IEEE P802.11
Wireless LANs

802.11Rev-ma Conditional Approval Clause 21 Report

Date: 2006-0719

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Abstract

This document provides the material necessary to support a request for conditional approval to send 802.11REV-ma to REVCOM.

From the 802 LMSC Policies and Procedures, Clause 21:

Motions requesting conditional approval to forward where the prior ballot has closed shall be accompanied by:
• Date the ballot closed
• Vote tally including Approve, Disapprove, and Abstain votes
• Comments that support the remaining disapprove votes and Working Group responses.
• Schedule for confirmation ballot and resolution meeting.

From the myBallot site:

Ballot Open Date: 06/21/2006
Ballot Close Date: 07/11/2006

RESPONSE RATE
This ballot has met the 75% returned ballot requirement.

145 eligible people in this ballot group.

99	affirmative votes
10	negative votes with comments
1	negative votes without comments
8	abstention votes
118	votes received = 81% returned
	7% abstention

APPROVAL RATE
The 75% affirmation requirement is being met.

99	affirmative votes
10	negative votes with comments
109	votes = 91% affirmative

Schedule for confirmation ballot: to close by 15 September 2006 (third recirculation ballot) or 31 October 2006 (fourth recirculation ballot).

Schedule for resolution meeting: 18-22 September 2006

Outstanding disapprove balloter comment report

The table below shows the remaining disapprove balloters and a count of their comments. A blank cell indicates no response by the balloter for the ballot at the top of the column.

Name	Original Ballot	Recirc #1	Recirc #2
Keith Amman	1		
Parag Bhatt	0		
Clint Chaplin	5	9	5
Darwin Engwer	10	12	
David James	1		
Andrew Myles	9	11	5
Stephen Palm			14
Amjad Soomro		2	
Dorothy Stanley			38
Adrian Stephens	8	15	9
Harry Worstell	1		
Total	**35**	**49**	**71**

Comments from Initial Ballot

Cl **06** *SC* **6.2.1.1.1** *P* **49** *L* **1** # 2

JAMES, DAVID V Individual

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

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

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

SuggestedRemedy

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

Response *Response Status* **U**

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

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

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

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

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

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

COORDINATION, EDITORIAL

Response

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

STEPHENS, ADRIAN P Individual

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

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

SuggestedRemedy

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

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

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

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

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

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

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

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 **11** *SC* **11.1.3** *P* **308** *L* # 8
STEPHENS, ADRIAN P Individual

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

"A STA may start its own BSS without first scanning for a BSS to join".
One of the issues I have with the structure of the document is that it claims that the SME is outside the scope of the specification, and therefore doesn't have a section for the SME. However it also makes normative statements that only make sense as specification for an SME.
This statement is an example of that, hopefully I'll notice and report a few more. Because control of sequencing of scanning/joining/starting is under control of the SME, this statement should read: "The SME of a STA may start its own BSS..."

SuggestedRemedy

Add a section containing statements for the SME and move the amended statement there.

Response *Response Status* **U**

ACCEPT.

Delete the sentence.

Editor included in draft 5.2 in 11.1.3.

Cl **11** *SC* **11.1.3.2.1** *P* *L* # 10
STEPHENS, ADRIAN P Individual

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

"In each BSS there shall be at least one STA&"
This is an example of another class of generic error that is, unfortunately, far too common in this document - wrong use of "shall".
"Shall" introduces a normative requirement on the implementer. In this example, shall cannot introduce a normative requirement on the implementer because the BSS consists of multiple STA from multiple implementers.
It should be possible to trace most "shall" statements to PICS entries.

SuggestedRemedy

I recommend that the document be scanned and each occurance of "shall" (there are 2258 of them) be validated.
In this example, what it meant to say: "The procedures defined in this subclause ensure that in each BSS there is at least one STA&"

Response *Response Status* **U**

ACCEPT. The editor is to identify those uses of "shall" that are not normative and replace with descriptive language.

Editor included in draft 5.2 in 11.1.3.2.1.

Cl **11** *SC* **11.2.1.4** *P* *L* # 12
STEPHENS, ADRIAN P Individual

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

"An AP shall have an aging function to delete pending traffic when it is buffered for an excessive
time period."
I'm not sure this normative requirement is necessary. It is certainly not testable without defining what "excessive" means.

SuggestedRemedy

Recommend turning this into an informative note.
Alternatively define the ageing algorithm so that compliance can be tested.

Response *Response Status* **U**

ACCEPT.

"An AP can delete buffered frames for implementation dependent reasons, including the use of an aging function and availability of buffers."

Editor included in draft 5.2 in 11.2.1.5.

Cl **11** *SC* **11.2.1.9** *P* *L* # 14
STEPHENS, ADRIAN P Individual

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

"The AP shall have an aging function to delete buffered traffic when it has been buffered for an excessive
period of time. That function shall be based on the ListenInterval parameter of the MLMEASSOCIATE.
request primitive of the STA for which the traffic is buffered."
"... shall have a function..." " ... shall be based on ...".
Oh dear, oh dear, oh dear.

SuggestedRemedy

Either turn this into a recommendation, or provide enough specification that a compliant implementation can be constructed.

Response *Response Status* **U**

ACCEPT.

Delete the first two sentences of 11.2.1.9. Also, replace "The AP aging function" with "Any AP aging function" in the third sentence.

Editor included in draft 5.2 in 11.2.1.11.

Cl **11** *SC* **11.3.2** *P* *L* # 15

STEPHENS, ADRIAN P Individual

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

"The STA's SME shall delete any PTKSA&"
See also my earlier comment. We need to put this in a section containing normative requirements on the SME.

SuggestedRemedy

Add a section containing statements for the SME and move the statement there.
Recommend scanning for SME and doing likewith with any other similar statements.

Response *Response Status* **U**

REJECT.

By removing the indicated text, the commenter removes the needed cross-layer description that pulls together all the individual operations described elsewhere in the standard. This cross-layer description is essential to understanding the security functionality.

Cl **08** *SC* **8.5.1.2** *P* **156** *L* **2** # 16

STEPHENS, ADRIAN P Individual

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

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

SuggestedRemedy

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

Response *Response Status* **U**

ACCEPT.

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

Cl **00** *SC* *P* *L* # 19

WORSTELL, HARRY R Individual

Comment Type **TR** *Comment Status* **A** *11e*

This ballot does not contain the 802.11e ammendment and should include it. I vote NO.

SuggestedRemedy

Include 802.11e in the rollup

Response *Response Status* **U**

ACCEPT.

Editor included in draft 5.1 by adding 802.11e.

#

COORDINATION, SCC14

Response

Cl **11** *SC* **11.6.7.2** *P* *L* 65

MYLES, ANDREW F Individual

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

The DFS channel changing facilities for IBSS represent a very complex set protocols that have little value in the vast majority of cases and will not work in many circumstances. There is no know implementation of this feature.

SuggestedRemedy

Delete all text related to selecting a new channel in an IBSS

Response Status **U**

REJECT.

The commenter is requested to provide more information supporting the assertions that the protocol does not work in many circumstances and thus has little value.

The editor is to reverse the changes made in draft 5.2, as shown below.

Delete all of clause 3.38 (done in 3.47 of draft 5.2) (reversed in draft 6.0)

Delete "or IBSS" in clause 5.4.4.2 (done in 5.4.4.2) (reversed in 5.4.4.2 of draft 6.0)

Delete "IBSS DFS" row from Table 5 in 7.2.3.1 (Changed to reserved in Table 8) (reversed in Table 8 of draft 6.0)

U

Delete "IBSS DFS" row from Table 12 in 7.2.3.9 (Changed to reserved in Table 15) (reversed in Table 15 of draft 6.0)

Delete "IBSS DFS" row from Table 22 in 7.3.2 (Changed to reserved in Table 26) (Reversed in Table 26 of draft 6.0)

Delete "or a STA in an IBSS" in first paragraph in 7.3.2.20 (done in 7.3.2.20) (reversed in draft 6.0 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) (reversed in draft 6.0 7.3.2.20)

Delete all of clause 7.3.2.24 (done in 7.3.2.24) (Reversed in draft 6.0 in 7.3.2.24)

Delete "or a STA in an IBSS" from 7.4.1.5 (done in 7.4.1.5) (reversed in draft 6.0 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) (Reversed in draft 6.0 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) (reversed in draft 6.0 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) (reversed in draft 6.0 in 10.3.10.1.2.)

Delete "or IBSS" in seventh dash point in 11.6 (done in 11.10.) (reversed in draft 6.0 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) (Reversed in draft 6.0 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) (Reversed in draft 6.0 in 11.10.7.1)

Delete all of clause 11.6.7.2 (Removed 11.10.7.2) (Reversed in draft 6.0 in 11.10.7.2)

Delete SM17-19 in A.4.12 (Removed SM17-19 in A.4.12) (Reversed in draft 6.0 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) (Reversed in draft 6.0 in A.4.12).

Editor included in draft 5.2 in the locations described in the parentheticals above.

Editor reversed changes in draft 6.0 in the locations described in the parentheticals above.yyyyyyyyyyyyyyyyyyyyyyyyyyy

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Cl **11** *SC* **11.6.3** *P* *L* # 66

MYLES, ANDREW F Individual

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

The text references ETSI EN 301 893.
This reference is European focused and incorrect

SuggestedRemedy

Remove all references to ETSI EN 301 893

Response *Response Status* **U**

ACCEPT. There is no reference to ETSI EN 301 893 in the cited clause of the balloted draft. The text existed in earlier versions of the draft, but had already been removed.

No editorial action required.

Cl **11** *SC* **11.5.1** *P* *L* # 67

MYLES, ANDREW F Individual

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

The text defines association based on transmit power capability
However, no use has ever been demonstrated for this feature and few if any implmenentations provide it for any useful purpose

SuggestedRemedy

Delete all text related to association based on transmit power capability

Response *Response Status* **U**

REJECT. The commenter does not provide a compelling reason for deprecating this function. It is not proven that no use has ever been demonstrated for this feature. It is to soon to determine that no use will be found for this feature.

Cl **11** *SC* **11.5.3** *P* *L* # 68

MYLES, ANDREW F Individual

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

The text defines adaption of transmit power
However, no use has ever been demonstrated for this feature in relation to DFS and few, if any, implmenentations provide it for any useful purpose

SuggestedRemedy

Delete all text related to adaption of transmit power, and allow 11k and 11v to define new more appropriate features

Response *Response Status* **U**

REJECT. The commenter does not provide a compelling reason for deprecating this function. It is not proven that no use has ever been demonstrated for this feature. It is to soon to determine that no use will be found for this feature.

The commenter is urged to work with 802.11 task groups k and v to define new, more appropriate features and to delete this feature at that time.

Cl **11** *SC* **11.6.1** *P* *L* # 69

MYLES, ANDREW F Individual

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

The text defines association based on supported channels
However, no use has ever been demonstrated for this feature in relation to DFS and few if any implmenentations provide it for any useful purpose

SuggestedRemedy

Delete all test related to association based on supported channels

Response *Response Status* **U**

REJECT. The commenter does not provide a compelling reason for deprecating this function. It is not proven that no use has ever been demonstrated for this feature. It is to soon to determine that no use will be found for this feature.

Cl **11** *SC* **11.6.6** *P* *L* # 70

MYLES, ANDREW F Individual

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

The text defines a complex measurement request and response mechanism.
The mechanism is not required for DFS or TPC purposes. It is clearly not sufficient for the measurement purposes given that 11k is currently redefining it

SuggestedRemedy

Delete all text related to measurement request and response, and allow 11k to define more appropriate features

Response *Response Status* **U**

REJECT. The commenter is urged to work with 802.11 task group k to make this change in that amendment.

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

MYLES, ANDREW F Individual

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

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

SuggestedRemedy

Remove entire annex

Response *Response Status* **U**

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

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

MYLES, ANDREW F Individual

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

There is little obvious value in this annex

SuggestedRemedy

Remove entire annex

Response *Response Status* **U**

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

Cl **00** *SC* *P* *L* 83

KLEINDL, GUNTER Individual

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

With this revision the definition of 11a, 11b and 11g get lost.

SuggestedRemedy

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

Response Status **U**

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

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

MYLES, ANDREW F Individual

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

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

SuggestedRemedy

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

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

Response *Response Status* **U**

REJECT.

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

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

CHAPLIN, CLINT F Individual

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

Table H.7: Please also list the source and destination MAC addresses, so that an implementor could walk through the derivation of the the Phase 1 and Phase 2 outputs.

SuggestedRemedy

Add the following entries to the table:
Source MAC Address: 02 03 04 05 06 07
Destination MAC Address: 02 03 04 05 06 08

Response Status **U**

ACCEPT.

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

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

CHAPLIN, CLINT F Individual

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

This section describes a PHY that, I believe, was never commercially available, and will never be used in the future. It is no longer necessary to have this PHY in the standard. Mantaining this section is a waste of the IEEE's time. Essentially the same arguments that was used to withdraw IEEE 802.11F are to be used here.

SuggestedRemedy

Remove this section, or mark it as obsolete and not to be implemented.

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Insert the following as the first paragraph in the clause: "This clause is no longer maintained and may not be compatible with all features of the remainder of this standard."

Editor included in draft 5.2 in clause 16.

#

Cl **00** *SC* *P* *L* # 110

CHAPLIN, CLINT F Individual

Comment Type **TR** *Comment Status* **A** *11e*

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

SuggestedRemedy

Include IEEE 802.11e

Response *Response Status* **U**

ACCEPT.

Editor included in draft 5.1 by adding 802.11e.

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

CHAPLIN, CLINT F Individual

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

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

SuggestedRemedy

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

Response *Response Status* **U**

ACCEPT.

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

Add the definition of MSK as follows to clause 3.

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

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

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

Cl **N** *SC* **N.2.1.1.4** *P* **986** *L* 288

ENGWER, DARWIN A Individual

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

To more properly align with clause 3 definitions:

SuggestedRemedy

Change
"This primitive initiates distribution of the DSSDU through the DS. A directed DSSDU from"
to
"This primitive initiates distribution of the DSSDU through the DS. An individually addressed DSSDU from"

Response Status **U**

ACCEPT.

Editor included in draft 5.2 in O.2.1.1.4.

Cl **07** *SC* **7.2.1.4** *P* **62** *L* # 292

ENGWER, DARWIN A Individual

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

comment: RA is not shown in Figure 26

SuggestedRemedy

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

Response Status **U**

ACCEPT IN PRINCIPLE.

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

Editor included in draft 5.2 in 7.2.1.4 Figure 27.

Cl **J** *SC* **J-1** *P* **966** *L* **1** # 293

ECCLESINE, PETER Individual

Comment Type **TR** *Comment Status* **A** *4.9*

Japan allows 5 MHz channels in the 5.03 GHz-5.091 GHz band, and Annex J does not represent that

SuggestedRemedy

Editor to change draft according to 11-05-1121-00-000m-modifications-to-802-11ma-standard-regarding-4-9ghz-band.doc draft text to describe operation in Japan 4.9 GHz and 5GHz bands using 5 MHz channel spacing

Response *Response Status* **U**

ACCEPT. Use r1 of the document.

Editor included in draft 5.2.

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

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

TA is not shown in Figure 27.

SuggestedRemedy

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

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

See comment #296 for editorial resolution.

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

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

TA is not shown in Figure 28.

SuggestedRemedy

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

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

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

Editor included in draft 5.2 in 7.2.1.6 Figure 28.

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

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

TA is not shown in Figure 27.

SuggestedRemedy

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

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

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

Editor included in draft 5.2 in 7.2.1.5 Figure 28.

Cl **07** *SC* **7.2.3** *P* **64** *L* # 299
ENGWER, DARWIN A Individual

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

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

SuggestedRemedy

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

Response *Response Status* **U**

ACCEPT.

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

Editor included in draft 5.2 in 7.2.3 in Figure 36.

Cl **07** *SC* **7.1.3.1.4** *P* **56** *L* # 300

ENGWER, DARWIN A Individual

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

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

SuggestedRemedy

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

Response *Response Status* **U**

ACCEPT.

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

Editor included in draft 5.2 in 7.1.3.1.4 in Table 2.

Cl **07** *SC* **7.1.3.3.3** *P* **58** *L* # 301

ENGWER, DARWIN A Individual

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

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

SuggestedRemedy

Change "broadcast BSSID" to "wildcard BSSID".

Response *Response Status* **U**

ACCEPT.

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

Cl **07** *SC* **7.2.3** *P* **65** *L* # 302

ENGWER, DARWIN A Individual

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

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

SuggestedRemedy

Change "broadcast BSSID" to "wildcard BSSID".

Response *Response Status* **U**

ACCEPT.

Make the change in item c).

Editor included in draft 5.2 in 7.2.3.

Cl **10** *SC* **10.3.2.1.2** *P* **235** *L* # 303

ENGWER, DARWIN A Individual

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

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

SuggestedRemedy

Change "broadcast BSSID" to "wildcard BSSID".

Response *Response Status* **U**

ACCEPT.

Editor included in draft 5.2 in 10.3.2.1.2.

Cl **00** *SC* *P* *L* # 304

AMANN, KEITH Individual

Comment Type **TR** *Comment Status* **A** *11e*

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

SuggestedRemedy

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

Response *Response Status* **U**

ACCEPT.

Editor included in draft 5.1 by adding 802.11e.

Comments from First Recisrculation Ballot

Cl **11** *SC* **11.4** *P* **445** *L* **25** 67

CHAPLIN, CLINT F Individual

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

802.11-1999 had only a subclause 11.3 (Association and Reassociation); 11e and 11i both made simultaneous modifications to that area of the standard, and didn't coordinate their changes. 11i split it into 11.3 (Authentication and Deauthentication) and 11.4 (Association, Reassociation, and Disassociation), that is how it appears in 11ma D5.0. 11e added four new subclauses, numbered them 11.4 through 11.7, and instructed that the existing clauses 11.4 and higher be moved to to follow. As a result, the Association/Reassociation/Disassociation subclause created by 11i is placed far apart from its closely-related subclause on Authentication/Deauthentication.

SuggestedRemedy

Make the new clauses from 11e follow 11.4 (keeping 11.3 Authentication and 11.4 Association clauses adjacent). Number the 11e clauses 11.5, 11.6, 11.7, and 11.8.

Response Status **U**

ACCEPT.

Editor included in draft 7.0 by virtue of other comment resolutions.

Cl **00** *SC* **0** *P* *L* # 73

CHAPLIN, CLINT F Individual

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

11e made a big mistake by defining the notion of a QSTA being somehow different than a STA. A STA is a STA. Some STAs are capable of additional functions, and advertises those additional capabilities. This change unfortunately set a precedent for later amendments - 11r D1.0 defined a TSTA and TAP, and 11n D1.0 defined a HT-STA and HT-AP. Don't set the precedent for future amendments to do this again.

SuggestedRemedy

Change QSTA to STA throughout. Change QAP to AP throughout. Change QBSS to BSS throughout. Change QIBSS to IBSS throughout. Delete definitions 3.118, 3.119, 3.121, and 3.122. Delete acronyms QAP, QBSS, QIBSS, and QSTA.

Response *Response Status* **U**

REJECT.

The change suggested by the commenter is not a simple editorial substitution. Such a substitution would result in substantial ambiguity in the functional description of the requirements for compliant operation of an implementation.

Cl **03** *SC* **3.98** *P* **12** *L* **52** # 75

CHAPLIN, CLINT F Individual

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

(IEEE 802.11 TGr LB82 Comment 77) PMK is not derived from an EAP method. MSK is derived from an EAP method. Suggest change. (see next column).

SuggestedRemedy

"The PMK may be derived from a key generated by an Extensible Authentication Protocol (EAP) method."

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Insert "a key generated by" between "from" and "an Extensible".

Editor included in draft 7.0 in 3.96.

Cl **05** *SC* **5.6** *P* **44** *L* **50** # 76

CHAPLIN, CLINT F Individual

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

(IEEE 802.11 TGr LB82 Comment 376) This is a remnant. There should be no shalls in this section since there is no PICs for it.

SuggestedRemedy

change "shall" to must.

Response *Response Status* **U**

REJECT.

The normative statements are needed to complete the definition of the MAC. They are inappropriate in clause 5 and are moved to clause 11.

Move clause 5.6 to become clause 11.3. Move the current 11.3 in a level under the text moved from 5.6, becoming a new 11.3.1. Also move 11.8 (Association . . .) in a level and also under the new 11.3, as 11.3.2.

Editor included in draft 7.0 by moving 5.6, renumbering 11.3, and moving 11.8. References to 5.6, 11.3, and 11.8 were searched and updated.

Cl **07** *SC* **7.2.3.4** *P* **89** *L* **36** # 77

CHAPLIN, CLINT F Individual

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

(IEEE 802.11 TGr LB82 Comment 447, 448, 450) The third column in the table corresponding to "QoS Capability" lacks any text Seems that there is no descriptive text now There is no description for the QoS Capability information element

SuggestedRemedy

Add description text

Response *Response Status* **U**

ACCEPT.

Add "The QoS Capability element
is present when dot11Qos-OptionImplemented is true" in the Notes column for the QoS Capability information element.

Editor included in draft 7.0 in 7.2.3.4, Table 10.

Cl **07** *SC* **7.2.3.4** *P* **89** *L* **36** # 78

CHAPLIN, CLINT F Individual

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

(IEEE 802.11 TGr LB82 Comment 449) Definition of QOS Capablity IE in setcion 7.3.2.20 limits its use here.

SuggestedRemedy

Update the defination of QOS Capablity IE in section 7.3.2.20 to allow its use here.

Response *Response Status* **U**

REJECT.

7.3.2.20 does not describe the use of the QoS Capability IE.

Cl **07** *SC* **7.2.3.6** *P* **90** *L* **41** # 79

CHAPLIN, CLINT F Individual

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

(IEEE 802.11 TGr LB82 Comment 496, 497, 498) The third column in the table corresponding to "QoS Capability" lacks any text Seems that there is no descriptive text now There is no description for the QoS Capability information element

SuggestedRemedy

Add description text

Response *Response Status* **U**

ACCEPT.

Add "The QoS Capability element
is present when dot11Qos-OptionImplemented is true" in the Notes column for the QoS Capability information element.

Editor included in draft 7.0 in 7.2.3.6, Table 12.

Cl **07** *SC* **7.3.2.28** *P* **137** *L* **53** # 80

CHAPLIN, CLINT F Individual

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

(IEEE 802.11 TGr LB82 Comment 571) "specifies the remaining amount of medium time available via explicit admission control in units of 32 us/s." As specified, this implies that the value must be up to date. It is my understanding that some APs fail to update the medium time each time the QBSS Load information element is advertised, and so this definition would make these implementations non-compliant?

SuggestedRemedy

Reword to make it backward compatible with existing AP implementations that do not transmit an up-to-date value in this field.

Response *Response Status* **U**

REJECT.

Poor implementations do not necessitate changes to the standard.

Cl **08** *SC* **8.4.10** *P* **201** *L* **52** # 83

CHAPLIN, CLINT F Individual

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

(IEEE 802.11 TGr LB82 Comment 837) "&it will delete some security association." What does some mean?

SuggestedRemedy

Clarify which security associations it will delete.

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

The subject of the comment is outside the scope of this ballot. The comment will be forwarded to the working group for consideration in a future revision of the standard.

Cl **08** *SC* **8.4.10** *P* **201** *L* **54** # 84

CHAPLIN, CLINT F Individual

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

(IEEE 802.11 TGr LB82 Comment 838) "&it will delete some security association." What does some mean?

SuggestedRemedy

Clarify which security associations it will delete.

Response *Response Status* **U**

REJECT.

The subject of the comment is outside the scope of this ballot. The comment will be forwarded to the working group for consideration in a future revision of the standard.

Cl **11** *SC* **11.6.7.2** *P* *L* # 85

MYLES, ANDREW F Individual

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

The DFS channel changing facilities for IBSS represent a very complex set protocols that have little value in the vast majority of cases and will not work in many circumstances. There is no know implementation of this feature.

In a response to the same comment in the last ballot, TGma asked me to justify my assertions. I believe that they are justified by a quote from 11.10.7.2 that states, "The potential for hidden nodes within an IBSS means that the IBSS channel switch protocol is best effort. All members of an IBSS shall have an individual responsibility to cease transmission on a particular channel in the presence of radar."

This text effectivley says that the IBSS channel switch protocol cannot be relied upon and that individual STAs need to do radar dedection anyway. It is almost certain that regulators will have a similar view.

This removes the primary advantage cited in 06/220. The other advantages cited in 06/220 for the IBSS DFS protocol can be achieved without any special over the air protocol.

SuggestedRemedy

Delete all text related to selecting a new channel in an IBSS, as specified in comment in last Sponsor Ballot

Response *Response Status* **U**

REJECT.

The mechanism does not cause any harm, without regard to it usefulness. The mechanism is adequate to cause some STAs in an IBSS to change channels, though it may not be sufficient to cause all STAs to do so.

Cl **11** *SC* **11.5.1** *P* *L* # 86

MYLES, ANDREW F Individual

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

The text defines association based on transmit power capability

However, no use has ever been demonstrated for this feature and few if any implmenentations provide it for any useful purpose.

In the response to a similar comment in the last ballot it was rejected because I had not shown it would never be useful. I would turn the response around by asking TGma to show that the feature is or will be useful. Showing there is a current implemenation would be compelling. I would also like the TG to show the feature was actually within scope for TGh.

SuggestedRemedy

Delete all text related to association based on transmit power capability

Response *Response Status* **U**

REJECT.

Fails after motion to accept failed (3,3,1).

Leaving this in the standard does not harm and there may be implementations of which the commenter is unaware.

Cl **11** *SC* **11.5.3** *P* *L* # 87

MYLES, ANDREW F Individual

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

The text defines adaption of transmit power

However, no use has ever been demonstrated for this feature in relation to DFS and few, if any, implmenentations provide it for any useful purpose.

In the response to a similar comment in the last ballot it was rejected because I had not shown it would never be useful. I would turn the response around by asking TGma to show that the feature is or will be useful. Showing there is a current implemenation would be compelling.

It was also suggested that this feature was best deleted by 802.11v and 802.11k. This is certainly a possible course of action. However, these groups are more interested in developing useful new features rather than worrying about useless legacy features. It is TGma's responsibility to look after useless old features

SuggestedRemedy

Delete all text related to adaption of transmit power, and allow 11k and 11v to define new more appropriate features

Response *Response Status* **U**

REJECT.

Actually refers to 11.9.4.

While the commenter is not aware of any implementations of this feature, that is not proof that none exist. Work is under way in TGv to address this area in a regulation neutral fashion. Should that be incorporated into the standard, it is recommended that the regulation-specific text in 11.9 be removed.

Cl **11** *SC* **11.6.1** *P* *L* # 88

MYLES, ANDREW F Individual

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

The text defines association based on supported channels

However, no use has ever been demonstrated for this feature in relation to DFS and few if any implmenentations provide it for any useful purpose

In the response to a similar comment in the last ballot it was rejected because I had not shown it would never be useful. I would turn the response around by asking TGma to show that the feature is or will be useful. Showing there is a current implemenation would be compelling. I would also like the TG to show the feature was actually within scope for TGh.

SuggestedRemedy

Delete all test related to association based on supported channels

Response *Response Status* **U**

REJECT.

Actually refers to 11.10.1.

While the commenter is not aware of any implementations of this feature, that is not proof that none exist. Maintaining this text in the standard does not hurt, even if there are no implementations of it.

Cl **11** *SC* **11.6.6** *P* *L* # 89

MYLES, ANDREW F Individual

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

The text defines a complex measurement request and response mechanism.

The mechanism is not required for DFS or TPC purposes. It is clearly not sufficient for the measurement purposes given that 11k is currently redefining it.

In the response to a similar comment in the last ballot it was rejected because I had not shown it would never be useful. I would turn the response around by asking TGma to show that the feature is or will be useful. Showing there is a current implemenation would be compelling.

It was suggested in the response to a similar comment in the last ballot that this feature was best deleted by 802.11k. This is certainly a possible course of action. However, these groups are more interested in developing useful new features rather than worrying about useless legacy features. It is TGma's responsibility to look after useless old features

SuggestedRemedy

Delete all text related to measurement request and response, and allow 11k to define more appropriate features

Response *Response Status* **U**

ACCEPT.

Commenter is to provide specific editing instructions.

Cl **M** *SC* **M** *P* *L* # 90

MYLES, ANDREW F Individual

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

This annex allegedly provides an AP functional description

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

I disagree with the previous response to this comment in which it was asserted this annex is useful. Given this is new material to the standard, I believe a very strong reasons needs to be provided to include it.

SuggestedRemedy

Remove entire annex

Response *Response Status* **U**

REJECT.

The balloter is requested to read the actual draft being balloted. Annex M has nothing to do with AP functional descritpion. It is assumed the balloter means Annex N.

The consensus of the working group is that the material is useful. The burden of proving it not useful is on the commenter. A simple assertion that it is not useful is insufficient justification to remove the annex.

Cl **N** *SC* **N** *P* *L* # 91

MYLES, ANDREW F Individual

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

There is little obvious value in this annex

I disagree with the previous response to ths comment in which it was asserted this annex is useful. Given this is new material to the standard, I believe a very strong reasons needs to be provided to include it.

SuggestedRemedy

Remove entire annex

Response *Response Status* **U**

REJECT.

The consensus of the working group is that the material is useful. The burden of proving it not useful is on the commenter. A simple assertion that it is not useful is insufficient justification to remove the annex.

Cl **09** *SC* **9.2.4** *P* **256** *L* **50** # 92

MYLES, ANDREW F Individual

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

"The CW shall be reset to aCWmin after every successful attempt to transmit an MSDU or MMPDU,..." There are number of places where MSDU and MPDU are used interchangably. On page 276, line #1, it clearly states that a MPDU is a fragment of MSDU. Shouldn't the retry counters and CW be associated with individual MPDUs since each MPDU is ACKed individually?

SuggestedRemedy

Replace MSDU with MPDU in appropriate places.

Response *Response Status* **U**

ACCEPT.

Change "MSDU" to "MPDU" in line 50.

Editor included in draft 7.0 in 9.2.4.

Cl **09** *SC* **9.2.5.3** *P* **259** *L* # 93

MYLES, ANDREW F Individual

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

MSDU and MPDU are used interchangably in these two paragraphs

SuggestedRemedy

Replace MSDU with MPDU in appropriate places.

Response *Response Status* **U**

REJECT.

This comment is beyond the scope of the present ballot. The comment will be forwarded to the working group for consideration in a future revision of the standard.

Cl **07** *SC* **7.3.2.30** *P* **140** *L* # 94

MYLES, ANDREW F Individual

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

TSID is identified in Figure 101, but references clause 7.1.3.5.1 which defines the TID, not the TSID

SuggestedRemedy

Rename one of the fields to eliminate the confusion

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Replace the sentence "The TSID subfield is 4 bits in length and contains the TSID values in the format defined in 7.1.3.5.1." below figure 101 with:
"The TSID subfield is 4 bits in length and contains a value that is a TSID."

Editor included in draft 7.0 in 7.3.2.30.

Cl **O** *SC* **O.2.2** *P* **1165** *L* # 95

ENGWER, DARWIN A Individual

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

With the withdrawal of 802.11F there are now a few aspects of 802.11 that are not described, specified or defined anywhere. While that is in general very unfortunate, there exist today other methods for accomplishing many of the mechanisms described in 802.11F that do not involve using the 802.11F protocol. However, the use of a specially addressed layer 2 frame (e.g. a null XID frame) by an AP to update the DS (e.g. and any infrastructure switches and routers) of the current association status of a mobile STA remains a valid and useful mechanism and method that is now lost.

SuggestedRemedy

Add an informative note in clause N.2.2 (now O.2.2) that cites the use of a null L2 XID packet as one method of accomplishing a DS-STA-NOTIFY update sequence in a real network/ WLAN system. Also include a reference to 802.11F clauses 4.5.1, 4.9.3, 5.1.1, 5.5.1, 5.5.2, 5.8, and 6.3, and (subsequently) add an 802.11F reference to Annex E. Alternatively we could copy from 802.11F directly into 802.11ma (in the appropriate places) the lines of text that describe the XID frame. Then the 802.11F reference and reference citation would not be needed.

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Add the following sentence to the end of O.2.2.1.4:
"There are many mechanisms to implement this mapping update for the cases of ADD and MOVE. One example mechanism, in the case where the DS is an 802 LAN, is to use an 802.2 XID null frame."

Editor included in draft 7.0 in O.2.2.1.4.

Cl **09** *SC* **9.9.3.1.2** *P* **296** *L* **7** # 96

SOOMRO, AMJAD A Individual

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

The surplus bandwidth allowance (SBA) field is loosely defined and it is clearly not needed to generate conforming schedules in any scenario. The mandatory parameters are minimum set of parameters required to generate a conforming schedule which meets TSPEC requirements. Any other parameter beyond this should be optional and be not made mandatory. The SBA is poorly defined and its use in wirless protocols to specify stream requirements is unique for this draft. The parameter is susceptible to loose interpretations at both the ends (QAP and QSTA) and, therefore, there is no basis for its inclusion. This parameter is superfluous in TSPEC.

SuggestedRemedy

Remove the requirement to make Surplus bandwidth allowance mandatory

Response *Response Status* **U**

REJECT.

While the use of the SBA may not be required to implement a conformant scheduler, the information may be useful to some implementers.

Cl **07** *SC* **7.3.2.30** *P* **139** *L* # 97

SOOMRO, AMJAD A Individual

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

Applications such as video or voice are quite tolerant to frame loss conditions and while medical wireless applications are very loss sensitive, though their TSPEC would appear to be similar to voice TSPEC. In order to serve these diverse streams QAP needs to know drop sensitivity of the stream to adjust its scheduling. In order to ensure interoperability and better expression of traffic stream requirements, acceptable frame loss rate for the traffic stream needs to be communicated between HC and a QSTA.

SuggestedRemedy

Add the acceptable error frame loss parameter in TSPEC field

Response *Response Status* **U**

REJECT.

Addition of this field to the information element would make any existing implementations instantly noncompliant. This is not a desirable outcome. It is also not clear how a scheduling algorithm would operate differently, given the requested additional frame error loss tolerance information.

Cl **06** *SC* **6.2.1.3** *P* **62** *L* **5** # 98

ENGWER, DARWIN A Individual

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

Further to comment #141 on the previous ballot, it is not clear why this primitive exists in its current form. If generation of MA-UNITDATA-STATUS.indication relates to a MA-UNITDATA.request then it should be a .confirm primitive.

Note that the mapping between corresponding .request and .confirm primitives can be asynchronous. That is there is a one-to-one mapping between .request and .confirm primitives, but they are not necessarily synchronous (e.g. an API implemented to be comformant with the SAP specification may employ delayed call back functions).

SuggestedRemedy

Change MA-UNITDATA-STATUS.indication primitive to MA-UNITDATA.confirm.

Response *Response Status* **U**

ACCEPT.

Editor to change all occurrences in the draft.

Editor included in draft 7.0 in 6.2.1, 6.2.1.1.4, 6.2.1.3, 6.2.1.3.2, 6.2.1.3.3, 8.2.1.3, 8.7.1, 8.7.2, 8.7.2.1.

Cl **O** *SC* **O.2.2** *P* **1165** *L* **32** # 99

ENGWER, DARWIN A Individual

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

With the withdrawal of 802.11F there are now a few aspects of 802.11 that are not described, specified or defined anywhere. While that is in general very unfortunate, there exist today other methods for accomplishing many of the mechanisms described in 802.11F that do not involve using the 802.11F protocol. However, the use of a specially addressed layer 2 frame (e.g. a null XID frame) by an AP to update the DS (e.g. and any infrastructure switches and routers) of the current association status of a mobile STA remains a valid and useful mechanism and method that is now lost.

SuggestedRemedy

Add an informative note in clause N.2.2 (now O.2.2) that cites the use of a null L2 XID packet as one method of accomplishing a DS-STA-NOTIFY update sequence in a real network/ WLAN system. Also include a reference to 802.11F clauses 4.5.1, 4.9.3, 5.1.1, 5.5.1, 5.5.2, 5.8, and 6.3, and (subsequently) add an 802.11F reference to Annex E. Alternatively we could copy from 802.11F directly into 802.11ma (in the appropriate places) the lines of text that describe the XID frame. Then the 802.11F reference and reference citation would not be needed.

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

See resolution to comment #95 (duplicate).

Cl **11** *SC* **11.2** *P* **432** *L* **25** # 100

ENGWER, DARWIN A Individual

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

Revisit comment #13 from the previous ballot to ensure that after merging in the 802.11e material there is a requirement to send new MSDUs *after* queued MSDUs.

SuggestedRemedy

Add the appropriate shall statement to the appropriate subclause of 11.2 if it is not already there.

Response *Response Status* **U**

REJECT.

It is believed that the appropriate direction to the implementer is present in 6.1.3 and that no additional requirements are necessary.

Cl **03** *SC* **3.15** *P* **7** *L* **13** # 101

ENGWER, DARWIN A Individual

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

The basic service set basic rate set text should not be deleted!! it is referenced again as soon as later in clause 3 and at other places in the standard as well.

SuggestedRemedy

Restore the deleted text and fix the definition at the same time.

Response *Response Status* **U**

REJECT.

Continue the replacement of "BSS basic rate set" with "contained in the BSSBasicRateSet parameter" for all remaing occurrences of BSS basic rate set.

Delete the definition of "extended rate set" and
modfy 11.1.4 by changing "Rate Set and Extended Rate Set" at the end of the last sentence to be "Supported Rates information element and Extended Supported Rates information element".

Delete the definition of "station basic rate" as those words occur only in the definitions.

The editor search draft 6.0 for BSS Basic Rate Set and basic service set basic rate set and base service set (BSS) basic rate set. None occur except in 3.53 (extended rate set) and 3.138 (station basic rate) which are to be deleted by this same action. No action on this part.

A less precise phrase, "basic rate set," was found in the document in 9.6 (twice), A.4.4, and Annex C. The editor included changes in draft 7.0 in 9.6 (twice) and A.4.4 to use the more precise wording "contained in the BSSBasicRateSet parameter".

The editor included in draft 7.0 in 11.1.4 to avoid extended rate set.

The editor deleted definitions in draft 7.0 from 3.53 (extended rate set) and 3.138 (station basic rate).

Cl **03** *SC* **3.59** *P* **10** *L* **10** # 102

ENGWER, DARWIN A Individual

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

Fragmentation is defined within 802.11, but here in clause the 3 the term should be related back to the appropriate guiding term in the normative reference document ISO 7498-1.

SuggestedRemedy

Change "partitioning" to "segmenting" (and potentially cite the reference to ISO 7498-1 clause 5.8.1.9).

Response *Response Status* **U**

ACCEPT.

Editor to change "partitioning" to "segmenting" and add an appropriate reference to ISO 7498-1.

Editor included in draft 7.0 in 3.57.

Cl **00** *SC* *P* *L* # 103

ENGWER, DARWIN A Individual

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

the introduction of hte 802.11e material introduced several inconsistencies in the draft standard

SuggestedRemedy

resolve the inconsistencies

Response *Response Status* **U**

ACCEPT.

The editor is instructed to comb the document for the term "amendment" and correct it wherever it is found. The editor is also instructed to replace the word "roam" with "transition" wherever it is found.

The Balloter is warned that the suggested remedy is required to provide sufficient detail to allow the ballot resolution committee to determine what is necessary to cause the balloter to change their vote from "no" to "yes". Failure to do so may cause the comment to be considered invalid.

Editor included in draft 7.0 by searching for amendment. Replaced with either revision or standard, as appropirate.

Cl **08** *SC* **8.5.5** *P* **271** *L* **25** # 104

STEPHENS, ADRIAN P Individual

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

(From Suman Sharma) STAKey handshake defined as part of standard is incomplete. Two flaws a) Security flaw & b) Definition flaw in this handshake has been identified as part of document 11-05-1058-00-000w-stakey-design-flaws.ppt. Note, although the referenced section is not changed in this this revision, the problem arises due to the introduction of the DLS feature which is new in this revision.

SuggestedRemedy

Document 11-05-1258-01-000m-normative-text-peerkey-handshake-proposal.doc provides fix to the STAKey flaws. Please use the normative text to fix the STAKey flaws.

Response *Response Status* **U**

ACCEPT.

Delete 3.136, 3.137, and 3.138, instead of 3.100, 101, and 102 as described in 05/1258r1.

Modify 3.130 as described in 05/1258r1, instead of 3.97.

Adopt 05/1258r1 for the remainder of the changes described there.

See commend #32 for editorial resolution.

Cl **06** *SC* **6.1.1.2** *P* *L* # 112

STEPHENS, ADRIAN P Individual

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

It is not clear what is new or changed in this subclause. The gutter marking indicates that it is all changed. However there are strikeouts and underlines within the section, which do not correspond to the gutter marking.

SuggestedRemedy

Please show changes from previous version with underlining or strikeout consistently, or define an unambiguous convention through editorial notes.

Response *Response Status* **U**

REJECT.

This was explained in an editor note in draft 6.0.

Cl **07** *SC* **7.3.2** *P* *L* # 116
STEPHENS, ADRIAN P Individual

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

Table 26 contains a TBD

SuggestedRemedy

Get a number from the ANA and insert it here.

Response *Response Status* **U**

ACCEPT.

Editor to replace "TBD" with "127" for the element ID of the Extended Capabilities IE and place it in the correct order in the table.

Editor included in draft 7.0 in 7.3.2 (Table 26) and 7.3.2.27.

Cl **08** *SC* **8.3.2.3.1** *P* *L* # 120
STEPHENS, ADRIAN P Individual

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

The deletion of "The priority ... Use." leaves the priority field undefined.

SuggestedRemedy

Specify the field.

Response *Response Status* **U**

ACCEPT.

The field is defined as the "MSDU priority" in 8.3.2.1 a). Editor to add the following in place of the deleted sentence:
"The Priority field refers to the priority parameter of the MA-UNITDATA.request service primitive."

Editor included in draft 7.0 in 8.3.2.3.1.

Cl **11** *SC* **11.2.1.5** *P* *L* # 128
STEPHENS, ADRIAN P Individual

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

I challenge anybody to read bullet h) and understand it. My training as a writer says that paragraphs of a 400 words may be a teensy-weensy bit on the long side.

SuggestedRemedy

Restructure using a second level of list indentation to separate out the major topics of bullet h), g) and possibly d).

Response *Response Status* **U**

REJECT.

Commenter does not provide sufficient information to determine what he would accept.

Cl **11** *SC* **11.2.2** *P* **440** *L* **52** # 129
STEPHENS, ADRIAN P Individual

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

I think the prohibition against BA and power-saving in a QIBSS is unnecessary. Power-saving introduces one new problem - that delivery of frames is delayed by a non-deterministic amount of time related to the beacon interval (perhaps several beacon intervals). There is the also the issue of whether our knowledge of the power-saving state of a peer is accurate.

The variable delay only creates an issue for block ack if the block ack timeout is too short. But setting this timeout is a matter of local policy, and we don't prevent an implementation doing something intelligent based on its knowledge of the power-saving state of a peer.

Having an inaccurate knowledge of the peer's power-saving state is no different for BA. A BA sequence will start with an exchange of frames intended to discover if contention has been won (i.e. RTS/CTS), this will also discover if the peer is asleep when we thought it was awake.

SuggestedRemedy

Remove the para starting on line 52: "In a QIBSS&".

Response *Response Status* **U**

ACCEPT.

Editor included in draft 7.0 in 11.2.2.

Cl **D** *SC* **0** *P* *L* # 141

STEPHENS, ADRIAN P Individual

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

There is nothing in the MIB to support 5MHz operation, but there is for 10MHz. So we must be missing some changes.

SuggestedRemedy

Add 5MHz support similar to 10MHz support in the MIB.

Response *Response Status* **U**

ACCEPT.

Editor to incorporate the text from 06/736r0.

Editor included in draft 7.0 in Annex D.

Cl **11** *SC* **11.7** *P* **456** *L* **52** # 142

STEPHENS, ADRIAN P Individual

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

(Submitted on behalf of Shlomo Ovadia) The DLS operation does not define if the DLS frames are unidirectional or bi-directional; potential implementation problem

SuggestedRemedy

Revise line 52 "However, STAs with QoS facility (i.e., QSTAs) may transmit unidirectional frames directly to another QSTA.."

Response *Response Status* **U**

REJECT.

See the resolution to comment #106.

Cl **11** *SC* **11.7** *P* **457** *L* **24** # 143

STEPHENS, ADRIAN P Individual

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

(Submitted on behalf of Shlomo Ovadia) The DLS operation does not define if data frames transmitted as part of a DLS link is unidirectional or bi-directional

SuggestedRemedy

Revise line 24 "A STA, QSTA-1, that intends to exchange unidirectional frames directly with another non-AP STA,&"

Response *Response Status* **U**

REJECT.

See the resolution to comment #106.

Cl **11** *SC* **11.7.3.1** *P* **459** *L* **42** # 144

STEPHENS, ADRIAN P Individual

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

(Submitted on behalf of Shlomo Ovadia) The DLS Teardown procedure at QSTA does not define DLS teardown if QSTA is out of the QAP range

SuggestedRemedy

Presentation IEEE 802.11-06/0242r1 presents a fix to this problem Submission IEEE 802.11-06/0598r0 contains normative text consistent with this presentation.

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Adopt the changes in 06/598r0 with the following exception:

Delete: "in some implementation-defined way..." from the text inserted in 11.7.3.3.

Editor included in draft 7.0 in 11.7.3, 11.7.3.1, and 11.7.3.3.

Cl **11** *SC* **11.7.3.2** *P* **460** *L* **37** # 145

STEPHENS, ADRIAN P Individual

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

(Submitted on behalf of Shlomo Ovadia) QAP-initiated DLS teardown procedure is not defined; this is needed when if QAP loses its DLS session state or QSTA left BSS without disassociation

SuggestedRemedy

Presentation IEEE 802.11-06/0242r1 presents a fix to this problem Submission IEEE 802.11-06/0598r0 contains normative text consistent with this presentation.

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

See resolution to comment #144.

Cl **07** *SC* **7.3.1.11** *P* **103** *L* # 147

STEPHENS, ADRIAN P Individual

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

(Comment on behalf of Emily Qi)

Table 24 does not define a vendor-specific action catory. It is reasonable for vendors to define vendor-specific signalling, but at the moment, this is only present appended to existing management action frames - each of which has a normative effect. What is necessary is a vendor-specific frame that has no defined normative effect. This can be achieved by defining a vendor-specific management action category, with some standardised syntax relating to OUI within the frame.

SuggestedRemedy

Add "Vendor Specific" in Table 24 and assign it a code, or ask the ANA to assign a code as appropriate. It is suggested that the OUI follow immediately after the category field within the action field, the remainder of the field being vendor-defined. Add new subclause to 7.4 defining vendor-specific management action details. (Emily Qi volunteers to provide normative text consistent with this recommended change if so approved).

Response *Response Status* **U**

ACCEPT.

Apply the changes cited in document 6/773r0.

Editor included in draft 7.0 in 7.4 and new section 7.4.5.

Cl **08** *SC* **8.5.5** *P* **271** *L* **25** # 149

STEPHENS, ADRIAN P Individual

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

For DLS to use peerkey handshake for creating a secure DLS link, it is necessary to create additional operational rules regarding the establishment of unidirectional DLS links in both directions between peers.

SuggestedRemedy

The rules for establishment of these links, and the conditions under which they are necessary need to be studied. It is hoped to bring a proposal containing normative text in due course.

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

See the resolution to comment #106.

Cl **11** *SC* **11.7.3** *P* **460** *L* **460** # 150

STEPHENS, ADRIAN P Individual

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

(For Shlomo Ovadia) Figure 205 applies only to STA-initiated DLS Teardown procedure

SuggestedRemedy

Modify figure 205 caption to "QSTA-initiated DLS teardown message flow"

Response *Response Status* **U**

ACCEPT.

Editor included in draft 7.0 in 11.7.3, Figure 212.

Cl **11** *SC* **11.10.7.2** *P* **471** *L* **37** # 151

STEPHENS, ADRIAN P Individual

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

(Submitted on behalf of Marc Jalfon)

This comment relates to comment 65 by Andrew Myles in document IEEE 802.11-06/0095r4 that was rejected by the comment resolution committee. This commenter agrees with Mr Myles comments, and disagrees with their dismissal by the comment resolution committee.

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.

Moreover, given that european regulatory agencies have relaxed their dfs requirements for IBSS, DFS in IBSS is not needed anymore to fulfill the PAR.

SuggestedRemedy

Delete all text related to selecting a new channel in an IBSS (i.e. the referenced subclause and any references to it). The precise set of changes have been documented in the response to comment 65 in the referenced document.

Response *Response Status* **U**

REJECT. See resolution to comment #85.

Cl **07** *SC* **7.1.3.1.3** *P* **69** *L* **6** # 152

ENGWER, DARWIN A Individual

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

After the 802.11e merge the text for the To DS and From DS clauses is more confusing than ever. The text in Table 2 is now also incorrect.

SuggestedRemedy

Replace the To DS and From DS bit designations and definitions with a two bit field, the meaning of which is defined by Table 2.

Delete all the existing text in clauses 7.1.3.1.3 and 7.1.3.1.4 except the sentence that reads "The permitted bit combinations and their meanings are given in Table 2."

Correct the descriptions in Table 2 as follows:

To/From:

00: Data frame direct from one STA to another STA within the same IBSS, or a data frame direct from one non-AP QSTA to another non-AP QSTA within the same QBSS, as well as all management and control frames.

10: Data frame destined for the DS or being sent by a STA associated with an AP to the Port Access Entity in that AP.

01: Data frame exiting the DS or being sent by the Port Access Entity in an AP.

11: Data frame using the four-address wireless distribution system (WDS) format. This standard does not define procedures for using this combination of field values.

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Delete clause 7.1.3.1.4 and all the text in 7.1.3.1.3. Retitle 7.1.3.1.3 as "ToDS and FromDS fields".

As the only sentence in this subclause, insert "The meaning of the combinations of values for the ToDS and FromDS fields are shown in Table 2."

Insert the table as described in the suggested remedy.

Editor included in draft 7.0 in 7.1.3.1.4, including modifying Table 2 entires for To/From 10 and 01.

Cl **07** *SC* **7.2.2** *P* **84** *L* **84** # 153

ENGWER, DARWIN A Individual

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

The information in the description column is wrong.

SuggestedRemedy

Remove the description column. This incorrect info was added by the 802.11e merge and is an incorrect restatement of the material in Table 2 (clause 7.1.3.1.3).

Response *Response Status* **U**

ACCEPT.

Editor included in draft 7.0 in 7.2.2, Table 7.

Cl **09** *SC* **9.4** *P* **275** *L* **46** # 154

ENGWER, DARWIN A Individual

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

The term "directed" is deprecated.

SuggestedRemedy

change "directed" to "individually addressed"

Response *Response Status* **U**

ACCEPT.

Editor included in draft 7.0 in 9.1.5, 9.2, 9.2.6, 9.2.7, 9.2.8, 9.3.2.1, 9.3.3.1, 9.3.3.2, 9.3.3.4, 9.4, 9.5.

Cl **10** *SC* **10.3.6.4** *P* **335** *L* **18** # 155

ENGWER, DARWIN A Individual

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

MLME-ASSOCIATE.response is missing the EDCAParameterSet parameter, which somehow(???) shows up in the corresponding .confirm. Is this information relayed from the AP, or just being echoed locally from the START.request primitive?

SuggestedRemedy

add the missing parameter

Response *Response Status* **U**

ACCEPT.

Copy the text from 10.3.6.2.2 for the EDCAParameterSet parameter.

Editor included in draft 7.0 in 10.3.6.4.

Cl **10** *SC* **10.3.7.4** *P* **342** *L* **18** # 156

ENGWER, DARWIN A Individual

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

MLME-REASSOCIATE.response is missing the EDCAParameterSet parameter, which somehow(???) shows up in the corresponding .confirm. Is this information relayed from the AP, or just being echoed locally from the START.request primitive?

SuggestedRemedy

add the missing parameter

Response *Response Status* **U**

ACCEPT.

Copy the text from 10.3.7.2.2 for the EDCAParameterSet parameter.

Editor included in draft 7.0 in 10.3.7.4.

Comments from Second Recirculation ballot

Cl **00** *SC* **0** *P* *L* # 1

MYLES, ANDREW F Individual

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

In previous ballots, I requested the removal of: * Tx Power Capability functionality (see 11.5.1) * Adaption of Tx Power functionality (see 11.5.3) * Supported Channels functionality (see 11.6.1) I made this request on the basis that: * The functions are not required by spectrum management regulations, which is why they were originally included in the 802.11h * There was no known use of the functions for other useful purposes. The requests were rejected on the basis: * Leaving them in the standard does no harm * There may be implementations of which I am unaware. I accept that there are implementations of this functionality of which I am unaware. However, I claim there is harm in leaving unnecessary and useless functionality in the standard in the long term because it will bloat the standard making it harder to understand and maintain. It may also confuse equipment vendors into thinking they need to implement the functionality.

SuggestedRemedy

A reasonable compromise is to add a statement at the appropriate places in the draft stating something like, " The following functionality, including associated IE's and frames, may be removed during the next maintenance cycle unless it can be shown the functionality has some use."

Proposed Response *Response Status* **W**

PROPOSED REJECT.

It is inapprporiate for a statement of future intention, as that suggested by the commenter, to be included in the standard.

Cl **00** *SC* **0** *P* *L* # 2

MYLES, ANDREW F Individual

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

In previous ballots, I requested the removal of Measurement Request and Report functionality (see 11.6.6) I made this request on the basis that: * The function is not required by spectrum management regulations, which is why it was originally included in the 802.11h * There was no known use of the function in its current form for other useful purposes. * A syntactically and semantically different version is being developed by 802.11 TGk The request was accepted and the commenter was directed to provide a set of instructions for the editor. The scope of the changes, and the difficulty the might cause 802.11 TGk, subsequently caused the commenter to suggest that: * the removal of the functionality be delayed until 802.11TGk complete their work * in the meantime, implementors should be discouraged from implementing the functionality by the inclusion of a note at the appropriate place stating that the functionality, including associated IE's and frames, would be removed in a furture maintence cycle (or possibly by 802.11 TGk) Unfortunately, it was too late for the suggestion to be considered by 802.11 TGma.

SuggestedRemedy

Implement the suggestion in the comment to flag the future removal of this functionality

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

It is recognized that there is functionality in 802.11 that could be considered obsolete. The comment will be forwarded to the 802.11 Working Group for consideration in a future revision of the standard.

Cl **00** *SC* **0** *P* *L* # 3

MYLES, ANDREW F Individual

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

In a previous ballots, I requested the removal of Annex N because I believed it had no value This request was rejected with, "The consensus of the working group is that the material is useful. The burden of proving it not useful is on the commenter. A simple assertion that it is not useful is insufficient justification to remove the annex." This response is unreasonable because it is impossible to prove no value. Given this is new material, I strongly believe that it is incumbent on the authors to describe what value is provided. What I can say is that it attempts to describe the functions of an AP using a abstract form, new terminology (eg mobile STAs) and a new language (eg based on UML). The majority of the annex is used to describe the new terminology and language.

SuggestedRemedy

Remove Annex N

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The consensus of the working group is that the material in Annex N is useful. Inclusion of Annex N was approved unanimously in March 2005 (document 05/205r0, motion #7). This text was developed in response to requests from 802.11 members and external SDOs for additional description of AP functionality. Annex N describes the functions of an AP using a UML-based syntax to clarify AP function versus common implementations of AP devices. The burden of proving that Annex N is not useful is on the commenter.

Cl **00** *SC* **0** *P* *L* # 4

MYLES, ANDREW F Individual

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

It appears the reference in N.6 to Annex L should actually be to Annex M

SuggestedRemedy

Fix

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Editor to correct the reference in N.6 to refer to Annex M.

Cl **00** *SC* **0** *P* *L* # 5

MYLES, ANDREW F Individual

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

In previous ballots, I requested the removal of IBSS DFS functionality on the following basis "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. In a response to the same comment in the last ballot, TGma asked me to justify my assertions. I believe that they are justified by a quote from 11.10.7.2 that states, "The potential for hidden nodes within an IBSS means that the IBSS channel switch protocol is best effort. All members of an IBSS shall have an individual responsibility to cease transmission on a particular channel in the presence of radar." This text effectivley says that the IBSS channel switch protocol cannot be relied upon and that individual STAs need to do radar dedection anyway. It is almost certain that regulators will have a similar view. This removes the primary advantage cited in 06/220. The other advantages cited in 06/220 for the IBSS DFS protocol can be achieved without any special over the air protocol." This comment was rejected with the following response: "The mechanism does not cause any harm, without regard to it usefulness. The mechanism is adequate to cause some STAs in an IBSS to change channels, though it may not be sufficient to cause all STAs to do so." I object to the rejection because: * The response admits the mechanism does not achieve its goals and yet there is no recommendation to remove the functionality * It is not true that no harm is caused because it bloats the standard with useless and deceptive material; something we need to avoid in fulfilling our responsibilities as standards developers.

SuggestedRemedy

I would prefer that this functionality was removed using the editing instructions previously provided. However, a reasonable compromise is to add a statement at the appropriate places in the draft stating something like, " The following functionality, including associated IE's and frames, may be removed during the next maintenance cycle unless it can be shown the functionality has some use."

Proposed Response *Response Status* **W**

PROPOSED REJECT.

It is recognized that there is functionality in 802.11 that could be considered obsolete. The comment will be forwarded to the 802.11 Working Group for consideration in a future revision of the standard.

Cl **09** *SC* **9.6** *P* **287** *L* **54** # 18

STEPHENS, ADRIAN P Individual

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

(On behalf of Solomon Trainin) To be complete with the rule "The BlockAck control frame shall be sent at the same rate as the BlockAckReq frame" the spec has to say that the BlockAckReq shall be sent at the rate that both STA can receive and transmit. Only rates from BSSBasicRate set parameter are appropriate. This needs to be specified.

SuggestedRemedy

The resolution is to transmit both BAR and BA at the basic rate still following the rule of same rate. The following edits (in 9.6) achieve this: 1. Insert at the end of "When the control frame is a BlockAckReq or BlockAck frame" the following: " of a delayed Block Ack agreement". 2. Insert after "All other data, BlockAckReq, and BlockAck frames" the following "of a delayed Block Ack agreement" 3. Insert after "... the rate chosen to transmit ... ACK frame is intended." the following: "A STA requesting an immediate BlockAck response shall transmit the BlockAckReq frame at the highest rate in the BSSBasicRateSet parameter that is less than or equal to the rate of the previous Data frame sent to the same destination and that is of the same modulation class. If no rate in the basic rate set contained in the BSSBasicRateSet parameter meets these conditions then the BlockAckReq frame shall be sent at the highest mandatory rate of the PHY that is less than or equal to the rate of the previous Data frame sent to the same destination and that is of the same modulation class."

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The current rule already requires that the transmission of the BAR be sent at a rate that can be received by the destination station. Ther eis no need to clarify that rule. The remainder of the suggested remedy is beyond the scope of the current recirculation ballot. The comment will be forwareded to the working group for consideration in a future revision of the standard.

Cl **08** *SC* **8.3.2.4** *P* **176** *L* **13** # 19

STEPHENS, ADRIAN P Individual

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

"Some TKIP countermeasures are applicable for secure DLS data frame exchange as well." Either some was intended, in which case the applicable cases should be listed, or (as is thought to be the case) it was intended to be "the same".

SuggestedRemedy

At the start of this sentence, replace "Some" with "The same".

Proposed Response *Response Status* **W**

PROPOSED REJECT.

See the resolution to comment #54. There is no need to make a special case for DLS. It is already encompassed by the current countermeasures text.

Cl **00** *SC* **0** *P* *L* # 20

STEPHENS, ADRIAN P Individual

Comment Type **ER** *Comment Status* **X**

The IEEE-SA style guide does not allow hanging subclauses. There are many occurances of this (5.9, 5.9.2, 5.9.3, 6.1.1, 6.1.1.1, 7, 7.1, 7.2.1, 7.4, 7.4.1, 8.1&)

SuggestedRemedy

Beseech the editor to insert new subclauses to contain introductory material, or material common to subsequent subclauses.

Proposed Response *Response Status* **O**

Cl **09** *SC* **9.12** *P* **323** *L* **28** # 22

STEPHENS, ADRIAN P Individual

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

My comment in an earlier ballot was not adquately addressed. I proposed replacement of existing tables and figures with a new syntax. The alternative resolution adopted leaves the figures in place. The reason for my original change still stands - the figures are not maintainable. For example, TGn would have no option but to add a disclaimer to the tables (similar to the SDL in Annex C) "this does not apply to the HT feature". I've asked around and nobody really cares about this subclause anyway.

SuggestedRemedy

Remove the text and figures from 323 line 28 until the end of the subclause. Alternatively remove the whole subclause.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

The editor is to remove the figures and text from page 323, line 28 through the end of the subclause.

Cl **03** *SC* **3.36** *P* **8** *L* **21** # 24
STEPHENS, ADRIAN P Individual

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

(On behalf of Shlomo Ovadia) The definition of direct link is inconsistent with DLS handshake in Clause 11.7

SuggestedRemedy

Proposed text "Direct Link: A bidirectional link from one non-access point (non-AP) quality of service (QoS) station (QSTA) to another non-AP QSTA operating in the same infrastructure QoS basic service set (QBSS) that does not pass through a QoS access point (QAP). Once a direct link has been set up, all data frames between the two non-AP QSTAs are exchanged directly."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Change "unidirectional" to "bidirectional" in 3.36.

Cl **11** *SC* **11.7** *P* **481** *L* **24** # 27
STEPHENS, ADRIAN P Individual

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

(On behalf of Shlomo Ovadia) Not clear what "intends to exchange frames" means

SuggestedRemedy

Proposed text "A STA, QSTA-1, that initiates a direct link with another non-AP STA, sends a DLS request frame to the QAP (step 1a in Figure 210)."

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The comment is outside the scope of the current recirculation ballot. There were no changes that affect the cited text. The comment will be forwarded to the working group for consideration in a future revision of the standard.

Cl **11** *SC* **11.7** *P* **481** *L* **32** # 28
STEPHENS, ADRIAN P Individual

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

(On behalf of Shlomo Ovadia) "direct stream" is undefined here and in other occurances

SuggestedRemedy

Proposed change "direct stream"->"direct link", global search and replace

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The comment is outside the scope of the current recirculation ballot. The cited text has not changed. The comment will be forwarded to the working group for consideration in a future revision of the standard.

Cl **11** *SC* **11.7** *P* **481** *L* **5** # 29
STEPHENS, ADRIAN P Individual

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

(On behalf of Shlomo Ovadia) "for the duration of the direct stream as long as there is an active DLS between the two STAs" is redundant and unnecessary

SuggestedRemedy

Delete "for the duration of the direct stream"

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The comment is outside the scope of the current recirculation ballot, as no change was made to the power save functionality with DLS. The comment will be forwarded to the working group for consideration in a future revision of the standard.

Cl **10** *SC* **10.3** *P* *L* # 30
STEPHENS, ADRIAN P Individual

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

(On behalf of Emily Qi) MLME SAP Interface for Vendor Specific Action Frame is missing

SuggestedRemedy

Add new sub-clauses in 10.3 to specify MLME-VENDORSPECIFIC.request, MLME-VENDORSPECIFIC.confirm, and MLME-VENDORSPECIFIC.indication. (Emily Qi volunteers to provide normative text consistent with this recommended change if so approved). Also consider whether clause 9/11 text is necessary to describe its use.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Include the content of document 06/926r1.

Cl **07** *SC* **7.2.2** *P* **81** *L* **25** # 33

CHAPLIN, CLINT F Individual

Comment Type **ER** *Comment Status* **X**

incorrect English, plural noun, singular verb

SuggestedRemedy

Change "QSTAs uses QoS" to "QSTAs use QoS"

Proposed Response *Response Status* **O**

Cl **08** *SC* **8.5.7** *P* **238** *L* **16** # 34

CHAPLIN, CLINT F Individual

Comment Type **ER** *Comment Status* **X**

An accepted comment in a previous letter ballot changed "AAA Key" to "MSK" throughout. But one place in Figure 157 was missed.

SuggestedRemedy

Page 238, line 16 (middle of Figure 157), Change "AAA Key" to "MSK"

Proposed Response *Response Status* **O**

Cl **11** *SC* **11.5.1** *P* **476** *L* **9** # 35

CHAPLIN, CLINT F Individual

Comment Type **ER** *Comment Status* **X**

Unresolved cross reference

SuggestedRemedy

Change "Editor's Note" to "11.5.1.1"

Proposed Response *Response Status* **O**

Cl **11** *SC* **11.7** *P* **481** *L* **49** # 36

CHAPLIN, CLINT F Individual

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

Comment #148 of previous recirculation left inconsistent text in 11.7. The resulting text in D7.0 gives a normative cross reference to the teardown procedures (pointing to 11.7.4), then follows it with a "Note" that says that the DLS cannot be torn down. The first sentence of this pair was inserted by Comment #148 in the previous recirculation, and second sentence ("Note:") reasonably followed the text that was replaced by comment #148. Resolution to comment #148 in previous recirculation should have instructed the editor to include the "Note" in the text being replaced.

SuggestedRemedy

Delete the sentence at line #49 of this page, "Note in this case the DLS cannot be torn down because a teardown message cannot be sent because the QSTAs are not on the same QAP."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* *L* # 37

CHAPLIN, CLINT F Individual

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

Followup to comment #73 of previous ballot. 11e made a big mistake by defining the notion of a QSTA being somehow different than a STA. A STA is a STA. Some STAs are capable of additional functions, and advertises those additional capabilities. This change unfortunately set a precedent for later amendments - 11r D1.0 defined a TSTA and TAP, and 11n D1.0 defined a HT-STA and HT-AP. Don't set the precedent for future amendments to do this again.

SuggestedRemedy

Proposed resolution given in the previous recirculation was rejected, and commentor agrees that several of the QoS modifiers can't be simply deleted. Request that the editor incorporate the changes given in 11-06-0897-xx-000m-q-removal (latest revision), which give instructions for the proper modification for every occurrence of QSTA, QAP, QBSS, QIBSS, nQSTA, nQAP, nQBSS, and nQIBSS.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **03** *SC* **3.34** *P* **50** *L* **13** # 39
PALM, STEPHEN R Individual

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

Revised definition is more confusing. Recommend same defination as in WMM

SuggestedRemedy

An AC for a specific STA, to deliver traffic in that STA specific AC using APSD when an Unscheduled Service Period (USP) is triggered by that STA.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The previous change is to be reversed.

Cl **03** *SC* **3.57** *P* **51** *L* **46** # 40
PALM, STEPHEN R Individual

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

Isn't this standard full of things it defines???. Is there only a single one or multiple ones?

SuggestedRemedy

Delete "defined by this standard". Then the sentence needs more techncal detail to be provided by the contributors

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Editor to replace the current definition with the following: A key management protocol between two parties that confirms mutual possession of a station to station link master key (SMK) and distributes a station to station link transient key (STK).

Cl **03** *SC* **3.125** *P* **57** *L* **9** # 41
PALM, STEPHEN R Individual

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

The deleted sentence changes the definition.

SuggestedRemedy

Return deleted sentnce. Reword if necessary

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Editor to reverse the deletion of the sentence.

Cl **03** *SC* **3.137** *P* **57** *L* **16** # 42
PALM, STEPHEN R Individual

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

Isn't this standard full of things it defines???. Is there only a single one or multiple ones?

SuggestedRemedy

Delete "defined by this standard". Then the sentence needs more techncal detail to be provided by the contributors

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Editor to replace the definition with the following:

A key management protocol between two parties that creates a new station to station link master key (SMK).

Cl **03** *SC* **3.147** *P* **58** *L* **6** # 43
PALM, STEPHEN R Individual

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

Is the last sentence a requirement? How is it fulfilled?

SuggestedRemedy

Delete or define what will qualify in the future.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Editor to delete the last sentence.

Cl **07** *SC* **7.3.2.2** *P* **148** *L* **23** # 44
PALM, STEPHEN R Individual

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

What is "Kbps"? The metric standard for 1000 is lower case "k". Is the intent 1024 or 1000? This needs a definition

SuggestedRemedy

kbit/s

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See resolution to comment #43.

Cl **07** *SC* **7.3.2.2** *P* **148** *L* **23** # 45

PALM, STEPHEN R Individual

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

What is "rounded up"? The encosing or the value? The example is confusing since the encoding should be 0x02

SuggestedRemedy

clarify

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Replace "data rate, in units of 500Kbps and, if necessary, rounded up" with "data rate, rounded up to the next 500kb/s"

Cl **07** *SC* **7.4.5.** *P* **198** *L* **4** # 46

PALM, STEPHEN R Individual

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

Are the Vendor specific contents rely defined in the standard?

SuggestedRemedy

reword to clarify intent

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Editor to delete the following from the sentence: "and the Information Elements that are defined in the standard"

Cl **08** *SC* **8.1.4** *P* **201** *L* **47** # 47

PALM, STEPHEN R Individual

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

Much of this clause reads like a proposal not a standard. " is provided", "it is the intent&", "common"

SuggestedRemedy

Clarify

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Replace the first paragraph of 8.1.4 with the following text:

The PeerKey protocol provides mutual authentication, session identification, and data confidentiality for a STA to STA connection. A PeerKey association, comprised of a STA to STA link master key security association (SMKSA) and a STA to STA link transient key security association (STKSA), shall only be allowed within the context of an existing RSNA by both peers with a common AP. Both the initiator STA and the peer STA shall ensure that dot11RSNAEnabled is true before initiating the STA to STA link master key (SMK) and STA to STA transient key (STK) handshakes and establishing their respective security associations.

Cl **08** *SC* **8.1.4** *P* **201** *L* **52** # 48

PALM, STEPHEN R Individual

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

"STA shall ensure" sounds like the STA should set instead of read the value

SuggestedRemedy

Calrify intent

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See the resolution to comment #47.

Cl **08** *SC* **8.3.2.4** *P* **218** *L* **13** # 49

PALM, STEPHEN R Individual

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

The new statement is vague and content free.

SuggestedRemedy

Delete or add some substance or reference

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See the resolution to comment #54.

Cl **08** *SC* **8.4.1.1.4** *P* **232** *L* **33** # 50

PALM, STEPHEN R Individual

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

"SMKSAs are cached for up to their lifetimes." Are SMKSAs required to be cached?

SuggestedRemedy

Clarify that it is not an imlementation detail

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Delete "SMKSAs are cached for up to their lifetimes." from 8.4.1.1.4. This is an implementation decision and is not necessary to be specified. The protocol is robust enough to deal with the case where one side of the exchange has deleted the SMKSA.

Cl **08** *SC* **8.5.1.4** *P* **247** *L* **1** # 51

PALM, STEPHEN R Individual

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

Are these assumptions or requirements?

SuggestedRemedy

Clarify

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Replace "Here the following assumptions apply:" with "The following apply and are depicted in Figure 140."

Cl **09** *SC* **9.2.6** *P* **316** *L* # 52

PALM, STEPHEN R Individual

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

"indivudally addressed" does not seem to be defined. "directed" was defined in 3.35

SuggestedRemedy

Define

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Add the following definition: "Individual address: See unicast address."

Add individual address as a synonym in the unicast address definition.

Cl **00** *SC* **0** *P* **160** *L* **2** # 53

STANLEY, DOROTHY V Individual

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

"PeerKey specification" seems to imply that there is a separate document; not needed

SuggestedRemedy

Delete the phrase beginning with "However such communications&PeerKey Protocol" and replace with "In this case, the PeerKey protocol is not used."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* **176** *L* **13** # 54

STANLEY, DOROTHY V Individual

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

Either define the applicable countermeasures that apply to DLS, or delete the sentence.

SuggestedRemedy

Delete the sentence beginning "Some TKIP countermeasures"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **08** *SC* **8.4.1.1.4** *P* **190** *L* **31** # 55
STANLEY, DOROTHY V Individual

Comment Type **ER** *Comment Status* **X**
Duplicate text

SuggestedRemedy
Delete the sentence beginning "In other words&"

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **190** *L* **33** # 56
STANLEY, DOROTHY V Individual

Comment Type **ER** *Comment Status* **X**
non-specific language

SuggestedRemedy
Change from "their lifetimes" to "the SMK Lifetime"

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **190** *L* **29** # 57
STANLEY, DOROTHY V Individual

Comment Type **ER** *Comment Status* **X**
Inconsistent article usage

SuggestedRemedy
Change from "An SMKSA" to "The SMKSA"

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **199** *L* **26** # 58
STANLEY, DOROTHY V Individual

Comment Type **TR** *Comment Status* **D**
Could not find the definition of an STSL "Teardown". Clause 8.5.9.2 refers to both the STSL Teardown procedure and to an STSL Teardown Message, neither of which are defined. Believe that these references should refer to e.g. DLS teardown - the application that uses the STSL. Also in 8.5.3.5. Also, capitalization on STLS "Teardown" vs "teardown" is not consistent. Pick one.

SuggestedRemedy
Change all instances of "STSL teardown xxx" to a single term, such as "STSL application Teardown procedure" and indicate that one example is the MLME-DLSTeardown.request.

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

Adopt the suggested remedy as written. In addition, at the first occurrence of STSL teardown, add the following text. "An example of STSL application teardown procedure is described in 11.7.3."

Cl **00** *SC* **0** *P* **205** *L* **54** # 59
STANLEY, DOROTHY V Individual

Comment Type **ER** *Comment Status* **X**
Incorrect grammar

SuggestedRemedy
Change from "to deliver SMK" to "to deliver the SMK"

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **208** *L* **20** # 60
STANLEY, DOROTHY V Individual

Comment Type **ER** *Comment Status* **X**
Incorrect grammar

SuggestedRemedy
Change from "The STAs where SMK handshakeis not implemented&" to "If the SMKHandshake is not supported, the STA shall set the SMK message bit to 0 and&.."

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **214** *L* **8** # 61
STANLEY, DOROTHY V Individual

Comment Type **ER** *Comment Status* **X**
Incorrect grammar

SuggestedRemedy
Change from "PeerKeyHandshake uses..section 8.5.9"" to "PeerKeyHandshake Messages use EAPOL-Key frames as defined in 8.5.9."

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **217** *L* **42** # 62
STANLEY, DOROTHY V Individual

Comment Type **ER** *Comment Status* **X**
Incorrect grammar

SuggestedRemedy
Change from "as follows" to "is as follows"

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **217** *L* **53** # 63
STANLEY, DOROTHY V Individual

Comment Type **ER** *Comment Status* **X**
Incorrect grammar

SuggestedRemedy
Change from "as follows" to "is as follows"

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **220** *L* **51** # 64
STANLEY, DOROTHY V Individual

Comment Type **ER** *Comment Status* **X**
Convention is to capitalize "H" in Handshake"

SuggestedRemedy
Change from "handshake" to "Handshake"

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **222** *L* **13** # 65
STANLEY, DOROTHY V Individual

Comment Type **ER** *Comment Status* **X**
Convention is to capitalize "H" in Handshake"

SuggestedRemedy
Change from "handshake" to "Handshake"

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **222** *L* **13** # 66
STANLEY, DOROTHY V Individual

Comment Type **ER** *Comment Status* **X**
Incorrect article use

SuggestedRemedy
Insert "the" prior to "4-Way handshake" and prior to "STK"

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **231** *L* **27** # 67
STANLEY, DOROTHY V Individual

Comment Type **ER** *Comment Status* **X**
Convention is to capitalize the state names

SuggestedRemedy
Change from "PeerKeyInit" to "PEERKEYINIT"

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **233** *L* **5** # 68
STANLEY, DOROTHY V Individual

Comment Type **ER** *Comment Status* **X**
Incorrect grammar

SuggestedRemedy
Delete "out" and "other" from the first sentence.

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **233** *L* **13** # 69
STANLEY, DOROTHY V Individual

Comment Type **TR** *Comment Status* **D**
Not sure "will be" is the right verb here

SuggestedRemedy
Change "will be" to "are"

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

Change "will be dropped" to "are dropped".

Cl **00** *SC* **0** *P* **233** *L* **15** # 70
STANLEY, DOROTHY V Individual

Comment Type **ER** *Comment Status* **X**
Incorrect grammar

SuggestedRemedy
Change "is provided" to "are provided"

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **233** *L* **19** # 71
STANLEY, DOROTHY V Individual

Comment Type **ER** *Comment Status* **X**
Incorrect grammar

SuggestedRemedy
Insert "the" prior to "MAC Address", "Peer STA" and "PeerKey"

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **233** *L* **20** # 72
STANLEY, DOROTHY V Individual

Comment Type **ER** *Comment Status* **X**
Incorrect grammar

SuggestedRemedy
Insert "the" prior to "MAC Address", "Initiator STA" and "PeerKey"

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **233** *L* **21** # 73
STANLEY, DOROTHY V Individual

Comment Type **ER** *Comment Status* **X**
Missing articles

SuggestedRemedy
Insert "The" and "the" prior to the "STK" occurrances

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **235** *L* **47** # 74
STANLEY, DOROTHY V Individual

Comment Type **ER** *Comment Status* **X**
Missing punctuation

SuggestedRemedy
Insert a period following "machine"

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **235** *L* **48** # 75
STANLEY, DOROTHY V Individual

Comment Type **ER** *Comment Status* **X**
Duplicate punctuation

SuggestedRemedy
Delete the period after the :

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **235** *L* **50** # 76
STANLEY, DOROTHY V Individual

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

Reference to direct link application not needed

SuggestedRemedy

Delete the sentence beginning "This state can be repeated multiple.."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* **237** *L* **1** # 77
STANLEY, DOROTHY V Individual

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

Lines 1-20 seem to be missing text, and has many missing articles, and sentence fragments. For example, the first definition should probably say "is received by" the Initiator STA

SuggestedRemedy

Add complete descriptions

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Replace the existing text with the following:

— SMKNEGOTIATING3: This state is entered when the fifth EAPOL-Key frame for the SMK Handshake is received by the Initiator STA.
— SMKNEGOTIATING4: This state is entered when the fourth EAPOL-Key frame for the SMK Handshake is received by the Peer STA.
— STKSTART: Once the SMKSA is created, the Initiator STA enters this state. This is the start of the STK 4-Way Handshake.
— STKCALCNEGOTIATING: This state is entered when the second EAPOL-Key frame for the STK 4-Way Handshake is received by the Initiator STA and the MIC is verified.
— STKCALCNEGOTIATING1: This state is entered when the first EAPOL-Key frame for the STK 4-Way Handshake is received by the Peer STA and the MIC is verified.
— STKCALCNEGOTIATING2: This state is entered unconditionally by the Initiator STA.
— STKCALCNEGOTIATING3: This state is entered unconditionally by the Peer STA.
— STKCALCNEGOTIATING4: This state is entered when the third EAPOL-Key frame for the STK 4-Way Handshake is received by the Peer and the MIC is verified.
— STKINITDONE: This state is entered by the Initiator STA when the fourth EAPOL-Key frame for the STK 4-Way Handshake is received. This state is entered by the Peer STA when the fourth EAPOL-Key frame for the STK 4-Way Handshake is sent.

Also replace "STAKCALCNEGOTIATING2" with "STKCALCNEGOTIATING2" in figure 156.

Cl **00** *SC* **0** *P* **243** *L* **48** # 78
STANLEY, DOROTHY V Individual

Comment Type **ER** *Comment Status* **X**

Missing article

SuggestedRemedy

Insert "the" prior to "PeerKey"

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **243** *L* **49** # 79
STANLEY, DOROTHY V Individual

Comment Type **ER** *Comment Status* **X**

Incorrect article use

SuggestedRemedy

Change "This" to "The"

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **243** *L* **53** # 80
STANLEY, DOROTHY V Individual

Comment Type **ER** *Comment Status* **X**

Missing article

SuggestedRemedy

Insert "the" prior to "first"

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **243** *L* **54** # 81
STANLEY, DOROTHY V Individual

Comment Type **ER** *Comment Status* **X**

Grammar error

SuggestedRemedy

Change from "on receiving of first" to "upon receipt of the first"

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **244** *L* **1** # 82
STANLEY, DOROTHY V Individual

Comment Type **ER** *Comment Status* **X**
Grammar error

SuggestedRemedy
Change from "the STAs" to "each STA" and change from "message arrived for that session" to "messaged received for that session"

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **244** *L* **1** # 83
STANLEY, DOROTHY V Individual

Comment Type **TR** *Comment Status* **D**
"states" is not specific

SuggestedRemedy
Change from "Peerkey hanshake states" to "STKSA and SMKSA"

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

Replace "On expiration of this timer, the STAs shall delete its PeerKey handshake states and discard any message arrived for that session (after expiry)." with "On expiration of this timer, the STA shall transition to the STKINIT state."

Cl **00** *SC* **0** *P* **244** *L* **4** # 84
STANLEY, DOROTHY V Individual

Comment Type **ER** *Comment Status* **X**
Missing article

SuggestedRemedy
Insert "the" prior to PeerKey

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **244** *L* **13** # 85
STANLEY, DOROTHY V Individual

Comment Type **ER** *Comment Status* **X**
Grammar error

SuggestedRemedy
Change "whom" to "which" and insert "the" prior to STA_I

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **244** *L* **20** # 86
STANLEY, DOROTHY V Individual

Comment Type **ER** *Comment Status* **X**
Grammar error

SuggestedRemedy
Change "complete handshake has two parts" to "The PeerKey Handshake has two components:"

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **244** *L* **23** # 87
STANLEY, DOROTHY V Individual

Comment Type **ER** *Comment Status* **X**
Missing article

SuggestedRemedy
Insert "the" prior to "SMKSA" and prior to "PTK"

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **244** *L* **25** # 88

STANLEY, DOROTHY V Individual

Comment Type **ER** *Comment Status* **X**

missing puncuation, article

SuggestedRemedy

Change from "SMKSA Initiator STA" to "SMKSA, the Initiator STA" and change from "initiates 4-way handshake" to "initiates the 4-Way Handshake" and insert "the" prior to both occurrances of STKSA.

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **244** *L* **47** # 89

STANLEY, DOROTHY V Individual

Comment Type **ER** *Comment Status* **X**

not standards terminology

SuggestedRemedy

Change "by filling the" to "including the". Insert "the" before group in the second sentence, change "fill this field with any value and on the other side STA"" to "include any value in this field and the receiving STA

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **251** *L* **46** # 90

STANLEY, DOROTHY V Individual

Comment Type **ER** *Comment Status* **X**

missing article

SuggestedRemedy

Insert "the" prior to "STA"

Proposed Response *Response Status* **O**