreambleLength + aPLCPHeaderLength + (N x aSymbolTime) + aRxRFDelay + aRxPLCPDelay - B; where N represents the integer number of symbols required to encode a CTS or ACK control frame and B represents the length of time required for 14 PHY-DATA.indication primitives."

Response   *Response Status*   **U**

REJECT.

The parameter is defined in each individual PHY clause.

Cl **09**   *SC* **9.2.6**   *P* **210**   *L*   # 197

FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**

[1st paragraph on page] -- The description of the time when the data frame is to be transmitted is poorly worded.

SuggestedRemedy

Change "after the end of the CTS frame and a SIFS period" to "starting one SIFS period after the end of the CTS frame"

Response   *Response Status*   **C**

ACCEPT.

Editor included in draft 5.2 in 9.2.6.

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: Clause, Subclause, page, line

Cl **09**
SC **9.2.6**

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Submission   **Bob O'Hara, Cisco Systems**

Cl **09**   *SC* **9.2.7**   *P* **210**   *L* **5**   # 198
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**

The listed rules should include mention of the ACK procedure in addition to the RTS/CTS exchange.

SuggestedRemedy

Insert the text "and the ACK procedure" immediately after the words "RTS/CTS exchange"

Response   *Response Status*   **C**

ACCEPT.

Editor included in draft 5.2 in 9.2.7.

Cl **09**   *SC* **9.2.8**   *P* **210**   *L*   # 199
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**

[2nd paragraph] -- The wording of the reference to medium state for the ACK response in the last sentence of the 2nd paragraph should be consistent with the wording regarding the CTS in 9.2.6.

SuggestedRemedy

Change "CS mechanism" to "medium"

Response   *Response Status*   **C**

ACCEPT.

Editor included in draft 5.2 in 9.2.6.

Cl **09**   *SC* **9.2.8**   *P* **210**   *L*   # 281
FISCHER, MICHAEL A   Individual

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

[3rd paragraph] -- There is no parameter defined with the name "aPHY-RX-START-Delay" -- but there needs to be, although implementation-neutral definition of such a parameter is complicated by the fact that, for the OFDM PHYs, this delay varies with data rate as well as with implementation of the Viterbi decoder.

SuggestedRemedy

Change "aPHY-RX-START-Delay" to "aRXSTARTDelay" and create a new parameter in PLME-CHARACTERISTICS.confirm (10.4.3.2) named "aRXSTARTDelay" with a description of "The maximum time (in microseconds) that the PHY requires between the start of the first symbol of an incoming PHY header on the WM and generation of the PHY-RXSTART.indication primitive to the MAC. If this delay varies with data rate or modulation type, the parameter value shall be the longest among those supported by the PHY." Then add appropriate mention of this constraint in the definition of PHY-RXSTART.indication in 12.3.5.11.3, and add a row to the PHY Characteristics tables of each PHY (clauses 14-19) defining the value of this parameter. For the non-OFDM PHYs, the proper value is probably aPreambleLength + aPLCPHeaderLength + aRxRFDelay + aRxPLCPDelay + aSymbolTime. In the case of the OFDM PHYs, the value is likely to be "implementation dependent," in which case the following upper bound needs to be specified: "aRXSTARTDelay shall not exceed aPreambleLength + aPLCPHeaderLength + (N x aSymbolTime) + aRxRFDelay + aRxPLCPDelay - B; where N represents the integer number of symbols required to encode a CTS or ACK control frame and B represents the length of time required for 14 PHY-DATA.indication primitives."

Response   *Response Status*   **U**

REJECT.

See the resolution to comment #280.

Cl **09**   *SC* **9.3**   *P* **213**   *L* **3**   # 202
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**

The referent of "they" in "they set their NAV" is unclear.

SuggestedRemedy

Replace "they" with "all STAs"

Response   *Response Status*   **C**

ACCEPT.

Editor included in draft 5.2 in 9.3.

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: Clause, Subclause, page, line

Cl **09**
SC **9.3**

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Submission   **Bob O'Hara, Cisco Systems**

Cl **09**   *SC* **9.3**   *P* **214**   *L*   # 204
FISCHER, MICHAEL A   Individual

Comment Type   **T**   *Comment Status*   **A**

[last paragraph] -- Clarify which received Data type frames the CF-Pollable STAs should consider for interpreting the subtype bits.

SuggestedRemedy

Change "shall interpret all subtype bits of received Data type frames" to "shall interpret all subtype bits of received Data type frames which contain the BSSID of the current BSS"

Response   *Response Status*   **C**

ACCEPT.

Editor included in draft 5.2 in 9.3.

Cl **09**   *SC* **9.3**   *P* **214**   *L*   # 203
FISCHER, MICHAEL A   Individual

Comment Type   **TR**   *Comment Status*   **A**

[1st paragraph on page] -- The last sentence of the 1st paragraph contains an apparent editing artifact. If this is not an editing artifact, the statement is unnecessary in that it allows a PC to NOT USE a behavior that is forbidden by 9.3.3.1 -- that of issuing polls to non-CF-Pollable STAs. The intent of including mention of the "delivery only" use of PCF was to explicitly allow operation where the PC sends frames to associated STAs during the CFP, but never polls any STAs.

SuggestedRemedy

Change "non-CF-pollable STAs" to "CF-pollable STAs"

Response   *Response Status*   **U**

ACCEPT.

Editor included in draft 5.2 in 9.3.

Cl **09**   *SC* **9.3.1**   *P* **215**   *L*   # 205
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**

[1st paragraph on page] -- There is inconsistent, hence confusing, nomenclature for the rate at which CPFs are generated. The term "CFPRate" is an artifact that is no longer used elsewhere in the document.

SuggestedRemedy

Change "CF repetition rate (CFPRate)" to "CFP repetition rate (CFPPeriod)" and change the two subsequent instances of "CFPRate" in this paragraph to "CFPPeriod"

Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.

Editor included in draft 5.2 in 9.3.1.

In 9.3.1, change "CF repetition rate (CFPRate)" to "CFP repetition interval (CFPPeriod)" and change the two subsequent instances of "CFPRate" in this paragraph to "CFPPeriod". Make sure the word "rate" is changed to "interval" in the first occurrence.

In 9.3.3.3, change "CFPRate" in the formula to "CFPPeriod".

Cl **09**   *SC* **9.3.1**   *P* **215**   *L*   # 208
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**

[3rd paragraph on page] -- Use proper nomenclature to refer to the nominal start of a beacon interval.

SuggestedRemedy

Change "nominal beacon transmission time" to "TBTT"

Response   *Response Status*   **C**

ACCEPT.

Editor included in draft 5.2 in 9.3.1.

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: Clause, Subclause, page, line

Cl **09**
SC **9.3.1**

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Submission   **Bob O'Hara, Cisco Systems**

Cl **09**   *SC* **9.3.1**   *P* **215**   *L*   # 206
FISCHER, MICHAEL A   Individual

Comment Type   **TR**   *Comment Status* **A**

[2nd paragraph on page] -- The description of the meaning of CFPDurRemaining in this paragraph is both incorrect and inconsistent with the definition of the CFPDurRemaining field of the CF Parameter Set element in 7.3.2.5.

SuggestedRemedy

Change "time from transmission of this beacon to the end of this CFP" to "time from the most recent TBTT to the end of this CFP"

Response   *Response Status* **U**

ACCEPT.

Editor included in draft 5.2 in 9.3.1.

Cl **09**   *SC* **9.3.1**   *P* **215**   *L*   # 207
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status* **A**

[2nd paragraph on page] -- Use proper nomenclature in the last sentence of the paragraph.

SuggestedRemedy

Change "where the CFP is two DTIM intervals" to "where the CFPPeriod is two DTIM intervals"

Response   *Response Status* **C**

ACCEPT.

Editor included in draft 5.2 in 9.3.1.

Cl **09**   *SC* **9.3.2**   *P* **215**   *L* **4**   # 209
FISCHER, MICHAEL A   Individual

Comment Type   **TR**   *Comment Status* **A**

The statement about which STAs set their NAV to CFPMaxDuration is incorrect and inconsistent with the proper definition of this behavior in 9.3.2.2.

SuggestedRemedy

Change "All STAs in the BSS (other than the PC) set their NAVs" to "All STAs that receive beacons containing a CF Parameter Set information element, including STAs not associated with the BSS, set their NAVs"

Response   *Response Status* **U**

ACCEPT.

Editor included in draft 5.2 in 9.3.2.

Cl **09**   *SC* **9.3.2**   *P* **216**   *L*   # 210
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status* **A**

[Figure 136] -- Incorrect attribute name at the top of the diagram.

SuggestedRemedy

Change "aCF MaxDuration" to "dot11CFPMaxDuration"

Response   *Response Status* **C**

ACCEPT.

Editor included in draft 5.2 in figure 168.

Cl **09**   *SC* **9.3.2.1**   *P* **216**   *L*   # 211
FISCHER, MICHAEL A   Individual

Comment Type   **T**   *Comment Status* **A**

[2nd paragraph] -- The frame exchange sequences in 9.7 allow a management frrame, which is not listed as permitted in this paragraph.

SuggestedRemedy

After "a Data+CF-Poll frame," insert "a management frame,"

Response   *Response Status* **C**

ACCEPT.

Editor included in draft 5.2 in 9.3.2.1.

Cl **09**   *SC* **9.3.2.2**   *P* **216**   *L*   # 212
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status* **A**

[2nd paragraph] -- The designation of the of the field in the CF Parameter Set element that is the basis for determining when a CFP is to start is incorrect, and inconsistent with 7.3.2.5.

SuggestedRemedy

Change "based on the CFPPeriod field" to "based on the CFPCount field"

Response   *Response Status* **C**

ACCEPT.

Editor included in draft 5.2 in 9.3.2.2.

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: Clause, Subclause, page, line

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Submission   **Bob O'Hara, Cisco Systems**

Cl **09**   *SC* **9.3.2.2**   *P* **216**   *L*   # 213
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status* **A**

[2nd paragraph] -- The concept of "error-free CF Parameter Set element" is meaningless, because there is no error check specifically for this (or any other) information element.

SuggestedRemedy

Replace "in any error-free CF Parameter Set element of the Beacon frame" with "in the CF Parameter Set element of any error-free Beacon frame"

Response   *Response Status* **C**
ACCEPT.

Editor included in draft 5.2 in 9.3.2.2.

Cl **09**   *SC* **9.3.3**   *P* **217**   *L*   # 214
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status* **A**

[1st paragraph] -- It is inappropriate, and likely incorrect, to describe the typical nature of PCF frame transfers.

SuggestedRemedy

Change "typically consist" to "may consist" ; also, delete the "a" between "depicts" and "frame transfer" in line 3 of this paragraph.

Response   *Response Status* **C**
ACCEPT.

Editor included in draft 5.2 in 9.3.3.

Cl **09**   *SC* **9.3.3**   *P* **217**   *L*   # 215
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status* **A**

[Figure 137] -- Incorrect nomenclature in the label at the lower right of this diagram.

SuggestedRemedy

Change "CF_Max_Duration" to "CFPMaxDuration"

Response   *Response Status* **C**
ACCEPT.

Editor included in draft 5.2 in figure 169.

Cl **09**   *SC* **9.3.3**   *P* **217**   *L*   # 216
FISCHER, MICHAEL A   Individual

Comment Type   **TR**   *Comment Status* **A**

[last paragraph of subclause] -- The restriction against transmission of CF-Poll frames when insufficient time remains in the CFP is too narrow.

SuggestedRemedy

Change "shall not transmit a CF-Poll" to "shall not transmit a frame with any data subtype that includes CF-Poll"

Response   *Response Status* **U**
ACCEPT.

Editor included in draft 5.2 in 9.3.3.

Cl **09**   *SC* **9.3.3.1**   *P* **217**   *L*   # 218
FISCHER, MICHAEL A   Individual

Comment Type   **T**   *Comment Status* **A**

[last paragraph on page] -- The bulleted item at the bottom of the page does not list all of the cases where Data frames are sent by the PC.

SuggestedRemedy

Insert ", is not CF-Pollable, or the DA is a group address" after "is not being polled"

Response   *Response Status* **C**
ACCEPT.

Editor included in draft 5.2 in 9.3.3.1.

Cl **09**   *SC* **9.3.3.1**   *P* **217**   *L* **0**   # 217
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status* **A**

[heading] -- Incorrect use of "PCF"

SuggestedRemedy

Change "the PCF STA" to "the PC STA"

Response   *Response Status* **C**
ACCEPT.

Editor included in draft 5.2 in 9.3.3.1.

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: Clause, Subclause, page, line

Cl **09**
SC **9.3.3.1**

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Submission   **Bob O'Hara, Cisco Systems**

Cl **09**   *SC* **9.3.3.1**   *P* **218**   *L*   # 219
FISCHER, MICHAEL A   Individual

Comment Type   **TR**   *Comment Status* **A**
[last paragraph on page] -- The listed case when a CF-Pollable STA shall always respond is too narrow.

SuggestedRemedy
Change "shall always respond to a CF-Poll" to "shall always respond to a frame with any data subtype that includes CF-Poll"

Response   *Response Status* **U**
ACCEPT.

Editor included in draft 5.2 in 9.3.3.1.

Cl **09**   *SC* **9.3.3.1**   *P* **219**   *L*   # 220
FISCHER, MICHAEL A   Individual

Comment Type   **TR**   *Comment Status* **R**
[last paragraph] -- The statement about which STAs reset their NAVs upon receipt of a CF-End or CF-End+ACK frame is incorrect and inconsistent with the proper definition of this behavior in 9.3.2.2.

SuggestedRemedy
Change "All STAs of the BSS receiving a CF-End or CF-End+ACK shall reset their NAVs" to "All STAs that receive a CF-End or CF-End+ACK frame, with any BSSID, shall reset their NAVs"

Response   *Response Status* **U**
REJECT.

The proposed change can result in premature resetting of the NAV in STAs in adjacent BSSs.

Cl **09**   *SC* **9.3.3.3**   *P* **219**   *L*   # 222
FISCHER, MICHAEL A   Individual

Comment Type   **T**   *Comment Status* **A**
[last paragraph] -- There is no apparent reason for the mention of CW or aCWmin in this paragraph, since none of the intervals in the arithmetic expressions include CW in any manner. It is unclear whether this mention of CW and aCWmin is an artifact that should have been removed, or whether a "CW" term was improperly omitted from one of the expressions.

SuggestedRemedy
Either delete the phrase "when operating with a CW of aCWmin" or include an appropriate "CW" term in one of the arithmetic expressions.

Response   *Response Status* **C**
ACCEPT.

Delete "when operating with a CW of aCWmin".

Editor included in draft 5.2 in 9.3.3.3.

Cl **09**   *SC* **9.3.3.3**   *P* **219**   *L*   # 221
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status* **A**
[last paragraph] -- Obsolete reference to "CFPRate"

SuggestedRemedy
Replace "CFPRate" with "CFPPeriod"

Response   *Response Status* **C**
ACCEPT.

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: Clause, Subclause, page, line

Cl **09**
SC **9.3.3.3**

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Submission   **Bob O'Hara, Cisco Systems**

Cl **09**   *SC* **9.3.4.2**   *P* **221**   *L*   # 223
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**

[1st paragraph -- The description of the use of Capability Information bits during association/reassociation is inconsistent with Table 17 in subclause 7.3.1.4.

SuggestedRemedy

Replace the portion of the 1st paragraph beginning "During association&" with text such as "During association, a CF-Pollable STA may request to be placed on the polling list, or to never be polled, by appropriate use of bits in the Capability Information field of the Associate Request or Reassociate Request frame, as shown in Table 17 (see 7.3.1.4)."

Response   *Response Status*   **C**

ACCEPT.

Cl **09**   *SC* **9.4**   *P* **221**   *L*   # 224
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**

[2nd paragraph] -- Mention of "an MPDU" is ambiguous

SuggestedRemedy

Replace both instances of "an MPDU" in this paragraph with "each fragment"

Response   *Response Status*   **C**

ACCEPT.

Cl **09**   *SC* **9.4**   *P* **221**   *L*   # 225
FISCHER, MICHAEL A   Individual

Comment Type   **T**   *Comment Status*   **A**

[last paragraph on page] -- The statement of when the transmit lifetime timer starts is prone to misinterpretation.

SuggestedRemedy

Insert the word "initial" between "timer starts on the" and "attempt"

Response   *Response Status*   **C**

ACCEPT.

Editor included in draft 5.2 in 9.4.

Cl **09**   *SC* **9.6**   *P* **222**   *L*   # 82
MORETON, MIKE   Individual

Comment Type   **TR**   *Comment Status*   **A**

As far as I can see, an Authentication response has to be sent at a basic rate, as the AP will not know the entended rate set of the STA (well unless it's saved a previous Probe request). An AP should be allowed to use the rate at which the STA sent the frame. This is probably more of an issue once 11k starts using class 1 action frames.

SuggestedRemedy

Give explicit rules for the rates at which a management frame can be sent if the supported rate set is not known. That is, either a basic rate, or the rate of the last management frame sent by the recipient. In fact, maybe this should be extended to class 1 data frames where the Extended Rate Set is not known?

Response   *Response Status*   **U**

ACCEPT.

In the case where the supported rate set of the receiving STA is not known, the transmitting STA shall transmit at a rate selected from the basic rate set or a rate at which the transmitting STA has received a frame from the receiving STA.

Editor included in draft 5.2 in 9.6.

Cl **09**   *SC* **9.6**   *P* **223**   *L*   # 226
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**

[2nd paragraph on page] -- Incorrect nomenclature

SuggestedRemedy

Replace "BSS basic rate set" with "BSSBasicRateSet"

Response   *Response Status*   **C**

ACCEPT.

Replace throughout the document.

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: Clause, Subclause, page, line

Cl **09**
SC **9.6**

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Submission   **Bob O'Hara, Cisco Systems**

Cl **09**   *SC* **9.6**   *P* **223**   *L*   # 227
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**
[3rd paragraph on page] -- Clarify the relevant reporting of supported rates by a STA.

SuggestedRemedy
Change "any Supported Rates and Extended Supported Rates element in the management frames." to "any Supported Rates or Extended Supported Rates element in the management frames transmitted by that STA."

Response   *Response Status*   **C**
ACCEPT.

Cl **10**   *SC* **10.3.1.2.3**   *P* **234**   *L* **2**   # 230
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**
The "when generated" would be easier to understand with inclusion of a reference to the requirements for completion of a change in power management mode.

SuggestedRemedy
Add to the end of the last sentence the text "as defined in 11.2.1"

Response   *Response Status*   **C**
ACCEPT.

Editor included in draft 5.2 in 10.3.1.2.3.

Cl **10**   *SC* **10.3.12.1.2**   *P* **269**   *L*   # 234
FISCHER, MICHAEL A   Individual

Comment Type   **T**   *Comment Status*   **A**
[table row for "dialog token"] -- The dialog token value in Measurement Request Action frames is constrained to be non-zero.

SuggestedRemedy
Change the valid range of the dialog token to "1-255"

Response   *Response Status*   **C**
ACCEPT.

Editor included in draft 5.2 in 10.3.12.1.2.

Cl **10**   *SC* **10.3.12.3.2**   *P* **271**   *L*   # 235
FISCHER, MICHAEL A   Individual

Comment Type   **T**   *Comment Status*   **A**
[table row for "dialog token"] -- The dialog token value in Measurement Request Action frames is constrained to be non-zero.

SuggestedRemedy
Change the valid range of the dialog token to "1-255"

Response   *Response Status*   **C**
ACCEPT.

Editor included in draft 5.2 in 10.3.12.3.2.

Cl **10**   *SC* **10.3.16.1.2**   *P* **281**   *L*   # 236
FISCHER, MICHAEL A   Individual

Comment Type   **T**   *Comment Status*   **A**
[table row for "dialog token"] -- The dialog token value in TPC Request Action frames is constrained to be non-zero.

SuggestedRemedy
Change the valid range of the dialog token to "1-255"

Response   *Response Status*   **C**
ACCEPT.

Editor included in draft 5.2 in 10.3.16.1.2.

Cl **10**   *SC* **10.3.2.1.2**   *P* **235**   *L*   # 303
ENGWER, DARWIN A   Individual

Comment Type   **TR**   *Comment Status*   **A**
The term "broadcast BSSID" belies the real use of a value of all 1's in the BSSID field of a probe request. It is not a "broadcast" BSSID, it is a "wildcard" BSSID intended to match all BSSIDs.

SuggestedRemedy
Change "broadcast BSSID" to "wildcard BSSID".

Response   *Response Status*   **U**
ACCEPT.

Editor included in draft 5.2 in 10.3.2.1.2.

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: Clause, Subclause, page, line

Cl **10**
SC **10.3.2.1.2**

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Submission   **Bob O'Hara, Cisco Systems**

Cl **10**   *SC* **10.3.2.2.2**   *P* **236**   *L*   # 237
FISCHER, MICHAEL A   Individual

Comment Type   **T**   *Comment Status* **A**
[BSSDescription table] -- The BSSDescription does not include information from the Extended Supported Rates element, despite the fact that such information may be an important criterion for selection among BSS candidates detected by the scanning procedure.

SuggestedRemedy
Add a row to the BSSDescription table for Extended Supported Rates, with the provision that this value may be null.

Response   *Response Status* **C**
ACCEPT IN PRINCIPLE.

Copy the row from the table in 10.3.10.1.2 for OperationalRateSet to the BSSDescription table.

Editor included in draft 5.2 in 10.3.2.2.2.

Cl **10**   *SC* **10.3.20.1.3**   *P* **289**   *L*   # 52
O'HARA, ROBERT   Individual

Comment Type   **T**   *Comment Status* **A**
This section is about sending EAPOL frames, not Michael MIC failures. This comment was first entered in LB75, but I goofed in the section number (entered it as 10.3.20.1.1 instead of 10.3.20.1.3) but had the line number on the page correct. There were two places on the page that needed correction; only the first was done in D3.0. In LB76 I voted yes, but submitted this comment again with the corrected section number. I don't find it in the resolution spreadsheet, and believe it never was registered as a comment in LB76.

SuggestedRemedy
Change sentence to: This primitive is generated by the SME when the SME has an 802.1X EAPOL-Key frame to send

Response   *Response Status* **C**
ACCEPT.

Editor included in draft 5.2 in 10.3.20.1.3.

Cl **10**   *SC* **10.3.9.1.2**   *P* **259**   *L*   # 238
FISCHER, MICHAEL A   Individual

Comment Type   **TR**   *Comment Status* **A**
[table row for "STAAddress"] -- The valid range of STAAddress is stated to be "any valid MAC address" which would permit the specification of a group address as the address to be used by the MAC entity being reset.

SuggestedRemedy
Change "any valid MAC address" to "any valid individual MAC address"

Response   *Response Status* **U**
ACCEPT.

Editor included in draft 5.2 in 10.3.9.1.2.

Cl **10**   *SC* **10.4.3.2**   *P* **298**   *L*   # 258
FISCHER, MICHAEL A   Individual

Comment Type   **TR**   *Comment Status* **R**
[table row for "aRxPLCPDelay"] -- Some PHYs (e.g. those using OFDM) do not provide uniform delay for delivering all bits of an incoming frame from PMD to MAC. Proper operation of the MAC is dependent on the RxPLCPDelay which occurs when delivering the LAST bit of the incoming frame, as illustrated in Figure 133. It is vital that the specified delay be suitable for calculating the time reference for the end-of-reception that the MAC uses for generating IFS periods and initiating responses within frame exchange sequences.

SuggestedRemedy
Chance "that the PLCP uses to deliver a bit from the PMD" to "that the PLCP uses to deliver the last bit of a received frame from the PMD"

Response   *Response Status* **U**
REJECT.

This is a nominal time, not a maximum or minimum time.

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: Clause, Subclause, page, line

Cl **10**
SC **10.4.3.2**

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Submission   **Bob O'Hara, Cisco Systems**

Cl **10**   *SC* **10.4.3.2**   *P* **299**   *L*   # 88

ECCLESINE, PETER   Individual

Comment Type   **TR**   *Comment Status*   **A**

aAirPropagationTime is defined as "The anticipated time (in microseconds) it takes a transmitted signal to go from the transmitting station to the receiving station.", but it should be the maximum roundtrip time, not the oneway time.

SuggestedRemedy

Change the Description to "The anticipated air roundtrip time (in microseconds) it takes a transmitted signal to reach the most distant station and return"

Response   *Response Status*   **U**

ACCEPT IN PRINCIPLE.

Change the Description to "Twice the propagation time for a signal to cross the maximum distance between the most distant allowable stations that are slot synchronized."

Editor included in draft 5.2 in 10.4.3.2.

Cl **10**   *SC* **10.4.3.2**   *P* **299**   *L*   # 239

FISCHER, MICHAEL A   Individual

Comment Type   **TR**   *Comment Status*   **A**

[table row for "aMACProcessingDelay"] -- There needs to be a much better description of aMACProcessingDelay, because the purpose of this parameter, as well as its reporting among the PHY characteristics, is poorly explained in the existing standard. Indeed, this parameter was misunderstood by some PHY clause developers, as is evidenced by specified values such as "0 (N/A)" in subsequent clauses (which are the subject of subsequent comments by this commenter). It is necessary for the description of aMACProcessingDelay to identify the role played by the "M1" and "M2" intervals in Figure 133 (9.2.10) -- which is the only diagram and subclause in the entire document that connects PHY timing and PHY service primitives to MAC timing and MAC use of those PHY service primitives.

SuggestedRemedy

Replace the existing description of aMACProcessingDelay with following text: "The maximum time (in microseconds) available for the MAC to issue a PHY-TXSTART.request primitive pursuant to a PHY-RXEND.indication primitive (for response after SIFS) or PHY-CCA.indication(IDLE) primitive (for response at any slot boundary following SIFS). This constraint on MAC performance is defined as PHY-specific parameter because of its use, along with other PHY-specific time delays, in calculating the two PHY characteristics of primary concern to the MAC: aSlotTime and aSIFSTime. The relationship between aMACProcessingTime and the IFS and slot timing is described in 9.2.10 and illustrated in Figure 133. The nominal value of 2 microseconds should be specified for aMACProcessingDelay by any PHY for which there is not a clear, PHY-dictated value."

Response   *Response Status*   **U**

ACCEPT IN PRINCIPLE.

Replace the existing description of aMACProcessingDelay with following text: "The maximum time (in microseconds) available for the MAC to issue a PHY-TXSTART.request primitive pursuant to a PHY-RXEND.indication primitive (for response after SIFS) or PHY-CCA.indication(IDLE) primitive (for response at any slot boundary following SIFS). This constraint on MAC performance is defined as PHY-specific parameter because of its use, along with other PHY-specific time delays, in calculating the two PHY characteristics of primary concern to the MAC: aSlotTime and aSIFSTime. The relationship between aMACProcessingTime and the IFS and slot timing is described in 9.2.10 and illustrated in Figure 133."

Editor included in draft 5.2 in 10.4.3.2.

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: Clause, Subclause, page, line

Cl   **10**
SC   **10.4.3.2**

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Submission   **Bob O'Hara, Cisco Systems**

Cl **10**   *SC* **10.4.3.2**   *P* **299**   *L*   # 240

FISCHER, MICHAEL A   Individual

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

[new table rows] -- It would be nice, although not mandatory, to add a PHY parameters that informs the MAC of the PHY symbol period.

SuggestedRemedy

Add a parameter to the PLME-CHARACTERISTICS.confirm primitive, and a row to the table describing those parameters, for aSymbolTime. The data type should be integer, and the description should be "The nominal time (in nanoseconds) required by the PHY to transfer one symbol on the WM. If the PHY uses more than one symbol time, this parameter reports the symbol time used for communication at the highest mandatory data rate."

Response   *Response Status*   **C**

REJECT.

There is nothing in the MAC that requires such a parameter.

Cl **11**   *SC* **11.1.1.1**   *P* **305**   *L*   # 241

FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**

[last paragraph] -- Obsolete attribute name

SuggestedRemedy

Change "aBeaconPeriod" to "dot11BeaconPeriod"

Response   *Response Status*   **C**

ACCEPT.

Editor included in draft 5.2 in 11.1.1.1.

Cl **11**   *SC* **11.1.2**   *P* **305**   *L* **8**   # 231

FISCHER, MICHAEL A   Individual

Comment Type   **TR**   *Comment Status*   **A**

Maintaining synchronization within 4 symbol periods plus the maximum (WM) propagation delay of the PHY is neither sufficient nor necessary. For the OFDM PHYs, 4 symbol periods is 16usec, for possible variance of 17usec, which substantially exceeds aSlotTime, making it inadequately precise (especially when attempting to accommodate the QoS functionality from TGe). Furthermore, the 4usec tolerance which appeared in the 1997 and 1999 standards was not based on 4 of the then-current 1usec symbol periods -- that 4usec tolerance was based on 2 symbol periods (+/-1) resulting from PHY synchronization uncertainty, plus 2usec (+/-1) resulting from clock jitter under the assumption that MAC 1usec timebase is operating asynchronously from the PHY symbol clock. The proper translation of the 4usec tolerance from the original standard into a tolerance that allows for symbol periods longer than 1usec is: 2 symbol periods plus 2usec plus the maximum WM propagation delay of the PHY. For the OFDM PHYs, this means the maximum TSF variance is reduced from (16+1)usec to (10+1)usec, which is only slightly longer than aSlotTime, hence (roughly) acceptable.

SuggestedRemedy

Replace "4 symbols plus the maximum propagation delay of the PHY" with "2 symbol periods of the PHY plus 2 microseconds plus aAirPropagationTime" (Even better would be to add an "aSymbolTime" parameter to PLME-CHARACTERISTICS.confirm and use "2 x aSymbolTime" instead of "2 symbol periods" in the replacement text.)

Response   *Response Status*   **U**

ACCEPT IN PRINCIPLE.

Delete the final sentence of the paragraph.

Editor included in draft 5.2 in 11.1.2.

Cl **11**   *SC* **11.1.2.2**   *P* **306**   *L*   # 243

FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**

[paragraph "d)"] -- The temporal sequence for resumption of ATIM backoff decrement is unclear.

SuggestedRemedy

Change "and the ATIM backoff timer" to "at which time the ATIM backoff timer"

Response   *Response Status*   **C**

ACCEPT.

Editor included in draft 5.2 in 11.1.2.2.

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: Clause, Subclause, page, line

Cl **11**
SC **11.1.2.2**

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3/10/2006 9:40:55 AM

Submission   **Bob O'Hara, Cisco Systems**

Cl **11**   *SC* **11.1.2.2**   *P* **306**   *L* **4**   # 242
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**
"instantiation" of a IBSS is not a well-defined concept

SuggestedRemedy
Change "that instantiates the IBSS" to "at which the MLME-START.request is performed to create the IBSS."

Response   *Response Status*   **C**
ACCEPT.

Editor included in draft 5.2 in 11.1.2.2.

Cl **11**   *SC* **11.1.2.3**   *P* **306**   *L*   # 245
FISCHER, MICHAEL A   Individual

Comment Type   **TR**   *Comment Status*   **R**
[last paragraph on page] -- The use of non-TSF information in an IBSS beacon should not be conditional upon the value in the Timestamp field being greater than the receiving STA's TSF timer.

SuggestedRemedy
Reword the last paragraph on the page to read as follows: "STAs in an IBSS shall use other information in any received Beacon frame for which the IBSS subfield of the Capability Information field is set to 1 and the content of the SSID element is equal to the SSID of the IBSS. However, the value of the Timestamp field in such Beacon frames shall only be used if this value is later than the receiving STA's TSF timer, as specified in 11.1.4."

Response   *Response Status*   **U**
REJECT.

There is insufficient rationale provided by the commenter to implement the requested change.

Cl **11**   *SC* **11.1.2.3**   *P* **306**   *L* **1**   # 244
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**
Clarify which Beacon frames are used as the basis for NAV update.

SuggestedRemedy
Insert ", without regard for the BSSID," after "Beacon frames"

Response   *Response Status*   **C**
ACCEPT.

Editor included in draft 5.2 in 11.1.2.3.

Cl **11**   *SC* **11.1.2.4**   *P* **307**   *L* **7**   # 246
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**
The specification of the TSF timer accuracy is a constraint, not a requirement.

SuggestedRemedy
Insert "no worse than" after "TSF timer shall be"

Response   *Response Status*   **C**
ACCEPT.

Editor included in draft 5.2 in 11.1.2.4.

Cl **11**   *SC* **11.1.3**   *P* **308**   *L*   # 247
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**
[3rd paragraph on page] -- The alternative of the station starting rather than joining a BSS in this paragraph is limited to the starting of an IBSS.

SuggestedRemedy
In the last line, replace "BSS" with "IBSS"

Response   *Response Status*   **C**
ACCEPT.

Editor included in draft 5.2 in 11.1.3.

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: Clause, Subclause, page, line

Cl **11**
SC **11.1.3**

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Submission   **Bob O'Hara, Cisco Systems**

Cl **11**	*SC* **11.1.3**	*P* **308**	*L*	# 8

STEPHENS, ADRIAN P   Individual

Comment Type   **TR**   *Comment Status*   **A**

"A STA may start its own BSS without first scanning for a BSS to join".
One of the issues I have with the structure of the document is that it claims that the SME is
outside the scope of the specification, and therefore doesn't have a section for the SME.
However it also makes normative statements that only make sense as specification for an
SME.
This statement is an example of that, hopefully I'll notice and report a few more. Because
control of sequencing of scanning/joining/starting is under control of the SME, this
statement should read: "The SME of a STA may start its own BSS..."

SuggestedRemedy

Add a section containing statements for the SME and move the amended statement there.

Response   *Response Status*   **U**

ACCEPT.

Delete the sentence.

Editor included in draft 5.2 in 11.1.3.

Cl **11**	*SC* **11.1.3.2.1**	*P*	*L*	# 10

STEPHENS, ADRIAN P   Individual

Comment Type   **TR**   *Comment Status*   **A**

"In each BSS there shall be at least one STA&"
This is an example of another class of generic error that is, unfortunately, far too common
in this document - wrong use of "shall".
"Shall" introduces a normative requirement on the implementer. In this example, shall
cannot introduce a normative requirement on the implementer because the BSS consists of
multiple STA from multiple implementers.
It should be possible to trace most "shall" statements to PICS entries.

SuggestedRemedy

I recommend that the document be scanned and each occurance of "shall" (there are 2258
of them) be validated.
In this example, what it meant to say: "The procedures defined in this subclause ensure
that in each BSS there is at least one STA&"

Response   *Response Status*   **U**

ACCEPT. The editor is to identify those uses of "shall" that are not normative and replace
with descriptive language.

Editor included in draft 5.2 in 11.1.3.2.1.

Cl **11**	*SC* **11.1.3.2.1**	*P* **308**	*L*	# 248

FISCHER, MICHAEL A   Individual

Comment Type   **TR**   *Comment Status*   **A**

[1st paragraph] -- The existing discussion of when STAs send a Probe Response frame
pertains to the receipt of Probe Request frames that have a broadcast DA. The use of
Probe Request frames with a unicast DA is also permitted, and the requirement to respond
in such cases should be clarified.

SuggestedRemedy

In the first sentence of the paragraph, insert "with a broadcast DA" after "receiving Probe
Request frames" In the last sentence of the paragraph, change "a probe request" to "a
broadcast probe request" At the end of the paragraph, add the following sentence: "Any
STA is expected to generate a Probe Response pursuant to receipt of a Probe Request
with a unicast DA directed to that STA."

Response   *Response Status*   **U**

ACCEPT IN PRINCIPLE.

We request the commenter to review the clause in light of the changes made as a result of
processing comments 78, 85, and 156.

No further editorial action required at this time.

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: Clause, Subclause, page, line

Cl **11**
SC **11.1.3.2.1**

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Submission   **Bob O'Hara, Cisco Systems**

Cl **11**   *SC* **11.1.3.2.1**   *P* **308**   *L*   # 85

SIMPSON, FLOYD D   Individual

Comment Type   **TR**   *Comment Status*   **A**

The two paragraphs of this clause are confusing as written and introduce many technical confusion. For instance, the first sentence of the first paragraph says "STAs, subject to criteria below, receiving Probe Request frames shall respond with a probe response only if the SSID in the probe request is the wildcard SSID or matches the specific SSID of the STA." So is the normative behavior of this sentence considered part of the "criteria below"? and what exactly constitue the "criteria below"? Other technical issues with the paragraphs is that for instance, the first paragraph has statements that conflict with statements in the 2nd. paragraph. For example, the second paragraph says "A STA that sent a beacon shall remain in the Awake state and shall respond to probe requests until a Beacon frame with the current BSSID is received." If that statement is taken for what it says, doesn't it conflict with the first sentence of the first paragraph which put conditions on when a STA should respond to probe requests.

I think the right way to write this section is to make what is the currently the 2nd paragraph the first paragraph and make the current first paragraph the second paragraph with some suitable changes to make it clear what criteria is meant to condition when the STA should respond to a probe request.

SuggestedRemedy

rewrite this section as shown below (Note to Editor: My changes are 1) switch the paragraphs 2) delete the text ", subject to criteria below," from the 2nd paragraph 3) add the text underline below to the 1st paragraph):

In each BSS there shall be at least one STA that is awake at any given time to receive and respond to probe requests. A STA that sent a beacon shall remain in the Awake state and shall respond to probe requests, subject to criteria in the next paragraph, until a Beacon frame with the current BSSID is received. If the STA is an AP, it shall always remain in the Awake state and always respond to probe requests, subject to criteria in the next paragraph. There may be more than one STA in an IBSS that responds to any given probe request, particularly in cases where more than one STA transmitted a Beacon frame following the
most recent TBTT, either due to not receiving successfully a previous beacon or due to collisions between beacon transmissions.

STAs receiving Probe Request frames shall respond with a probe response only if the SSID in the probe request is the wildcard SSID or matches the specific SSID of the STA. Probe Response frames shall be sent as directed frames to the address of the STA that generated the probe request. The probe response shall be sent using normal frame transmission rules. An AP shall respond to all probe
requests meeting the above criteria. In an IBSS, the STA that generated the last beacon shall be the STA that responds to a probe request.

Response   *Response Status*   **U**

ACCEPT IN PRINCIPLE.

Replace the text in the clause with
"In each BSS there shall be at least one STA that is awake at any given time to receive and respond to probe requests. A STA that sent a beacon shall remain in the Awake state and shall respond to probe requests, subject to criteria in the next paragraph, until a Beacon frame with the current BSSID is received. If the STA is an AP, it shall always remain in the Awake state and always respond to probe requests, subject to criteria in the next paragraph. There may be more than one STA in an IBSS that responds to any given probe request, particularly in cases where more than one STA transmitted a Beacon frame following the
most recent TBTT, either due to not receiving successfully a previous beacon or due to collisions between beacon transmissions.

STAs receiving Probe Request frames shall respond with a probe response when the SSID in the probe request is the wildcard SSID or matches the specific SSID of the STA. Probe Response frames shall be sent as directed frames to the address of the STA that generated the probe request. The probe response shall be sent using normal frame transmission rules. An AP shall respond to all probe
requests meeting the above criteria. In an IBSS, the STA that generated the last beacon shall be the STA that responds to a probe request."

Editor included in draft 5.2 in 11.1.3.2.1.

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: Clause, Subclause, page, line

Cl   **11**   Page 57 of 75
SC   **11.1.3.2.1**   3/10/2006 9:40:55 AM

Submission   **Bob O'Hara, Cisco Systems**

Cl **11**   *SC* **11.1.3.2.1**   *P* **308**   *L*   # 78

MORETON, MIKE   Individual

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

It's implicit that the BSSID field is ignored in received Probe request frames, but it would make things clearer if this was explicitly stated.

SuggestedRemedy

Explicitly say that the BSSID field is ignored even when the Receiver Address is a broadcast address.

Response   *Response Status*   **U**

REJECT.

The requested change directly conflicts with 11.1.3.2.2 c). However, the text does need clarification.

Change the first sentence of 11.1.3.2.1:
STAs, subject to criteria below, receiving Probe Request frames shall respond with a probe response only if

a) the SSID in the probe request is the wildcard SSID or matches the specific SSID of the STA, and
b) the BSSID field of the probe request is the broadcast address or matches the BSSID of the STA, and
c) the DA field is the broadcast address or matches the MAC address of the STA.

Editor included added similar wording in draft 5.2 in 11.1.3.2.1 point c.

Cl **11**   *SC* **11.2.1**   *P* **311**   *L*   # 249

FISCHER, MICHAEL A   Individual

Comment Type   **TR**   *Comment Status*   **A**

[last paragraph] -- Clarify that changing Power Management mode can only be done by means of an acknowledged frame exchange with the AP.

SuggestedRemedy

At the end of the first sentence, insert "that includes an acknowledgement from the AP" after "successful frame exchange"

Response   *Response Status*   **U**

ACCEPT IN PRINCIPLE.

At the end of the first sentence, insert "that includes an acknowledgement from the AP" after "successful frame exchange", then delete "successful".

Editor included in draft 5.2 in 11.2.1.

Cl **11**   *SC* **11.2.1.1**   *P*   *L*   # 11

STEPHENS, ADRIAN P   Individual

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

How big is "ProbeDelay"? Answer: it's not specified.
This creates a problem because later amendments (e.g. 802.11n) may result in long sequences of frames that are not PHY compatible. The legacy system waits for a "ProbeDelay" for a valid legacy header. A protection solution for the new system is to ensure the transmission of a valid legacy frame every ProbeDelay - but without knowing what this value is, there is no way this can be achieved.

SuggestedRemedy

Recommend that ProbeDelay is given a value in this document. Recommend suitable value is largest 802.11e TXOP duration.

Response   *Response Status*   **C**

REJECT.

ProbeDelay is a parameter passed to the MLME by the SME. The value for this parameter is outside the scope of the standard.

Cl **11**   *SC* **11.2.1.3**   *P* **312**   *L*   # 262

FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**

[3rd paragraph] -- "some of which may be DTIMs" implies that the sending of DTIMs is optional

SuggestedRemedy

Change "may be DTIMs" to "are DTIMs"

Response   *Response Status*   **C**

ACCEPT.

Cl **11**   *SC* **11.2.1.3**   *P* **312**   *L*   # 261

FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**

[3rd paragraph] -- The stated assumptions for Figure 147 are incomplete.

SuggestedRemedy

Change "assumption that a DTIM" to "assumptions that no PCF is operating, and that a DTIM"

Response   *Response Status*   **C**

ACCEPT.

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: Clause, Subclause, page, line

Cl **11**
SC **11.2.1.3**

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3/10/2006 9:40:55 AM

Submission   **Bob O'Hara, Cisco Systems**

Cl **11**   *SC* **11.2.1.3**   *P* **313**   *L*   # 263
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**
[Figure 147] -- There are several problems with labeling in this diagram.

SuggestedRemedy
Change each of the two instances of "Poll" to "PS-Poll" Change "TIM intervals" to "Beacon intervals" Add "for other STA" after "Buffered Frame" in the middle of the top section. Add an arrow showing transfer of the Broadcast at the right end of the AP activity line to the awake period of the PS Station on the middle line.

Response   *Response Status*   **C**
ACCEPT.

Cl **11**   *SC* **11.2.1.4**   *P*   *L*   # 12
STEPHENS, ADRIAN P   Individual

Comment Type   **TR**   *Comment Status*   **A**
"An AP shall have an aging function to delete pending traffic when it is buffered for an excessive
time period."
I'm not sure this normative requirement is necessary. It is certainly not testable without defining what "excessive" means.

SuggestedRemedy
Recommend turning this into an informative note.
Alternatively define the ageing algorithm so that compliance can be tested.

Response   *Response Status*   **U**
ACCEPT.

"An AP can delete buffered frames for implementation dependent reasons, including the use of an aging function and availability of buffers."

Editor included in draft 5.2 in 11.2.1.5.

Cl **11**   *SC* **11.2.1.4**   *P*   *L*   # 13
STEPHENS, ADRIAN P   Individual

Comment Type   **T**   *Comment Status*   **R**
I wonder if it's worth adding a comment here on preserving ordering when moving frames resulting from an indication that a STA has changes power-saving state.

SuggestedRemedy
Add note something like: "An AP that moves frames to and from its buffer as learns that a STA has changed power-saving state should preserve the relative order of those frames."

Response   *Response Status*   **C**
REJECT.

Commenter to bring this comment again, if incorporation of text from 802.11e does not address this topic.

Cl **11**   *SC* **11.2.1.4**   *P* **313**   *L*   # 265
FISCHER, MICHAEL A   Individual

Comment Type   **TR**   *Comment Status*   **R**
[paragraph "e)"] -- The instructions for setting the More Data field are incorrect.

SuggestedRemedy
Change "More Data field of each" to "More Data field of all but the final such" and change "further buffered" to "additional buffered"

Response   *Response Status*   **U**
REJECT.

The existing description is correct.

Cl **11**   *SC* **11.2.1.4**   *P* **313**   *L*   # 266
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**
[paragraph "f)"] -- In the 3rd sentence, the referent of More Data field is unclear.

SuggestedRemedy
Insert the text "of the response Data frame" between "More Data field" and "shall be set"

Response   *Response Status*   **C**
ACCEPT.

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: Clause, Subclause, page, line

Cl **11**
SC **11.2.1.4**

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3/10/2006 9:40:55 AM

Submission   **Bob O'Hara, Cisco Systems**

Cl **11**   *SC* **11.2.1.4**   *P* **313**   *L* **4**   # 264
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**
"frames received for STAs operating in the Active mode" is ambiguous.

SuggestedRemedy
Change "received for" to "addressed directly to"

Response   *Response Status*   **C**
ACCEPT.

Cl **11**   *SC* **11.2.1.5**   *P* **314**   *L*   # 269
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**
[paragraph "f)"] -- The description of buffered items indicated in the Frame Control field does not properly allow for fragmentation.

SuggestedRemedy
Change "more buffered MSDUs or management frames" to "more buffered MPDUs or MMPDUs"

Response   *Response Status*   **C**
ACCEPT.

Cl **11**   *SC* **11.2.1.5**   *P* **314**   *L*   # 267
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**
[paragraph "e)"] -- In the 2nd sentence, the referent of More Data field is unclear.

SuggestedRemedy
Insert the text "in the headers of all but the final such frame" between "shall be set" and "to indicate"

Response   *Response Status*   **C**
ACCEPT.

Cl **11**   *SC* **11.2.1.5**   *P* **314**   *L*   # 270
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**
[paragraph "h)"] -- Incorrect acronym

SuggestedRemedy
Change "PCF" to "PC"

Response   *Response Status*   **C**
ACCEPT.

Cl **11**   *SC* **11.2.1.5**   *P* **314**   *L*   # 268
FISCHER, MICHAEL A   Individual

Comment Type   **TR**   *Comment Status*   **A**
[paragraph "f)"] -- The statement of what gets transmitted, in order of increasing AID, following transmission of the buffered broadcast and multicast fames, is incomplete.

SuggestedRemedy
Insert the text "as well as CF-Polls to STAs in the PS mode that were indicated in the DTIM in accordance with paragraph c), above" on the 3rd line, between "frames" and "shall begin immediately"

Response   *Response Status*   **U**
ACCEPT.

Editor included in draft 5.2 in 11.2.1.6.

Cl **11**   *SC* **11.2.1.6**   *P* **314**   *L*   # 271
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**
[paragraph "a)"] -- "the ListenInterval" implies that a single ListenInterval is used for all STA in a BSS.

SuggestedRemedy
Change "the ListenInterval" to "the STA's current ListenInterval"

Response   *Response Status*   **C**
ACCEPT.

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: Clause, Subclause, page, line

Cl **11**
SC **11.2.1.6**

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3/10/2006 9:40:55 AM

Submission   **Bob O'Hara, Cisco Systems**

Cl **11**   *SC* **11.2.1.6**   *P* **315**   *L*   # 273

FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**

[paragraph "c)"] -- Not only data frames can be sent in response to a PS-Poll.

SuggestedRemedy

Change "Data frame" to "Data or Management frame"

Response   *Response Status*   **C**

ACCEPT.

Cl **11**   *SC* **11.2.1.6**   *P* **315**   *L*   # 275

FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**

[paragraph "e)"] -- "every DTIM" requires qualification

SuggestedRemedy

Insert the text "sent by the AP of the BSS" after "every DTIM" Also, in the next sentence, replace "receiving broadcast/multicast" with "that stays awake to receive broadcast/multicast"

Response   *Response Status*   **C**

ACCEPT.

Cl **11**   *SC* **11.2.1.6**   *P* **315**   *L*   # 274

FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **R**

[paragraph "d)"] -- The intent of the existing statement is unclear.

SuggestedRemedy

Replace this paragraph with: "If the More Data field is set to 1 in the received Data or Management frame to indicate that more traffic for that STA is buffered, the STA, at its convenience, shall issue another PS-Poll until the receipt of a Data or Management frame with the More Data field set to 0, or until the end of the CP."

Response   *Response Status*   **C**

REJECT.

Cl **11**   *SC* **11.2.1.8**   *P* **315**   *L* **1**   # 272

FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**

Obsolete terminology

SuggestedRemedy

Replace the text after "continuously;" with "such stations do not need to interpret the TIM information elements in Beacon frames."

Response   *Response Status*   **C**

ACCEPT.

Cl **11**   *SC* **11.2.1.9**   *P*   *L*   # 14

STEPHENS, ADRIAN P   Individual

Comment Type   **TR**   *Comment Status*   **A**

"The AP shall have an aging function to delete buffered traffic when it has been buffered for an excessive
period of time. That function shall be based on the ListenInterval parameter of the MLMEASSOCIATE.
request primitive of the STA for which the traffic is buffered."
"... shall have a function..." " ... shall be based on ...".
Oh dear, oh dear, oh dear.

SuggestedRemedy

Either turn this into a recommendation, or provide enough specification that a compliant implementation can be constructed.

Response   *Response Status*   **U**

ACCEPT.

Delete the first two sentences of 11.2.1.9. Also, replace "The AP aging function" with "Any AP aging function" in the third sentence.

Editor included in draft 5.2 in 11.2.1.11.

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: Clause, Subclause, page, line

Cl   **11**   Page 61 of 75
SC   **11.2.1.9**   3/10/2006 9:40:55 AM

Submission   **Bob O'Hara, Cisco Systems**

Cl **11**   *SC* **11.2.2.2**   *P* **317**   *L*   # 260
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**
[last line on page] -- "power management is not in use within the IBSS" implies that the ATIM Window can magically change when an STA wants to use power management.

SuggestedRemedy
Change "in use" to "usable"

Response   *Response Status*   **C**
ACCEPT.

Cl **11**   *SC* **11.2.2.3**   *P* **318**   *L* **3**   # 259
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **A**
Subclause 7.1.3.1.7 does not specify a procedure.

SuggestedRemedy
Change "according to the procedure in 7.1.3.1.7" to "using the rules in 7.1.3.1.7"

Response   *Response Status*   **C**
ACCEPT.

Cl **11**   *SC* **11.3**   *P* **319**   *L*   # 31
O'HARA, ROBERT   Individual

Comment Type   **E**   *Comment Status*   **A**
The reference to section 5.5 is incorrect, after 5.5 was changed to 5.6.

SuggestedRemedy
change "5.5" to "5.6".

Response   *Response Status*   **C**
ACCEPT.

Editor included in draft 5.2 in 11.3.

Cl **11**   *SC* **11.3**   *P* **320**   *L*   # 25
O'HARA, ROBERT   Individual

Comment Type   **G**   *Comment Status*   **A**
The current standard defines a number of values for result codes. Very few of these values have definitions for their use. Define how a STA is to respond upon receipt of particular values of the result code in a disassociation frame and when an AP is to use them.

SuggestedRemedy
Append the following subclauses after 11.3.4:

11.3.5 STA disassociation procedure

Upon receipt of a Disassociation frame, a STA shall operate as follows:

a)   The MLME shall issue an MLME-DISASSOCIATE.indication with the ReasonCode parameter set to the value of the Reason Code received in the Disassociation frame.
b)   If the Reason Code indicates a configuration or parameter mismatch as the cause of the disassociation, the STA shall not attempt to associate or reassociate with the AP sending the Disassociation frame, until the configuration or parameter mismatch has been corrected.
c)   If the Reason Code indicates the STA was disassociated for a reason other than configuration or parameter mismatch, the STA shall not attempt to associate or reassociate with the AP sending the Disassociation frame until it has attempted to association or reassociate with at least one other AP or a period of 2 seconds has elapsed.

11.3.6 AP disassociation procedure

Upon receipt of an MLME-DISASSOCIATE.request, an AP shall use the following procedure when disassociating an STA:

a)   The AP shall send a Disassociation frame to STA being disassociated.
b)   The AP shall indicate a specific reason for the disassociation in the Reason Code field of the Disassociation frame. If any Reason Code value other than the unspecified reason Reason Code from Table 19 of clause 7.4.1.7 is appropriate for indicating the reason for the disassociation, the AP shall use that Reason Code value. The use of the unspecified reason value shall be used to indicate the STA was disassociated for a reason unrelated to all defined Reason Code values.

Response   *Response Status*   **C**
ACCEPT.

The commenter has identified the wrong clause. The correct clause is 11.4.

Append the following subclauses after 11.4.5:

11.4.6 Non-AP STA disassociation receipt procedure

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: Clause, Subclause, page, line

Cl **11**
SC **11.3**

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Submission   **Bob O'Hara, Cisco Systems**

Upon receipt of a Disassociation frame, a STA shall operate as follows:

a)The MLME shall issue an MLME-DISASSOCIATE.indication with the ReasonCode parameter set to the value of the Reason Code received in the Disassociation frame.
b)The state variable for the AP shall be set to State 2 if and only if it was not State 1.
c)If the Reason Code indicates a configuration or parameter mismatch as the cause of the disassociation, the STA shall not attempt to associate or reassociate with the AP sending the Disassociation frame, until the configuration or parameter mismatch has been corrected.
d)If the Reason Code indicates the STA was disassociated for a reason other than configuration or parameter mismatch, the STA shall not attempt to associate or reassociate with the AP sending the Disassociation frame until a period of 2 seconds has elapsed.

The STAãs SME shall delete any PTKSA and temporal keys held for communication with the indicated STA
by using the MLME-DELETEKEYS.request primitive (see 8.4.10) and by invoking MLME-SETPROTECTION.
request(None) before invoking the MLME-DISASSOCIATE.request primitive.

11.4.7 AP disassociation initiation procedure

Upon receipt of an MLME-DISASSOCIATE.request, an AP shall use the following procedure when disassociating an STA:

a)The AP shall send a Disassociation frame to STA being disassociated.
b)The AP shall indicate a specific reason for the disassociation in the Reason Code field of the Disassociation frame. If any Reason Code value other than the unspecified reason Reason Code from Table 19 of clause 7.4.1.7 is appropriate for indicating the reason for the disassociation, the AP shall indicate that Reason Code value. The use of the unspecified reason value shall indicate the STA was disassociated for a reason unrelated to all defined Reason Code values.
c)The state variable for the STA shall be set to State 2.
d)The SME will update the DS.

The STAãs SME shall delete any PTKSA and temporal keys held for communication with the indicated STA by using the MLME-DELETEKEYS.request primitive (see 8.4.10) and by invoking MLME-SETPROTECTION.
request(None) upon receiving a MLME-DISASSOCIATE.indication primitive.

Editor included in draft 5.2 in 11.8.6 and 11.8.7. Editor also retitled 11.8.8.

| *Cl* **11** | *SC* **11.3.1** | *P* **319** | *L* | # 21 |

O'HARA, ROBERT   Individual

Comment Type   **T**   *Comment Status* **A**

The current standard defines a number of values for status codes . Very few of these values have definitions for their use. Define how a STA is to respond upon receipt of particular values of status codes

SuggestedRemedy

Append the following text to clause 11.3.1 c):

The Status Code returned in the Association Response frame indicates the cause of the failed association attempt. Any misconfiguration or parameter mismatch, e.g., data rates required as Basic Rates that the STA does indicate as supported in the Supported Rates information element, shall be corrected before the STA attempts a subsequent association with the AP. If the Status Code indicates the association failed because of a reason that is not related to configuration, e.g., the AP is unable to support additional associations, the STA shall not attempt to associate with the same AP if other APs are available, until the STA has attempted to associate with at least one other AP or a period of 2 seconds has elapsed.

Response   *Response Status* **C**

ACCEPT.

The commenter has identified the incorrect clause. The correct clause is 11.4.1.

Append the following text to clause 11.4.1 c):

The Status Code returned in the Association Response frame indicates the cause of the failed association attempt. Any misconfiguration or parameter mismatch, e.g., data rates required as Basic Rates that the STA did not indicate as supported in the STA's Supported Rates information element, shall be corrected before the SME issues an MLME-ASSOCIATE.request for the same AP. If the Status Code indicates the association failed because of a reason that is not related to configuration, e.g., the AP is unable to support additional associations, the SME shall not issue an MLME-ASSOCIATE.request for the same AP, until a period of at least 2 seconds has elapsed.

Editor included in draft 5.2 in 11.8.1.

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: Clause, Subclause, page, line

Cl **11**   Page 63 of 75
SC **11.3.1**   3/10/2006 9:40:55 AM

Submission   **Bob O'Hara, Cisco Systems**

Cl **11**   *SC* **11.3.2**   *P*   *L*   # 15

STEPHENS, ADRIAN P   Individual

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

"The STA's SME shall delete any PTKSA&"
See also my earlier comment. We need to put this in a section containing normative requirements on the SME.

SuggestedRemedy

Add a section containing statements for the SME and move the statement there.
Recommend scanning for SME and doing likewith with any other similar statements.

Response   *Response Status*   **U**

REJECT.

By removing the indicated text, the commenter removes the needed cross-layer description that pulls together all the individual operations described elsewhere in the standard. This cross-layer description is essential to understanding the security functionality.

Cl **11**   *SC* **11.3.2**   *P* **319**   *L*   # 22

O'HARA, ROBERT   Individual

Comment Type   **T**   *Comment Status*   **A**

The current standard defines a number of values for status codes . Very few of these values have definitions for their use. Define how a STA is to respond upon receipt of particular values of status codes.

SuggestedRemedy

Append the following text after 11.3.2 c):

d) When the status value of the association is not successful, the AP shall indicate a specific reason for the failure to associate in the Status Code of the Association Response frame. If any Status Code value from Table 20 in clause 7.3.1.9 is an appropriate reason for the failure to associate, the AP shall use that Status Code value. The use of the unspecified reason value of the Status Code shall be used to indicate the association failed for a reason that is unrelated to every other defined Status Code value.

Response   *Response Status*   **C**

ACCEPT.

The commenter has not identified the correct clause. The correct clause is 11.4.2.

Append the following text after 11.4.2 c):

d) When the status value of the association is not successful, the AP shall indicate a specific reason for the failure to associate in the Status Code of the Association Response frame. If any Status Code value from Table 20 in clause 7.3.1.9 is an appropriate reason for the failure to associate, the AP shall indicate that Status Code value. The use of the unspecified reason value of the Status Code shall indicate the association failed for a reason that is unrelated to every other defined Status Code value.

Renumber subsequent items in the list in 11.4.2.

Editor included in draft 5.2 in 11.8.2.

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: Clause, Subclause, page, line

Cl **11**
SC **11.3.2**

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3/10/2006 9:40:55 AM

Submission   **Bob O'Hara, Cisco Systems**

Cl **11**	*SC* **11.3.3**	*P* **320**	*L*	# 23
O'HARA, ROBERT		Individual		

Comment Type   **T**   *Comment Status*   **A**

The current standard defines a number of values for status codes. Very few of these values have definitions for their use. Define how a STA is to respond upon receipt of particular values of the status code.

SuggestedRemedy

Append the following text to 11.3.3 c):

The Status Code returned in the Reassociation Response frame indicates the cause of the failed reassociation attempt. Any misconfiguration or parameter mismatch, e.g., data rates required as Basic Rates that the STA does indicate as supported in the Supported Rates information element, shall be corrected before the STA attempts a subsequent reassociation with the AP. If the Status Code indicates the reassociation failed because of a reason that is not related to configuration, e.g., the AP is unable to support additional associations, the STA shall not attempt to reassociate with the same AP if other APs are available, until the STA has attempted to reassociate with at least one other AP or a period of 2 seconds has elapsed.

Response   *Response Status*   **C**

ACCEPT.

The commenter has identified the incorrect clause. The correct clause is 11.4.3.

Append the following text to clause 11.4.3 d):

The Status Code returned in the Reassociation Response frame indicates the cause of the failed reassociation attempt. Any misconfiguration or parameter mismatch, e.g., data rates required as Basic Rates that the STA did not indicate as supported in the STA's Supported Rates information element, shall be corrected before the SME issues an MLME-REASSOCIATE.request for the same AP. If the Status Code indicates the reassociation failed because of a reason that is not related to configuration, e.g., the AP is unable to support additional associations, the SME shall not issue an MLME-REASSOCIATE.request for the same AP, until a period of at least 2 seconds has elapsed.

Editor included in draft 5.2 in 11.8.3.

Cl **11**	*SC* **11.3.4**	*P* **320**	*L*	# 24
O'HARA, ROBERT		Individual		

Comment Type   **T**   *Comment Status*   **A**

The current standard defines a number of values for status codes. Very few of these values have definitions for their use. Define how a STA is to respond upon receipt of particular values of the status code.

SuggestedRemedy

Append the following text after 11.3.4 c):

d) When the status value of the reassociation is not successful, the AP shall indicate a specific reason for the failure to reassociate in the Status Code of the Reassociation Response frame. If any Status Code value other than the unspecified reason Status Code value from Table 20 in clause 7.3.1.9 is an appropriate reason for the failure to associate, the AP shall use that Status Code value. The use of the unspecified reason value of the Status Code shall be used to indicate the reassociation failed for a reason that is unrelated to every other defined Status Code value.

Response   *Response Status*   **C**

ACCEPT.

The commenter has not identified the correct clause. The correct clause is 11.4.4.

Append the following text after 11.4.4 d):

e) When the status value of the reassociation is not successful, the AP shall indicate a specific reason for the failure to reassociate in the Status Code of the Reassociation Response frame. If any Status Code value from Table 20 in clause 7.3.1.9 is an appropriate reason for the failure to reassociate, the AP shall indicate that Status Code value. The use of the unspecified reason value of the Status Code shall indicate the reassociation failed for a reason that is unrelated to every other defined Status Code value.

Renumber subsequent items in the list in 11.4.4.

Editor included in draft 5.2 in 11.8.4.

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: Clause, Subclause, page, line

Cl **11**
SC **11.3.4**

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3/10/2006 9:40:55 AM

Submission   **Bob O'Hara, Cisco Systems**

Cl **11**   *SC* **11.4**   *P* **320**   *L*   # 32
O'HARA, ROBERT   Individual

Comment Type   **E**   *Comment Status* **A**
   The reference to section 5.5 is incorrect, after 5.5 was changed to 5.6.

SuggestedRemedy
   change "5.5" to "5.6".

Response   *Response Status* **C**
   ACCEPT.

   Editor included in draft 5.2 in 11.8.

Cl **11**   *SC* **11.5**   *P* **323**   *L*   # 92
ECCLESINE, PETER   Individual

Comment Type   **TR**   *Comment Status* **A**
   End of third sentence 'in Europe" has been superceded by WRC 2003.

SuggestedRemedy
   Combine third and forth sentences into "This subclause describes TPC procedures that
   may also satisfy comparable needs in other regulatory domains and
   other frequency bands and may be useful for other purposes (e.g., reduction of
   interference, range control,
   reduction of power consumption)."

Response   *Response Status* **U**
   ACCEPT IN PRINCIPLE.

   Combine third and forth sentences into "This subclause describes TPC procedures that
   may satisfy needs in many regulatory domains and
   other frequency bands and may be useful for other purposes (e.g., reduction of
   interference, range control, reduction of power consumption)."

   Editor included in draft 5.2 in 11.9.

Cl **11**   *SC* **11.5.1**   *P*   *L*   # 67
MYLES, ANDREW F   Individual

Comment Type   **TR**   *Comment Status* **R**
   The text defines association based on transmit power capability
   However, no use has ever been demonstrated for this feature and few if any
   implmenentations provide it for any useful purpose

SuggestedRemedy
   Delete all text related to association based on transmit power capability

Response   *Response Status* **U**
   REJECT. The commenter does not provide a compelling reason for deprecating this
   function. It is not proven that no use has ever been demonstrated for this feature. It is to
   soon to determine that no use will be found for this feature.

Cl **11**   *SC* **11.5.3**   *P*   *L*   # 68
MYLES, ANDREW F   Individual

Comment Type   **TR**   *Comment Status* **R**
   The text defines adaption of transmit power
   However, no use has ever been demonstrated for this feature in relation to DFS and few, if
   any, implmenentations provide it for any useful purpose

SuggestedRemedy
   Delete all text related to adaption of transmit power, and allow 11k and 11v to define new
   more appropriate features

Response   *Response Status* **U**
   REJECT. The commenter does not provide a compelling reason for deprecating this
   function. It is not proven that no use has ever been demonstrated for this feature. It is to
   soon to determine that no use will be found for this feature.

   The commenter is urged to work with 802.11 task groups k and v to define new, more
   appropriate features and to delete this feature at that time.

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: Clause, Subclause, page, line

Cl **11**   Page 66 of 75
SC **11.5.3**   3/10/2006 9:40:55 AM

Submission   **Bob O'Hara, Cisco Systems**

Cl **11**   *SC* **11.6.1**   *P*   *L*   # 69
MYLES, ANDREW F   Individual

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

The text defines association based on supported channels
However, no use has ever been demonstrated for this feature in relation to DFS and few if
any implmenentations provide it for any useful purpose

SuggestedRemedy

Delete all test related to association based on supported channels

Response   *Response Status*   **U**

REJECT. The commenter does not provide a compelling reason for deprecating this
function. It is not proven that no use has ever been demonstrated for this feature. It is to
soon to determine that no use will be found for this feature.

Cl **11**   *SC* **11.6.3**   *P*   *L*   # 66
MYLES, ANDREW F   Individual

Comment Type   **TR**   *Comment Status*   **A**

The text references ETSI EN 301 893.
This reference is European focused and incorrect

SuggestedRemedy

Remove all references to ETSI EN 301 893

Response   *Response Status*   **U**

ACCEPT. There is no reference to ETSI EN 301 893 in the cited clause of the balloted
draft. The text existed in earlier versions of the draft, but had already been removed.

No editorial action required.

Cl **11**   *SC* **11.6.6**   *P*   *L*   # 70
MYLES, ANDREW F   Individual

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

The text defines a complex measurement request and response mechanism.
The mechanism is not required for DFS or TPC purposes. It is clearly not sufficient for the
measurement purposes given that 11k is currently redefining it

SuggestedRemedy

Delete all text related to measurement request and response, and allow 11k to define more
appropriate features

Response   *Response Status*   **U**

REJECT. The commenter is urged to work with 802.11 task group k to make this change
in that amendment.

Cl **11**   *SC* **11.6.7.2**   *P*   *L*   # 65
MYLES, ANDREW F   Individual

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

The DFS channel changing facilities for IBSS represent a very complex set protocols that
have little value in the vast majority of cases and will not work in many circumstances.
There is no know implementation of this feature.

SuggestedRemedy

Delete all text related to selecting a new channel in an IBSS

Response   *Response Status*   **U**

REJECT.

The commenter is requested to provide more information supporting the assertions that the
protocol does not work in many circumstances and thus has little value.

The editor is to reverse the changes made in draft 5.2, as shown below.

Delete all of clause 3.38 (done in 3.47 of draft 5.2)
Delete "or IBSS" in clause 5.4.4.2 (done in 5.4.4.2)
Delete "IBSS DFS" row from Table 5 in 7.2.3.1 (Changed to reserved in Table 8)
Delete "IBSS DFS" row from Table 12 in 7.2.3.9 (Changed to reserved in Table 15)
Delete "IBSS DFS" row from Table 22 in 7.3.2 (Changed to reserved in Table 26)
Delete "or a STA in an IBSS" in first paragraph in 7.3.2.20 (done in 7.3.2.20)
Delete "or a STA in an IBSS" and "A STA in an IBSS may treat a Channel Switch Mode
field set to 1 as advisory" in second paragraph in 7.3.2.20 (done in 7.3.2.20)
Delete all of clause 7.3.2.24 (done in 7.3.2.24)
Delete "or a STA in an IBSS" from 7.4.1.5 (done in 7.4.1.5)
Delete row with "IBSS DFS Recovery Interval" in 10.3.2.2.2 (Done in 10.3.2.2.2)
Delete "IBSS DFS Recovery Interval," from MLME-START.request parameter list in
10.3.10.1.2 (done in 10.3.10.1.2)
Delete row with "IBSS DFS Recovery Interval" in 10.3.10.1.2 (done in 10.3.10.1.2)
Delete "or IBSS" in seventh dash point in 11.6 (done in 11.10.)
Delete "A STA in an IBSS may also autonomously report measurements to other STAs in
the IBSS using the Channel Map field in the IBSS DFS element in a Beacon frame or
Probe Response frame" in 11.6.6 (done in 11.10.6)
Delete title "11.6.7.1 Selecting and advertising a new channel in an infrastructure BSS" but
keep following text (Removed 11.10.7.1 heading)
Delete all of clause 11.6.7.2 (Removed 11.10.7.2)
Delete SM17-19 in A.4.12 (Removed SM17-19 in A.4.12)
Delete "Transmission of channel switch announcement and channel switch procedure by a
STA" sub-row in SM20 in A.4.12 (Done in SM20 of A.4.12)

Editor included in draft 5.2 in the locations described in the parentheticals above.

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: Clause, Subclause, page, line

Cl **11**
SC **11.6.7.2**

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3/10/2006 9:40:55 AM

Submission   **Bob O'Hara, Cisco Systems**

Cl **12**   *SC* **12.3.5.10.3**   *P* **343**   *L* **1**   # 255
FISCHER, MICHAEL A   Individual

Comment Type **TR**   *Comment Status* **A**

Proper operation of the MAC is dependent on the timing relationship between a change in channel state and the generation of the corresponding PHY-CCA.indication primitive, as illustrated in Figure 133 (9.2.10). The timing constraint depicted there needs to be specified in this subclause.

SuggestedRemedy

Change "is generated every time the status of the channel" to "is generated within aCCATime of the occurrence of a change in the status of the channel"

Response   *Response Status* **U**

ACCEPT.

Editor included in draft 5.2 in 12.3.5.10.3.

Cl **12**   *SC* **12.3.5.11.3**   *P* **344**   *L* **2**   # 250
FISCHER, MICHAEL A   Individual

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

Proper operation of the MAC is dependent on the PHY maintaining an indication of WM busy state throughout the duration of a detected, incoming frame with a valid PLCP header, based on the length and data rate information in that PLCP header. This is true even in cases where the frame is not completely revceived, and a PHY-RXEND.indication(CarrierLost) occurs prior to receipt of all of the nominal frame contents. This behavior should be defined in clause 12.

SuggestedRemedy

Add a new paragraph at the end of this subclause stating: "After generating a PHY-RXSTART.indication the PHY shall maintain physical medium busy status, and shall not generate a PHY-CCA.indication(IDLE), during the period required by that PHY to transfer a frame of the indicated LENGTH at the indicated DATARATE. This physical medium busy condition shall be maintained, and PHY-CCA.indication(IDLE) shall not be generated, during the required period, even if a PHY-RXEND.indication(CarrierLost) or a PHY-RXEND.indication(FormatViolation) is generated by the PHY prior to the end of this period."

Response   *Response Status* **U**

REJECT.

Specification of normative requirements in the abstract interface is not proper.

Cl **12**   *SC* **12.3.5.12.3**   *P* **345**   *L*   # 251
FISCHER, MICHAEL A   Individual

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

[last paragraph] -- An indication with RXERROR of "UnsupportedRate" implies error-free receipt of the PLCP header, because otherwise it would be impossible for the PHY to determine the rate, and an indication with RXERROR of "FormatViolation" would have been generated. Proper operation of the MAC is dependent on the PHY maintaining an indication of WM busy state throughout the duration of the incoming frame for which "UnsupportedRate" was reported.

SuggestedRemedy

Add a new paragraph at the end of this subclause stating: "After generating a PHY-RXEND.indication with RXERROR value "UnsupportedRate," the PHY shall maintain physical medium busy status, and shall not generate a PHY-CCA.indication(IDLE), during the period required by that PHY to transfer a frame of the length and data rate encoded in the PLCP header. If the information in an otherwise-valid PLCP header is inadequate for the local PHY to determine the period required for transfer of the frame, that reception shall be indicated using RXERROR value "FormatViolation."

Response   *Response Status* **U**

REJECT.

Specification of normative requirements in the abstract interface is not proper.

Cl **12**   *SC* **12.3.5.12.3**   *P* **345**   *L* **1**   # 256
FISCHER, MICHAEL A   Individual

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

Proper operation of the MAC is dependent on the timing relationship between the end of reception on the WM and the occurrence of the PHY-RXEND.indication primitive, as illustrated in Figure 133 (9.2.10). The timing constraint depicted there needs to be specified in this subclause.

SuggestedRemedy

At the end of the existing paragraph add a new sentence: "In the case of an RXERROR value of "NoError," this primitive shall be issued within (aRxRFDelay+aRxPLCPDelay), referenced to the end of the last received symbol on the WM. (see Figure 133)"

Response   *Response Status* **U**

REJECT.

Specification of normative requirements in the abstract interface is not proper.

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: Clause, Subclause, page, line

Cl **12**   Page 68 of 75
SC **12.3.5.12.3**   3/10/2006 9:40:55 AM

Submission   **Bob O'Hara, Cisco Systems**

Cl **12**   *SC* **12.3.5.12.4**   *P* **345**   *L* **1**   # 257
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status* **A**
   The effect of receipt of this primitive by the MAC is clearly specified in 9.2.10.

SuggestedRemedy
   Replace the existing sentence with: "The effect of receipt of this primitive is for the MAC to begin inter-frame space processing, as described in 9.2.10."

Response   *Response Status* **C**
   ACCEPT.

   Editor included in draft 5.2 in 12.3.5.12.4.

Cl **12**   *SC* **12.3.5.2.3**   *P* **335**   *L* **3**   # 282
FISCHER, MICHAEL A   Individual

Comment Type   **T**   *Comment Status* **R**
   In the case of an OFDM PHY, it is probably impossible to meet this timing constraint for all octets in a short frame being transferred at a low data rate (<12Mb/s).

SuggestedRemedy
   Add text that defines a timing constraint that an ODFM PHY might actually be able to achieve.

Response   *Response Status* **C**
   REJECT.

   Both parameters are "implementation dependent" for the OFDM PHY. It is not seen how this makes the constraint difficult to meet.

Cl **12**   *SC* **12.3.5.4.4**   *P* **337**   *L* **1**   # 252
FISCHER, MICHAEL A   Individual

Comment Type   **TR**   *Comment Status* **R**
   Proper operation of the MAC is dependent on the timing relationship between issuance of PHY-TXSTART.request and the start of transmission onto the WM, as illustrated in Figure 133 (9.2.10). The timing constraint depicted there needs to be specified in this subclause.

SuggestedRemedy
   After the existing sentence, add the following: "The time between issuance of the PHY-TXSTART.request and the start of transmission of the first symbol of the PHY header onto the WM shall not exceed aRxTxTurnaroundTime."

Response   *Response Status* **U**
   REJECT.

   This is a description of an abstract interface and does not include normative requirements.

Cl **12**   *SC* **12.3.5.5.3**   *P* **338**   *L* **2**   # 253
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status* **A**
   The statement "& is ready to begin receiving data octets." is confusing, and could easily be misinterpreted to pertain to the transition from transmission to reception.

SuggestedRemedy
   Change "receving" to "accepting outgoing" and insert "from the MAC" after "data octets" at the end of the sentence.

Response   *Response Status* **C**
   ACCEPT.

   Editor included in draft 5.2 in 12.3.5.5.3.

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: Clause, Subclause, page, line

Cl **12**
SC **12.3.5.5.3**

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3/10/2006 9:40:55 AM

Submission   **Bob O'Hara, Cisco Systems**

Cl **12**   *SC* **12.3.5.7.3**   *P* **340**   *L*   # 254

FISCHER, MICHAEL A   Individual

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

[1st paragraph] -- The existing statement is both ungrammatical and ambiguous. The timing of this primitive is important to proper MAC operation and the specification of its generation needs to be clarified.

SuggestedRemedy

Replace the existing paragraph with: "This primitive will be issued by the PHY, pursuant to receipt of a PHY-TXEND.request from the MAC, when transmission of the final symbol of the outgoing PPDU onto the WM has completed. This primitive shall occur not more than one PHY symbol preiod after transmission onto the WM has ended."

Response   *Response Status*   **U**

REJECT.

It is not seen how the suggested remedy adds clarity to the description. It is not correct to add normative requirements to the abstract interface.

Cl **14**   *SC* **14.8.2.2**   *P* **387**   *L*   # 89

ECCLESINE, PETER   Individual

Comment Type   **E**   *Comment Status*   **A**

The letters MKK appear for a regulatory agency, but are out of date

SuggestedRemedy

Replace MKK with Japan

Response   *Response Status*   **C**

ACCEPT.

Editor included in draft 5.2 in 14.8.2.2.

Cl **15**   *SC* **15.3.3**   *P* **403**   *L*   # 276

FISCHER, MICHAEL A   Individual

Comment Type   **TR**   *Comment Status*   **A**

[Table 80, row for aMACProcessingDelay] -- The value specified for aMACProcessingDelay is incorrect. The value actually used to generate aSlotTime and aSIFSTime is 2 microseconds.

SuggestedRemedy

Replace the current value with <= 2 microseconds.

Response   *Response Status*   **U**

ACCEPT.

Editor included in draft 5.2 in 15.3.3 Table 119.

Cl **15**   *SC* **15.4.6.2**   *P* **414**   *L*   # 90

ECCLESINE, PETER   Individual

Comment Type   **E**   *Comment Status*   **A**

The letters MKK appear for a regulatory agency, but are out of date

SuggestedRemedy

Replace MKK with Japan

Response   *Response Status*   **C**

ACCEPT.

Editor included in draft 5.2 in 15.4.6.2 Table 124.

Cl **15**   *SC* **15.4.7.1**   *P* **417**   *L*   # 91

ECCLESINE, PETER   Individual

Comment Type   **E**   *Comment Status*   **A**

Appropriate is misspelled

SuggestedRemedy

Fix

Response   *Response Status*   **C**

ACCEPT.

Editor included in draft 5.2 in 15.4.7.1.

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: Clause, Subclause, page, line

Cl **15**
SC **15.4.7.1**

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3/10/2006 9:40:55 AM

Submission   **Bob O'Hara, Cisco Systems**

Cl **16**   *SC* **16**   *P*   *L*   # 109
CHAPLIN, CLINT F   Individual

Comment Type   **TR**   *Comment Status* **A**
This section describes a PHY that, I believe, was never commercially available, and will
never be used in the future. It is no longer necessary to have this PHY in the standard.
Mantaining this section is a waste of the IEEE's time. Essentially the same arguments that
was used to withdraw IEEE 802.11F are to be used here.

SuggestedRemedy
Remove this section, or mark it as obsolete and not to be implemented.

Response   *Response Status* **U**
ACCEPT IN PRINCIPLE.

Insert the following as the first paragraph in the clause: "This clause is no longer
maintained and may not be compatible with all features of the remainder of this standard."

Editor included in draft 5.2 in clause 16.

Cl **17**   *SC* **17.1.2**   *P* **437**   *L* **1**   # 4
LANDT, JEREMY A   Individual

Comment Type   **G**   *Comment Status* **A**
There is no section 5.9 as referenced.

There are two page 437s.

SuggestedRemedy
Replace '5.9' with '5.7' or remove the reference, correct page numbering

Response   *Response Status* **C**
ACCEPT. The new correct reference is 5.8. The editor is to correct the page numbering.

Editor included in draft 5.2 in 17.1.2.

Cl **17**   *SC* **17.3.8.3.2**   *P* **459**   *L*   # 278
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status* **A**
[Last paragraph on page] -- The statement "all channels with 5 MHz spacing" uses spacing
in a manner contrary to its definition in 3.19.

SuggestedRemedy
Change this instance of "spacing" to another term, or remove the "nonoverlapping"
provision in 3.19 (provided that other uses of "spacing" do not depend on the
nonoverlapping property).

Response   *Response Status* **C**
ACCEPT.

Editor included in draft 5.2 in 17.3.8.3.2.

Cl **17**   *SC* **17.4.4**   *P* **472**   *L*   # 279
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status* **A**
[Table 111] -- The values listed as "implementation dependent" are, in fact, constrained by
other, specified values. This fact is much clearer using the wording in Table 139, which has
the same set of characterstics as "implementation dependent"

SuggestedRemedy
Replace each instance of "implementation dependent" with a copy of the text for the
corresponding value in Table 139.

Response   *Response Status* **C**
ACCEPT.

Editor included in draft 5.2 in 17.4.4 in Table 150.

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: Clause, Subclause, page, line

Cl **17**   Page 71 of 75
SC **17.4.4**   3/10/2006 9:40:55 AM

Submission   **Bob O'Hara, Cisco Systems**

Cl **18**   *SC* **18.3.3**   *P* **497**   *L*   # 277
FISCHER, MICHAEL A   Individual

Comment Type   **TR**   *Comment Status*   **A**
[Table 119, row for aMACProcessingDelay] -- The value specified for
aMACProcessingDelay is incorrect. The value actually used to generate aSlotTime and
aSIFSTime is 2 microseconds.

SuggestedRemedy
Replace the current value with <= 2 microseconds.

Response   *Response Status*   **U**
ACCEPT.

Editor included in draft 5.2 in 18.3.3 Table 158.

Cl **A**   *SC* **A.4.4.1**   *P* **569**   *L*   # 33
O'HARA, ROBERT   Individual

Comment Type   **E**   *Comment Status*   **A**
In item PC1.1 The reference to section 5.5 is incorrect, after 5.5 was changed to 5.6.

SuggestedRemedy
change "5.5" to "5.6".

Response   *Response Status*   **C**
ACCEPT.

Editor included in draft 5.2 in A.4.4.1.

Cl **A**   *SC* **A.4.4.1**   *P* **571**   *L*   # 34
O'HARA, ROBERT   Individual

Comment Type   **G**   *Comment Status*   **A**
In item PC14.1, The reference to section 5.5 is incorrect, after 5.5 was changed to 5.6.

SuggestedRemedy
change "5.5" to "5.6".

Response   *Response Status*   **C**
ACCEPT.

Editor included in draft 5.2 in A.4.4.1.

Cl **H**   *SC* **H.6.3**   *P* **950**   *L*   # 108
CHAPLIN, CLINT F   Individual

Comment Type   **TR**   *Comment Status*   **A**
Table H.7: Please also list the source and destination MAC addresses, so that an
implementor could walk through the derivation of the the Phase 1 and Phase 2 outputs.

SuggestedRemedy
Add the following entries to the table:
Source MAC Address: 02 03 04 05 06 07
Destination MAC Address: 02 03 04 05 06 08

Response   *Response Status*   **U**
ACCEPT.

Editor included in draft 5.2 in H.6.3 Table H.7.

Cl **H**   *SC* **H.6.3**   *P* **950**   *L*   # 27
O'HARA, ROBERT   Individual

Comment Type   **T**   *Comment Status*   **A**
Table H.7 lists some vectors for testing TKIP encryption. It would be
nice to also list the source and destination MAC addresses, so that an
implementor could walk through the derivation of the the Phase 1 and
Phase 2 outputs.

The MAC addresses are recoverable from the plaintext message, if we
want to add them to the table.

SuggestedRemedy
Add the MAC addresses to the table.

Response   *Response Status*   **C**
ACCEPT.

See comment ID 108 for correct addresses.

See commend #108 for editorial resolution.

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: Clause, Subclause, page, line

Cl **H**
SC **H.6.3**

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3/10/2006 9:40:55 AM

Submission   **Bob O'Hara, Cisco Systems**

Cl **H**   *SC* **H.7.1.1**   *P* **954**   *L*   # 26
O'HARA, ROBERT   Individual

Comment Type   **E**   *Comment Status* **A**
   The caption for Table H.14 is incorrect.

SuggestedRemedy
   change the caption to "Sample derived CCMP temporal key (TK)"

Response   *Response Status* **C**
   ACCEPT.

   See comment #106 for editorial resolution.

Cl **H**   *SC* **H.7.1.1**   *P* **954**   *L*   # 106
CHAPLIN, CLINT F   Individual

Comment Type   **TR**   *Comment Status* **A**
   Table H.14: Incorrect title

SuggestedRemedy
   "Table H.14--Sample derived CCMP temporal key (TK)"

Response   *Response Status* **U**
   ACCEPT.

   Editor included in draft 5.2 in H.7.1.1 Table H.14.

Cl **I**   *SC* **I.1**   *P* **955**   *L*   # 97
ECCLESINE, PETER   Individual

Comment Type   **TR**   *Comment Status* **A**
   The first paragraph presently refers to the Clause 17 OFDM PHY, not the other radio PHYs

SuggestedRemedy
   Replace the first paragraph with "This annex and Annex J provide information and
   specifications for operation in many regulatory domains."

Response   *Response Status* **U**
   ACCEPT.

   Editor included in draft 5.2 in I.1.

Cl **I**   *SC* **I.2.1**   *P* **957**   *L*   # 98
ECCLESINE, PETER   Individual

Comment Type   **TR**   *Comment Status* **A**
   The NOTE, Tables I.4 and I.5, Figures I.1 and I.2 are informative, and are no longer
   needed, as the law took effect in May 2005, and the Emissions Limits sets inform about the
   law

SuggestedRemedy
   Remove the Note on p957, and the remaining part of I.2.1

Response   *Response Status* **U**
   ACCEPT.

   Delete the note and all that follows in I.2.1.

   Editor included in draft 5.2 in I.2.1 by deleting text, Tables I.4 and I.5, and Figures I.1 and
   I.2

Cl **I**   *SC* **I.2.1**   *P* **961**   *L*   # 99
ECCLESINE, PETER   Individual

Comment Type   **TR**   *Comment Status* **A**
   Figures I.4 and I.5 are redundant to I.2.3 text, and should be removed. The first sentence in
   the NOTE should also be removed.

SuggestedRemedy
   Remove the first sentence in the NOTE on p961, and Figures I.4 and I.5

Response   *Response Status* **U**
   ACCEPT.

   Editor included in draft 5.2 in I.2.1 by deleting text and Figures I.4 and I.5.

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: Clause, Subclause, page, line

Cl **I**   Page 73 of 75
SC **I.2.1**   3/10/2006 9:40:55 AM

Submission   **Bob O'Hara, Cisco Systems**

Cl **J**	*SC* **J.1**	*P* **965**	*L* **1**	# 290

ECCLESINE, PETER   Individual

Comment Type   **TR**   *Comment Status* **A**   *4.9*

The US allows 10 MHz channel spacing in the 4.9 GHz band under CFR 47 90.12xx using radios much like the clause 17 PHY, but Annex J does not represent that

SuggestedRemedy

Editor to change draft according to 11-05-1121-00-000m-modifications-to-802-11ma-standard-regarding4-9ghz-band.doc draft text to describe operation in US using 10 MHz channel spacing

Response   *Response Status* **U**

ACCEPT.

Editor included in draft 5.2.

Cl **J**	*SC* **J-1**	*P* **965**	*L* **1**	# 291

ECCLESINE, PETER   Individual

Comment Type   **TR**   *Comment Status* **A**   *4.9*

The US allows 5 MHz channel spacing in the 4.9 GHz band under CFR 47 90.12xx using radios much like the clause 17 PHY, but Annex J does not represent that

SuggestedRemedy

Editor to change draft according to 11-05-1121-00-000m-modifications-to-802-11ma-standard-regarding-4-9ghz-band.doc draft text to describe operation in US using 5 MHz channel spacing

Response   *Response Status* **U**

ACCEPT.

Editor included in draft 5.2.

Cl **J**	*SC* **J-1**	*P* **966**	*L* **1**	# 293

ECCLESINE, PETER   Individual

Comment Type   **TR**   *Comment Status* **A**   *4.9*

Japan allows 5 MHz channels in the 5.03 GHz-5.091 GHz band, and Annex J does not represent that

SuggestedRemedy

Editor to change draft according to 11-05-1121-00-000m-modifications-to-802-11ma-standard-regarding-4-9ghz-band.doc draft text to describe operation in Japan 4.9 GHz and 5GHz bands using 5 MHz channel spacing

Response   *Response Status* **U**

ACCEPT.   Use r1 of the document.

Editor included in draft 5.2.

Cl **N**	*SC* **N.1**	*P*	*L*	# 5

STEPHENS, ADRIAN P   Individual

Comment Type   **E**   *Comment Status* **A**

The architecture picture is confusing because it has the same SAP at multiple layers. Also the multiplicities of the entities are not clear.

SuggestedRemedy

Recommend drawing with a wide portal layer at the top below which are multiple portals and multiple AP stacks. This emphasises the role of the DS in distribution and positions the DS-SAPs at the same level.

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Note that SAPs denote interfaces between service users and service providers, not layers. The picture and text have been revised for added clarity.

Editor:
Replace Figure N1 with Figure 1 from doc 11-05-0262-03, and see comment #6 for text changes.

Editor included in draft 5.2 in O.1 by replacing Figure O.1.

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: Clause, Subclause, page, line

Cl **N**
SC **N.1**

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3/10/2006 9:40:55 AM

Submission   **Bob O'Hara, Cisco Systems**

Cl **N**   *SC* **N.1**   *P*   *L*   # 6

STEPHENS, ADRIAN P   Individual

Comment Type   **E**   *Comment Status*   **A**

The DS-STA-NOTIFY primitive is probably best viewed as travelling "up the stack" from the AP to the DS.

SuggestedRemedy

Change it from a "request" to an "indication"

Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.

There is no sense of "up" in this scenario. Request primitives (requestor.submit) are generated by SAP service users. Indication primitives (acceptor.deliver) are generated by SAP service providers. Since an AP is a service user of the DS SAP, then "request" is the appropriate primitive.

Editor:
Change this sentence:
"The DS SAP is the interface between the DS and the users of the DS, which are the connected APs and the portals."
to:
"The DS SAP is the interface between the DS SAP service users and the DS SAP service provider. The DS SAP service users are the connected APs and the portals. The DS SAP service provider is the DS."

Editor included in draft 5.2 in O.1.

Cl **N**   *SC* **N.2.1.1.4**   *P* **986**   *L*   # 288

ENGWER, DARWIN A   Individual

Comment Type   **ER**   *Comment Status*   **A**

To more properly align with clause 3 definitions:

SuggestedRemedy

Change
"This primitive initiates distribution of the DSSDU through the DS. A directed DSSDU from"
to
"This primitive initiates distribution of the DSSDU through the DS. An individually addressed DSSDU from"

Response   *Response Status*   **U**

ACCEPT.

Editor included in draft 5.2 in O.2.1.1.4.

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: Clause, Subclause, page, line

Cl **N**   Page 75 of 75
SC **N.2.1.1.4**   3/10/2006 9:40:55 AM

Submission   **Bob O'Hara, Cisco Systems**