Cl **00**   *SC*   *P*   *L*   # 107

CHAPLIN, CLINT F   Individual

Comment Type **G**   *Comment Status* **D**

No line numbers

SuggestedRemedy

Put in line numbers, please

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

Editor included in draft 5.2.

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

FISCHER, MICHAEL A   Individual

Comment Type **G**   *Comment Status* **D**

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.

Proposed Response   *Response Status* **W**

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Before the subtitle, insert "This clause is no longer maintained and may not be compatible with or describe all features of this standard."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

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COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn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 C**

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

Cl **00**   *SC* **Annex I**   *P* **960**   *L*   # 297

INOUE, YASUHIKO   Individual

Comment Type   **G**   *Comment Status*   **D**

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

SuggestedRemedy

Please update the table.

Proposed Response   *Response Status*   **W**

PROPOSED 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?

Cl **00**   *SC* **Annex J**   *P* **966**   *L*   # 298

INOUE, YASUHIKO   Individual

Comment Type   **G**   *Comment Status*   **D**

I hope the Table J.3 to be modified based on current regulation.

SuggestedRemedy

Proposed Response   *Response Status*   **W**

PROPOSED 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* **Figure 51**   *P* **86**   *L*   # 87

ECCLESINE, PETER   Individual

Comment Type   **E**   *Comment Status*   **D**

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

Proposed Response   *Response Status*   **W**

PROPOSED ACCEPT.

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

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

STEPHENS, ADRIAN P   Individual

Comment Type   **ER**   *Comment Status*   **D**

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).

Proposed Response   *Response Status*   **W**

PROPOSED 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* **D**
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.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Editor included in draft 5.2 by modifying 1.1.

Cl **02** *SC* **2** *P* **4** *L* # 136
FISCHER, MICHAEL A Individual

Comment Type **G** *Comment Status* **D**
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

Proposed Response *Response Status* **W**
PROPOSED 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* **3.104** *P* **11** *L* **1** # 121
FISCHER, MICHAEL A Individual

Comment Type **E** *Comment Status* **D**
"extended service set (ESS) basic rate set" is undefined

SuggestedRemedy
Add a definition of ESS basic rate set

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

See #114 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 **3.104**

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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*   **D**

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

SuggestedRemedy

Change "directed address" to "directed frame".

Proposed Response   *Response Status*   **W**

PROPOSED 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*   **D**

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.

Proposed Response   *Response Status*   **W**

PROPOSED 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*   **D**

"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"

Proposed Response   *Response Status*   **W**

PROPOSED ACCEPT.

Editor included in draft 5.2 in 3.159.

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

Comment Type   **E**   *Comment Status*   **D**

Channel spacing' is not bolded

SuggestedRemedy

Bold 'Channel Spacing'

Proposed Response   *Response Status*   **W**

PROPOSED 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* **3.26**   *P* **6**   *L* **1**   # 117
FISCHER, MICHAEL A   Individual

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

SuggestedRemedy
     change to "disclosure to"

Proposed Response   *Response Status* **W**
     PROPOSED 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* **D**
     "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."

Proposed Response   *Response Status* **W**
     PROPOSED ACCEPT.

     Editor included in draft 5.2 in 3.44.

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

Comment Type **E**   *Comment Status* **D**
     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.

Proposed Response   *Response Status* **W**
     PROPOSED ACCEPT.

     Editor included in draft 5.2 by adding 3.52.

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

Comment Type **E**   *Comment Status* **D**
     The referent of "It" at the beginning of the second sentence is ambiguous.

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

Proposed Response   *Response Status* **W**
     PROPOSED 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* **D**
     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"

Proposed Response   *Response Status* **W**
     PROPOSED 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* **3.8**   *P* **5**   *L*   # 50
O'HARA, ROBERT   Individual

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

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

Proposed Response   *Response Status*   **W**
    PROPOSED 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*   **D**
    "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."

Proposed Response   *Response Status*   **W**
    PROPOSED 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*   **D**
    "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"

Proposed Response   *Response Status*   **W**
    PROPOSED ACCEPT.

    Editor included in draft 5.2 in 3.114.

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

Comment Type   **G**   *Comment Status*   **D**
    The second sentence 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.

Proposed Response   *Response Status*   **W**
    PROPOSED 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.

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 **5.1.1**

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

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

Comment Type   **E**   *Comment Status* **D**
"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"

Proposed Response   *Response Status* **W**
PROPOSED 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* **D**
"members of the BSA" is poor wording, as membership is not an attribute of an area

SuggestedRemedy
Change to "stations present in the BSA"

Proposed Response   *Response Status* **W**
PROPOSED 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* **D**
missing space in "isany"

SuggestedRemedy
change to "is any"

Proposed Response   *Response Status* **W**
PROPOSED 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* **D**
There is a space missing text currenlty reads "isany".

SuggestedRemedy
Replace "isany" with "is any"

Proposed Response   *Response Status* **W**
PROPOSED ACCEPT.

See response to comment #126 for editorial resolution.

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

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

SuggestedRemedy
Replace WM with: wireless medium (WM)

Proposed Response   *Response Status* **W**
PROPOSED 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* **D**
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.

Proposed Response   *Response Status* **W**
PROPOSED 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.

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 **5.2.5**

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

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

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

SuggestedRemedy
    Change to "association is handled differently"

Proposed Response   *Response Status*   **W**
    PROPOSED 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*   **D**
    "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."

Proposed Response   *Response Status*   **W**
    PROPOSED 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*   **D**
    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.

Proposed Response   *Response Status*   **W**
    PROPOSED 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*   **D**
    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."

Proposed Response   *Response Status*   **W**
    PROPOSED ACCEPT.

    Editor included in draft 5.2 in 5.4.3.3.

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

Comment Type   **E**   *Comment Status*   **D**
    [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.

Proposed Response   *Response Status*   **W**
    PROPOSED 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*   **D**
    [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.

Proposed Response   *Response Status*   **W**
    PROPOSED ACCEPT.

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

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 **5.7**

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

Cl **06**	*SC* **6.2.1**	*P* **48**	*L* **5**	# 137

FISCHER, MICHAEL A   Individual

Comment Type **E**   *Comment Status* **D**

incorrect word

SuggestedRemedy

change "specify" to "specific"

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

Editor included in draft 5.2 in 6.2.1.

Cl **06**	*SC* **6.2.1.2.2**	*P* **51**	*L* **2**	# 138

FISCHER, MICHAEL A   Individual

Comment Type **E**   *Comment Status* **D**

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"

Proposed Response   *Response Status* **W**

PROPOSED 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* **D**

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"

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

Editor included in draft 5.2 in 6.2.1.2.3.

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

FISCHER, MICHAEL A   Individual

Comment Type **T**   *Comment Status* **D**

"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"

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

Editor changed comment type to technical from editorial.

Editor included in drat 5.2 in 6.2.1.2.4.

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

FISCHER, MICHAEL A   Individual

Comment Type **E**   *Comment Status* **D**

split infinitive

SuggestedRemedy

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

Proposed Response   *Response Status* **W**

PROPOSED 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* **D**

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"

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

Editor included in draft 5.2 in 7.1.1.

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 **7.1.1**

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

Cl **07**   *SC* **7.1.3.1.1**   *P* **54**   *L* **4**   # 144
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **D**
   Clarify where the Protocol Version field is checked.

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

Proposed Response   *Response Status*   **W**
   PROPOSED ACCEPT.

   Editor included in draft 5.2 in 7.1.3.1.1.

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

Comment Type   **E**   *Comment Status*   **D**
   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)"

Proposed Response   *Response Status*   **W**
   PROPOSED ACCEPT.

   Editor included in draft 5.2 in 7.1.3.3.2.

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

Comment Type   **E**   *Comment Status*   **D**
   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."

Proposed Response   *Response Status*   **W**
   PROPOSED 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*   **D**
   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."

Proposed Response   *Response Status*   **W**
   PROPOSED 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*   **D**
   [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."

Proposed Response   *Response Status*   **W**
   PROPOSED 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*   **D**
   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.

Proposed Response   *Response Status*   **W**
   PROPOSED 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*   # 151
FISCHER, MICHAEL A   Individual

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

SuggestedRemedy
Correct the field label to "BSSID"

Proposed Response   *Response Status*   **W**
PROPOSED ACCEPT.

Editor included in draft 5.2 in 7.2.1.4 Figure 27.

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

Comment Type   **E**   *Comment Status*   **D**
[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)"

Proposed Response   *Response Status*   **W**
PROPOSED ACCEPT.

Editor added to draft 5.2 in 7.2.2.

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

Comment Type   **E**   *Comment Status*   **D**
[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.

Proposed Response   *Response Status*   **W**
PROPOSED ACCEPT.

Editor included in draft 5.2 in 7.2.3.1 Table 8.

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

Comment Type   **E**   *Comment Status*   **D**
[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.

Proposed Response   *Response Status*   **W**
PROPOSED ACCEPT.

Editor included in draft 5.2 in 7.2.3.1 Table 8.

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

Comment Type   **E**   *Comment Status*   **D**
Clarify the use of the listen interval

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

Proposed Response   *Response Status*   **W**
PROPOSED ACCEPT.

Editor included in draft 5.2 in 7.3.1.6.

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**
SC **7.3.1.6**

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

| *Cl* **07** | *SC* **7.3.1.7** | *P* **77** | *L* | # 163 |

FISCHER, MICHAEL A   Individual

Comment Type **E**   *Comment Status* **D**

[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.

Proposed Response   *Response Status* **W**

PROPOSED 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.

| *Cl* **07** | *SC* **7.3.1.9** | *P* **79** | *L* | # 164 |

FISCHER, MICHAEL A   Individual

Comment Type **E**   *Comment Status* **D**

[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.

Proposed Response   *Response Status* **W**

PROPOSED 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* | # 165 |

FISCHER, MICHAEL A   Individual

Comment Type **E**   *Comment Status* **D**

[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.

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

Editor included in draft 5.2 in 7.3.2 Table 26.

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

FISCHER, MICHAEL A   Individual

Comment Type **E**   *Comment Status* **D**

[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"

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

Editor included in draft 5.2 in 7.3.2.15.

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

FISCHER, MICHAEL A   Individual

Comment Type **E**   *Comment Status* **D**

[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.

Proposed Response   *Response Status* **W**

PROPOSED 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**

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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*   **D**

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.

Proposed Response   *Response Status*   **W**

PROPOSED 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*   # 167

FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **D**

[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.

Proposed Response   *Response Status*   **W**

PROPOSED ACCEPT.

Editor included in draft 5.2 in 7.3.2.6.

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

FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **D**

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

SuggestedRemedy

Change "will be" to "is"

Proposed Response   *Response Status*   **W**

PROPOSED 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**
SC **7.3.2.6**

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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*   **D**

[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.

Proposed Response   *Response Status*   **W**

PROPOSED 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*   **D**

*** 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

Proposed Response   *Response Status*   **W**

PROPOSED ACCEPT.

See duplicate comment #87 for editorial resolution.

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

Comment Type   **G**   *Comment Status*   **D**

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.

Proposed Response   *Response Status*   **W**

PROPOSED 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.

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 **8.3.2**

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

Cl **08**   *SC* **8.5.1.1**   *P*   *L*   # 84

MYLES, ANDREW F   Individual

Comment Type **TR**   *Comment Status* **D**   *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.

Proposed Response   *Response Status* **W**

PROPOSED REJECT.

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

Cl **08**   *SC* **8.5.7.2**   *P* **188**   *L* **37**   # 1

KARCZ, KEVIN J   Individual

Comment Type **E**   *Comment Status* **D**

EAPOL mispelled in definition of GTimeoutCtr as EAPIOL.

SuggestedRemedy

edit

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

Editor included in draft 5.2 in 8.5.7.2.

Cl **09**   *SC* **9.1.4**   *P* **198**   *L*   # 173

FISCHER, MICHAEL A   Individual

Comment Type **E**   *Comment Status* **D**

[3rd paragraph] -- Typo in attribute name

SuggestedRemedy

Delete the initial "a" in "adot11FragmentationThreshold"

Proposed Response   *Response Status* **W**

PROPOSED 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* **D**

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"

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

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

Cl **09**   *SC* **9.2**   *P* **199**   *L*   # 175

FISCHER, MICHAEL A   Individual

Comment Type **E**   *Comment Status* **D**

[7th paragraph] -- "cannot" is too absolute

SuggestedRemedy

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

Proposed Response   *Response Status* **W**

PROPOSED 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* **D**

[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"

Proposed Response   *Response Status* **W**

PROPOSED 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*   # 176

FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **D**

[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"

Proposed Response   *Response Status*   **W**

PROPOSED 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*   **D**

[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.

Proposed Response   *Response Status*   **W**

PROPOSED 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*   # 200

FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **D**

[Figure 133] -- "aMACPrcDelay" is inconsistent with 10.4.3.2, where the parameter is named "aMACProcessingDelay"

SuggestedRemedy

Change "aMACPrcDelay" to "aMACProcessingDelay"

Proposed Response   *Response Status*   **W**

PROPOSED 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*   **D**

[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"

Proposed Response   *Response Status*   **W**

PROPOSED 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*   **D**

[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"

Proposed Response   *Response Status*   **W**

PROPOSED ACCEPT.

Editor included in draft 5.2 in 9.2.2.

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   **09**
SC   **9.2.2**

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

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

Comment Type   **E**   *Comment Status*   **D**
    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"

Proposed Response   *Response Status*   **W**
    PROPOSED 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*   **D**
    The "It" at the beginning of the 2nd sentence of the paragraph is ambiguous.

SuggestedRemedy
    Change "It" to "SIFS"

Proposed Response   *Response Status*   **W**
    PROPOSED ACCEPT.

    Editor included in draft 5.2 in 9.2.3.1.

Cl **09**   *SC* **9.2.4**   *P* **203**   *L* **1**   # 186
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **D**
    In the sentence beginning "Once it reaches aCWmax" the referent of "it" is ambiguous.

SuggestedRemedy
    Change "it" to "CW"

Proposed Response   *Response Status*   **W**
    PROPOSED 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*   **D**
    [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"

Proposed Response   *Response Status*   **W**
    PROPOSED 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*   **D**
    [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"

Proposed Response   *Response Status*   **W**
    PROPOSED ACCEPT.

    Editor included in draft 5.2 in Figure 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 **09**
SC **9.2.5.1**

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3/8/2006 8:36:04 AM

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

Cl **09**　　　*SC* **9.2.5.2**　　　　　*P* **204**　　　*L*　　　# 191
FISCHER, MICHAEL A　　　　　　　Individual

Comment Type　**G**　　*Comment Status*　**D**

[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.

Proposed Response　　　*Response Status*　**W**

PROPOSED ACCEPT IN PRINCIPLE.

Editor included in draft 5.2 in 9.2.5.2 and 9.9.1.5.

Cl **09**　　　*SC* **9.2.5.2**　　　　　*P* **205**　　　*L*　　　# 192
FISCHER, MICHAEL A　　　　　　　Individual

Comment Type　**E**　　*Comment Status*　**D**

[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)"

Proposed Response　　　*Response Status*　**W**

PROPOSED ACCEPT.

Editor included in draft 5.2 in 9.2.5.2.

Cl **09**　　　*SC* **9.2.5.2**　　　　　*P* **205**　　　*L*　　　# 189
FISCHER, MICHAEL A　　　　　　　Individual

Comment Type　**E**　　*Comment Status*　**D**

[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)"

Proposed Response　　　*Response Status*　**W**

PROPOSED 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*　**D**

[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).

Proposed Response　　　*Response Status*　**W**

PROPOSED 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* **9.2.5.6**   *P* **209**   *L*   # 196
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status* **D**
[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.

Proposed Response   *Response Status* **W**
PROPOSED 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* **D**
[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"

Proposed Response   *Response Status* **W**
PROPOSED ACCEPT.

Editor included in draft 5.2 in 9.2.5.7.

Cl **09**   *SC* **9.2.6**   *P* **210**   *L*   # 197
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status* **D**
[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"

Proposed Response   *Response Status* **W**
PROPOSED ACCEPT.

Editor included in draft 5.2 in 9.2.6.

Cl **09**   *SC* **9.2.7**   *P* **210**   *L* **5**   # 198
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status* **D**
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"

Proposed Response   *Response Status* **W**
PROPOSED 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* **D**
[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"

Proposed Response   *Response Status* **W**
PROPOSED ACCEPT.

Editor included in draft 5.2 in 9.2.6.

Cl **09**   *SC* **9.3**   *P* **213**   *L* **3**   # 202
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status* **D**
The referent of "they" in "they set their NAV" is unclear.

SuggestedRemedy
Replace "they" with "all STAs"

Proposed Response   *Response Status* **W**
PROPOSED 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* **9.3.1**	*P* **215**	*L*	# 207

FISCHER, MICHAEL A — Individual

Comment Type **E**   *Comment Status* **D**

[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"

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

Editor included in draft 5.2 in 9.3.1.

Cl **09**	*SC* **9.3.1**	*P* **215**	*L*	# 205

FISCHER, MICHAEL A — Individual

Comment Type **E**   *Comment Status* **D**

[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"

Proposed Response   *Response Status* **W**

PROPOSED 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* **D**

[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"

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

Editor included in draft 5.2 in 9.3.1.

Cl **09**	*SC* **9.3.2**	*P* **216**	*L*	# 210

FISCHER, MICHAEL A — Individual

Comment Type **E**   *Comment Status* **D**

[Figure 136] -- Incorrect attribute name at the top of the diagram.

SuggestedRemedy

Change "aCF MaxDuration" to "dot11CFPMaxDuration"

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

Editor included in draft 5.2 in figure 168.

Cl **09**	*SC* **9.3.2.2**	*P* **216**	*L*	# 213

FISCHER, MICHAEL A — Individual

Comment Type **E**   *Comment Status* **D**

[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"

Proposed Response   *Response Status* **W**

PROPOSED 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

Cl **09**
SC **9.3.2.2**

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

Cl **09**   *SC* **9.3.2.2**   *P* **216**   *L*   # 212
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **D**
[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"

Proposed Response   *Response Status* **W**
PROPOSED 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*   **D**
[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.

Proposed Response   *Response Status* **W**
PROPOSED 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*   **D**
[Figure 137] -- Incorrect nomenclature in the label at the lower right of this diagram.

SuggestedRemedy
Change "CF_Max_Duration" to "CFPMaxDuration"

Proposed Response   *Response Status* **W**
PROPOSED ACCEPT.

Editor included in draft 5.2 in figure 169.

Cl **09**   *SC* **9.3.3.1**   *P* **217**   *L* **0**   # 217
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **D**
[heading] -- Incorrect use of "PCF"

SuggestedRemedy
Change "the PCF STA" to "the PC STA"

Proposed Response   *Response Status* **W**
PROPOSED ACCEPT.

Editor included in draft 5.2 in 9.3.3.1.

Cl **09**   *SC* **9.3.3.3**   *P* **219**   *L*   # 221
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **D**
[last paragraph] -- Obsolete reference to "CFPRate"

SuggestedRemedy
Replace "CFPRate" with "CFPPeriod"

Proposed Response   *Response Status* **W**
PROPOSED ACCEPT.

Cl **09**   *SC* **9.3.4.2**   *P* **221**   *L*   # 223
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **D**
[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)."

Proposed Response   *Response Status* **W**
PROPOSED 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 **9.3.4.2**

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

Cl **09**	*SC* **9.4**	*P* **221**	*L*	# 224

FISCHER, MICHAEL A   Individual

Comment Type **E**   *Comment Status* **D**

[2nd paragraph] -- Mention of "an MPDU" is ambiguous

SuggestedRemedy

Replace both instances of "an MPDU" in this paragraph with "each fragment"

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

Cl **09**	*SC* **9.6**	*P* **223**	*L*	# 227

FISCHER, MICHAEL A   Individual

Comment Type **E**   *Comment Status* **D**

[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."

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

Cl **09**	*SC* **9.6**	*P* **223**	*L*	# 226

FISCHER, MICHAEL A   Individual

Comment Type **E**   *Comment Status* **D**

[2nd paragraph on page] -- Incorrect nomenclature

SuggestedRemedy

Replace "BSS basic rate set" with "BSSBasicRateSet"

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

Replace throughout the document.

Cl **10**	*SC* **10.3.1.2.3**	*P* **234**	*L* **2**	# 230

FISCHER, MICHAEL A   Individual

Comment Type **E**   *Comment Status* **D**

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"

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

Editor included in draft 5.2 in 10.3.1.2.3.

Cl **11**	*SC* **11.1.1.1**	*P* **305**	*L*	# 241

FISCHER, MICHAEL A   Individual

Comment Type **E**   *Comment Status* **D**

[last paragraph] -- Obsolete attribute name

SuggestedRemedy

Change "aBeaconPeriod" to "dot11BeaconPeriod"

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

Editor included in draft 5.2 in 11.1.1.1.

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 **11**
SC **11.1.1.1**

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

Cl **11**	*SC* **11.1.2**	*P* **305**	*L* **8**	# 231

FISCHER, MICHAEL A   Individual

Comment Type   **TR**   *Comment Status*   **D**

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.)

Proposed Response   *Response Status*   **W**

PROPOSED 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*   **D**

[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"

Proposed Response   *Response Status*   **W**

PROPOSED ACCEPT.

Editor included in draft 5.2 in 11.1.2.2.

Cl **11**	*SC* **11.1.2.2**	*P* **306**	*L* **4**	# 242

FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **D**

"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."

Proposed Response   *Response Status*   **W**

PROPOSED 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*   **D**

[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."

Proposed Response   *Response Status*   **W**

PROPOSED REJECT.

There is insufficient rationale provided by the commenter to implement the requested change.

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 **11.1.2.3**

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

Cl **11**   *SC* **11.1.2.3**   *P* **306**   *L* **1**   # 244
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **D**
   Clarify which Beacon frames are used as the basis for NAV update.

SuggestedRemedy
   Insert ", without regard for the BSSID," after "Beacon frames"

Proposed Response   *Response Status*   **W**
   PROPOSED 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*   **D**
   The specification of the TSF timer accuracy is a constraint, not a requirement.

SuggestedRemedy
   Insert "no worse than" after "TSF timer shall be"

Proposed Response   *Response Status*   **W**
   PROPOSED 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*   **D**
   [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"

Proposed Response   *Response Status*   **W**
   PROPOSED ACCEPT.

   Editor included in draft 5.2 in 11.1.3.

Cl **11**   *SC* **11.1.3.2.1**   *P* **308**   *L*   # 248
FISCHER, MICHAEL A   Individual

Comment Type   **TR**   *Comment Status*   **D**
   [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."

Proposed Response   *Response Status*   **W**
   PROPOSED 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*   **D**

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.

Proposed Response   *Response Status*   **W**

PROPOSED 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.

Cl **11**   *SC* **11.2.1**   *P* **311**   *L*   # 249

FISCHER, MICHAEL A   Individual

Comment Type   **TR**   *Comment Status*   **D**

[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"

Proposed Response   *Response Status*   **W**

PROPOSED 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.

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**

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

Cl **11**   *SC* **11.2.1.3**   *P* **312**   *L*   # 262
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **D**
[3rd paragraph] -- "some of which may be DTIMs" implies that the sending of DTIMs is optional

SuggestedRemedy
Change "may be DTIMs" to "are DTIMs"

Proposed Response   *Response Status*   **W**
PROPOSED ACCEPT.

Cl **11**   *SC* **11.2.1.3**   *P* **312**   *L*   # 261
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **D**
[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"

Proposed Response   *Response Status*   **W**
PROPOSED ACCEPT.

Cl **11**   *SC* **11.2.1.3**   *P* **313**   *L*   # 263
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **D**
[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.

Proposed Response   *Response Status*   **W**
PROPOSED ACCEPT.

Cl **11**   *SC* **11.2.1.4**   *P* **313**   *L*   # 265
FISCHER, MICHAEL A   Individual

Comment Type   **TR**   *Comment Status*   **D**
[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"

Proposed Response   *Response Status*   **W**
PROPOSED 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*   **D**
[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"

Proposed Response   *Response Status*   **W**
PROPOSED ACCEPT.

Cl **11**   *SC* **11.2.1.4**   *P* **313**   *L* **4**   # 264
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **D**
"frames received for STAs operating in the Active mode" is ambiguous.

SuggestedRemedy
Change "received for" to "addressed directly to"

Proposed Response   *Response Status*   **W**
PROPOSED 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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Submission   **Bob O'Hara, Cisco Systems**

Cl **11**	*SC* **11.2.1.5**	*P* **314**	*L*	#	268

FISCHER, MICHAEL A   Individual

Comment Type **TR**   *Comment Status* **D**

[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"

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

Editor included in draft 5.2 in 11.2.1.6.

Cl **11**	*SC* **11.2.1.5**	*P* **314**	*L*	#	269

FISCHER, MICHAEL A   Individual

Comment Type **E**   *Comment Status* **D**

[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"

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

Cl **11**	*SC* **11.2.1.5**	*P* **314**	*L*	#	267

FISCHER, MICHAEL A   Individual

Comment Type **E**   *Comment Status* **D**

[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"

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

Cl **11**	*SC* **11.2.1.5**	*P* **314**	*L*	#	270

FISCHER, MICHAEL A   Individual

Comment Type **E**   *Comment Status* **D**

[paragraph "h)"] -- Incorrect acronym

SuggestedRemedy

Change "PCF" to "PC"

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

Cl **11**	*SC* **11.2.1.6**	*P* **314**	*L*	#	271

FISCHER, MICHAEL A   Individual

Comment Type **E**   *Comment Status* **D**

[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"

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

Cl **11**	*SC* **11.2.1.6**	*P* **315**	*L*	#	273

FISCHER, MICHAEL A   Individual

Comment Type **E**   *Comment Status* **D**

[paragraph "c)"] -- Not only data frames can be sent in response to a PS-Poll.

SuggestedRemedy

Change "Data frame" to "Data or Management frame"

Proposed Response   *Response Status* **W**

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

Cl **11**   *SC* **11.2.1.6**   *P* **315**   *L*   # 275
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **D**
[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"

Proposed Response   *Response Status*   **W**
PROPOSED ACCEPT.

Cl **11**   *SC* **11.2.1.6**   *P* **315**   *L*   # 274
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **D**
[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."

Proposed Response   *Response Status*   **W**
PROPOSED REJECT.

Cl **11**   *SC* **11.2.1.8**   *P* **315**   *L* **1**   # 272
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **D**
Obsolete terminology

SuggestedRemedy
Replace the text after "continuously;" with "such stations do not need to interpret the TIM information elements in Beacon frames."

Proposed Response   *Response Status*   **W**
PROPOSED ACCEPT.

Cl **11**   *SC* **11.2.2.2**   *P* **317**   *L*   # 260
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **D**
[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"

Proposed Response   *Response Status*   **W**
PROPOSED ACCEPT.

Cl **11**   *SC* **11.2.2.3**   *P* **318**   *L* **3**   # 259
FISCHER, MICHAEL A   Individual

Comment Type   **E**   *Comment Status*   **D**
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"

Proposed Response   *Response Status*   **W**
PROPOSED 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 **11.2.2.3**

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

Cl **11**   *SC* **11.3**   *P* **320**   *L*   # 25

O'HARA, ROBERT   Individual

Comment Type   **G**   *Comment Status*   **D**

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.

Proposed Response   *Response Status*   **W**

PROPOSED 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

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 STAās 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 STAās 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.

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**

Cl **11**   *SC* **11.3.2**   *P*   *L*   # 15
STEPHENS, ADRIAN P   Individual

Comment Type   **TR**   *Comment Status*   **D**

"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.

Proposed Response   *Response Status*   **W**

PROPOSED 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* **11.5**   *P* **323**   *L*   # 92
ECCLESINE, PETER   Individual

Comment Type   **TR**   *Comment Status*   **D**

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)."

Proposed Response   *Response Status*   **W**

PROPOSED 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* **11.6.7.2**   *P*   *L*   # 65
MYLES, ANDREW F   Individual

Comment Type   **TR**   *Comment Status*   **D**

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

Proposed Response   *Response Status*   **W**

PROPOSED 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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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* **D**

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"

Proposed Response   *Response Status* **W**

PROPOSED 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* **D**

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."

Proposed Response   *Response Status* **W**

PROPOSED 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* **D**

[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."

Proposed Response   *Response Status* **W**

PROPOSED 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* **D**

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)"

Proposed Response   *Response Status* **W**

PROPOSED 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**
SC **12.3.5.12.3**

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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* **D**

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."

Proposed Response   *Response Status* **W**

PROPOSED 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* **D**

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.

Proposed Response   *Response Status* **W**

PROPOSED 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* **D**

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."

Proposed Response   *Response Status* **W**

PROPOSED 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* **D**

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.

Proposed Response   *Response Status* **W**

PROPOSED 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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3/8/2006 8:36:05 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* **D**

[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."

Proposed Response   *Response Status* **W**
PROPOSED 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* **D**

The letters MKK appear for a regulatory agency, but are out of date

SuggestedRemedy

Replace MKK with Japan

Proposed Response   *Response Status* **W**
PROPOSED 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* **D**

[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.

Proposed Response   *Response Status* **W**
PROPOSED 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* **D**

The letters MKK appear for a regulatory agency, but are out of date

SuggestedRemedy

Replace MKK with Japan

Proposed Response   *Response Status* **W**
PROPOSED ACCEPT.

Editor included in draft 5.2 in 15.4.6.2 Table 124.

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 **15.4.6.2**

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

Cl **16**   *SC* **16**   *P*   *L*   # 109

CHAPLIN, CLINT F   Individual

Comment Type **TR**   *Comment Status* **D**

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.

Proposed Response   *Response Status* **W**

PROPOSED 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* **17.3.8.3.2**   *P* **459**   *L*   # 278

FISCHER, MICHAEL A   Individual

Comment Type **E**   *Comment Status* **D**

[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).

Proposed Response   *Response Status* **W**

PROPOSED 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* **D**

[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.

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

Editor included in draft 5.2 in 17.4.4 in Table 150.

Cl **18**   *SC* **18.3.3**   *P* **497**   *L*   # 277

FISCHER, MICHAEL A   Individual

Comment Type **TR**   *Comment Status* **D**

[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.

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

Editor included in draft 5.2 in 18.3.3 Table 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 **18**
SC **18.3.3**

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

Cl **H**   *SC* **H.6.3**   *P* **950**   *L*   # 108

CHAPLIN, CLINT F   Individual

Comment Type   **TR**   *Comment Status* **D**

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

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

Editor included in draft 5.2 in H.6.3 Table H.7.

Cl **H**   *SC* **H.7.1.1**   *P* **954**   *L*   # 106

CHAPLIN, CLINT F   Individual

Comment Type   **TR**   *Comment Status* **D**

Table H.14: Incorrect title

SuggestedRemedy

"Table H.14--Sample derived CCMP temporal key (TK)"

Proposed Response   *Response Status* **W**

PROPOSED 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* **D**

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."

Proposed Response   *Response Status* **W**

PROPOSED 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* **D**

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

Proposed Response   *Response Status* **W**

PROPOSED 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* **D**

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

Proposed Response   *Response Status* **W**

PROPOSED 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**
SC **I.2.1**

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

Cl **J**   *SC* **J.1**   *P* **965**   *L* **1**   # 290

ECCLESINE, PETER   Individual

Comment Type   **TR**   *Comment Status*   **D**   *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

Proposed Response   *Response Status*   **W**

PROPOSED 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*   **D**   *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

Proposed Response   *Response Status*   **W**

PROPOSED 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*   **D**   *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

Proposed Response   *Response Status*   **W**

PROPOSED 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*   **D**

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.

Proposed Response   *Response Status*   **W**

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

Cl **N**   *SC* **N.1**   *P*   *L*   # 6

STEPHENS, ADRIAN P   Individual

Comment Type   **E**   *Comment Status*   **D**

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"

Proposed Response   *Response Status*   **W**

PROPOSED 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*   **D**

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"

Proposed Response   *Response Status*   **W**

PROPOSED 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**
SC **N.2.1.1.4**

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