Seq. #	Section number	your voter's id code	Cmnt type E, e, T, t	Part of NO vote	Comment/Rationale	Recommended change	Disposition/Rebuttal

Ballot result P802.11 D5.3 Recirculation ballot result

118	Number of eligible people in Ballot Group	
80	Affirmative votes	
2	Negative Votes	
11	Abstention votes	
93	Votes =	78 % returned
		11 % abstention
80	Affirmative votes	
2	negative votes	
82	votes	98 % affirmative.

Here are the comments:

Seq. #	Section number	your voter's id code	Cmnt type E, e, T, t	Part of NO vote	Comment/Rationale	Recommended change	Disposition/Rebuttal
1	10.3.3.1 and Annex C-49, C-59 C-73	MAF	E	(na)	Clause 11.2.1.1 requires use of ProbeDelay when a station using power management changes from Doze to Awake state. However, there may be cases that no value for ProbeDelay is available, because the only place that ProbeDelay is provided to the MAC is in the MlmeScan.request. While the description of "BSSDescription" in 10.3.3.1 states that it "was returned as a result of an MlmeScan.request" there is no constraint that the MlmeScan.request be executed since the last MlmeReset.request.	Add a ProbeDelay parameter (same description as in MlmeScan.request) to MlmeJoin.request.

The alternative is to require an MlmeScan prior to any MlmeJoin, which appears to be an unnecessary constraint for joining BSSes using non-FH PHYs. | Missing Delay added to SM. Also added the param to the corresponding Start to make consistent with the text. |
| 2 | 13.1.4.23, Annex C-91, C-92, C-136, C-137 | MAF | E | (na) | The equation which calculates the MPDU duration has misplaced parentheses, since the preamble and PLCP header duration are not affected by the transmit data rate. However, there is not an value in the PHY MIB which indicates the rate at which these portions of the frame are sent. Rather than add another attribute to the PHY MIB, I recommend that the description of SupportedRatesTx be extended to state that the first supported rate shall be the rate at which preambles and PLCP headers are sent. This has the added advantage that the values given in clauses 14, 15, and 16 do not have to change. | Add the following to "BEHAVIOR DEFINED AS" of 13.1.4.23:
" The first item in this list shall indicate the data rate at which preambles and PLCP headers are transmitted."

Change the equation to calculate tdur on C-91, C-92, C-136, C-137 to:
tdur:= calcDur(txrate, stuff(aMpduDurationFactor, ((length(tpdu) + sCrcLng) * 8))) + | math corrected. |

Seq. #	Section number	your voter's id code	Cmnt type E, e, T, t	Part of NO vote	Comment/Rationale	Recommended change	Disposition/Rebuttal
						(2 * (calcDur(plcprate, (aPlcpHeaderLength + aPreambleLength))) + aSifsTime + calcDur(txrate, stuff(aMdpuDurationFactor, sAckCtsLng)) Also, add initialization to set plcprate from the first element of aSupportedRatesTx	
3	9.3.2.2 and Annex C-100	MAF	E	(na)	There is a descrepancy between clause 9.3 and the formal description on handling of clearing the NAV due to CF-End or CF-End+Ack reception. In 9.3.2.2, last sentence, it states that the NAV is cleared due to reception of a CF-End{+Ack} from ANY BSS. This is a bad idea, because it is likely to reduce the effectiveness of the NAV in protecting the CFP in the case of overlapping, point-coordinated BSSes, which is the case where such protection is most important. In the Annex C Channel_State process a distinction is made between a NAV setting due to a CFP of the BSS which the station has joined versus a CFP of another BSS. Receipt of a CF-End{+Ack} only clears the NAV when the source of this end matches the source of the NAV setting. Note that the current NAV source (navSrc) is set only when the NAV is increased (in these cases by a CFDurRemaining greater than the current NAV setting), or when the NAV is cleared, not on each SetNav receipt. There is still a chance of ambiguity if 3 or more point-coordinated BSSes overlap, but attempting to match CF-Ends with Beacons was discussed, and rejected as unnecessarily complex, about 18 months ago. This commenter's experience with PC operation is that the approach in Annex C achieves as much as can be achieved without inter–AP synchronization, which cannot be relied upon in this case because the various PCs may not be part of the same ESS.	Change the last sentence of 9.3.2.2 to read: "A station which receives either of these frames from the same BSS that provided the CFDurRemaining used for the most recent NAV update, shall reset its NAV." This is an editorial change for consistency between clause 9 and Annex C. Also, at least in part, this problem originated from an editing artifact around v3—v4, since the original scheme adopted when we changed from using the PIFS/SIFS as the primary means for the PC to retain control of the medium to use the NAV from CFDurRemaining, there was a distinction between own BSS and other BSS that has been lost in the text.	Comment declined after discussion of the group. The Sm were corrected to match the existing text.

Seq. #	Section number	your voter's id code	Cmnt type E, e, T, t	Part of NO vote	Comment/Rationale	Recommended change	Disposition/Rebuttal
4	Annex C-71	MAF	E	(na)	Two instances of next state "-" appear as next state "*" which is an illegal construct in SDL.	change "*" to "-" in 2 places	SM were corrected.
5	Annex C-73	MAF	e	(na)	variables yStt and yEnr are not declared	add declarations	SM were corrected.
6	Annex C	MAF	e	(na)	Correct numerous spelling errors.	I will provide these corrections as part of the Annex C for re-release.	SM were corrected.
7	Annex C-15	MAF	e	(na)	Minimum size of tuple cache is over constrained.	Change ">2" to ">=2".	Declined: Editorial problem re normative consistency - SM was corrected to remove the minimum of 2.
8	Annex C-15, C-42, C-49, C-116	MAF	e	(na)	The RateSet sort does not match the use of the rate values declared using this sort.	Remove definition of RateSet, replace with RateString, as a subtype of octetstring.	SM were corrected.
9	Annex C-16, C-19	MAF	e	(na)	The criterion for selecting an entry to replace in the tuple cache is not defined in the standard.	Change the name of variable "oldest" to "target" and add comment that the age based test is illustrative, and the selection criteria are not defined in the standard.	Declined: SM will be editorially corrected to be consistent with the text and previous committee decisions. Text became: "…replaces an entry in the cache using an implementation dependent algorithm."
10	Annex C-26, C-103	MAF	e	(na)	The decision on whether there is a buffer available to receive the first fragment of a new MSDU is over constrained by the logic on C-103 that causes the new frame to be discarded. There is nothing in the text which precludes discarding some other non-complete MSDU in order to accept the new fragment.	Add a parameter (boolean) to ArAge to indicate whether an entry must be made available. Add a decision to ArAge to use unspecified criteria to select the entry when the new parameter is true. Call ArAge with the new parameter = true in the 3rd column on page C-103.	Procedure ArFree unspecified to match text.
11	Annex C-6,	MAF	e	(na)	The response from Tx_Coordination to PM_Filter due to Atim transmission is overloaded on the result codes for	Add 2 more literals, "atimAck" and "atimNak" to the definition of TxResult	Names changed to improve readbility.

Seq. #	Section number	your voter's id code	Cmnt type E, e, T, t	Part of NO vote	Comment/Rationale	Recommended change	Disposition/Rebuttal
	C-82, C-94				frame delivery, and has confused several reviewers.	(C-6). Generate these literals for successful and unsuccessful Atim delivery on C-94. Use "atimAck" in the non-else branch of decision "resl" on C-82.	
12	Annex C-62, C-65, C-122	MAF	e	(na)	AuthReqService is not common between station and AP, but is mis-named on page C-62.	Change station version (pages C-62 and C-65) to AuthReqService_Sta.	SM were corrected.
13	Annex C-89	MAF	e	(na)	The receipt of a PSPoll frame needs to be signalled from Rx_Coordination to Tx_Coordination_AP.	Add a PsPoll output signal to the true branch of the mActingAsAp decision for PsPoll in center of page	SM were corrected.
14	Annex C-90,1 C-135,6	MAF	e	(na)	There are some references to "Tx_Idle" instead of "TxC_Idle"	correct this typo in all places Tx_Idle appears	Name typos were corrected.
15	Annex C-91, C-136	MAF	e	(na)	The equation for the duration field value of RTS frames needs the same correction as for tdur in a previous comment.	Remove aPlcpHeaderLength and aPreambleLength from txrate calcDur and move to plcprate calcDur as for tdur calculation.	Corrected.
16	Annex C-91, C-136	MAF	E	(na)	The value placed into the DurId field of data and management frames is inconsistent with clause 7, since the duration is defined from the end of the frame, whereas the value of tdur includes the length of the MPDU transmission (which is needed for the duration of the RTS frame).	Calculate the value for the DurId field as: calcDur(plcprate, (aPlcpHeaderLength + aPreambleLength)) + aSifsTime + calcDur(txrate, stuff(aMdpuDurationFactor, sAckCtsLng))	Misplaced bracket was corrected.
17	Annex C-91,2 C-136,7	MAF	e	(na)	For the IR PHY, the rate switch occurs during the PLCP header, not between the PLCP header and the PLCP payload (MPDU). Therefore, for the IR PHY the corrected duration equation is still incorrect.	Add a comment to the SDL noting the difference for the IR PHY, or change the point at which the rate changes in clause 16.	Comment added.
18	Annex C-92	MAF	E	(na)	At TBTT in an IBSS the decrementing of the backoff timer for non-Beacon, non-ATIM transmissions is to be suspended (11.1.2.2), but the transitions out of states Wait_Rts_Backoff and Wait_Mpdu_Backoff do not do	Add transitions from these states in response to Tbtt signals.	SM were corrected.

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					this.		
19	Annex C-92, C-93	MAF	E	(na)	The current contention window (ccw) is incremented on failures, but the increased value is not passed to the Backoff_Procedure for use.	Send the proper Backoff signal in ack_fail and cts_fail cases.	SM corrected.
20	Annex C-94	MAF	e	(na)	Incorrect backoff time parameter in Backoff signal output in middle of this page.	Change "atimcw" to "ccw".	SM corrected.
21	Annex C-94	MAF	e	(na)	ATIMs retries should be counted using the short retry count, since they are management frames.	Add appropriate counting of Atim failures and retries.	SM corrected.
22	Annex C-95	MAF	E	(na)	There needs to be a wait for ProbeDelay in the transition from state Asleep due to receipt of a PduRequest signal, as specified in 11.2.1.1.	Add this delay after the output of ChangeNav signal.	Missing Delay added to SM.
23	Annex C-132, C-133	MAF	E	(na)	The contents of PM_Filter_AP are incomplete. This appears to be due to operator error when building the Annex C pdf file for distribution, using an older, incomplete version of this process by mistake.	Replace these pages with the complete versions, that match the text describing infrastructure BSS power management in Clause 11.	Editorial file mis-substitution was corrected.
1	11.4.4.2.15	AS	e	n	The change in the errata sheet has redundant information and is confusing. The acronym MPDU were fragmented MAC Protocol Data units and MMPDUs were unfragmented MAC Management Procotol Data units (save level as MSDUs).	Errata Text: "This attribute shall indicate the number of bytes in an MPDU, below which an RTS/CTS handshake shall not be performed. An RTS/CTS handshake shall be performed ~~for~~ at the beginning of any frame exchange sequence where the MPDU is of type Data or MMPDU is of type Management, the MPDU or MMPDU has an individual address in the Address1 field, and~~all frames where~~ the length of the MPDU or MMPDU is equal to or larger than this threshold. (For additional details, refer to Table 21 in Clause 9.7.) Setting this attribute to New Text: "This attribute shall indicate the number of bytes in an MPDU, below which an RTS/CTS handshake shall not be performed. An RTS/CTS handshake	Editorial correction to text from errata sheet corrected in draft 6.1.

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						shall be performed ~~for~~ at the beginning of any frame exchange sequence where the MPDU is of type Data or Management, the MPDU has an individual address in the Address1 field, and~~all frames where~~ the length of the MPDU is equal to or larger than this threshold. (For additional details, refer to Table 21 in Clause 9.7.) Setting this attribute to	
2	C-15	AS	E	n	In TupleCache support sorts: I can't find anywhere in the text where a minimum cache size of 2 is specified.	Delete text: (must be > 2)	Editorial problem re normative consistency - SM was corrected to remove the minimum of 2.
3	C-16	AS	E	n	The algorithm for updating the Tuple cache was intentionally left out of the standard. In fact the contention at the July meeting with regard to my comment on this subject was that since the algorithm was not specified there was no reason for concern.

The size of the cache is not specified in the text and neither is the expected behavior when the cache size limit is exceeded.

The external behavior of the algorithm described here can be verified and be used to define a device as non-conformant if it does not discard the oldest entry when the cache is full. | Current Text: replaces oldest or empty entry if not cached.

New Text: replaces an entry in the cache using an unspecified algorithm. | SM will be editorially corrected to be consistent with the text and previous committee decisions.

Text became: "…replaces an entry in the cache using an implementation dependent algorithm." |
| 4 | C19 | AS | E | n | The algorithm for updating the Tuple cache was intentionally left out of the standard. In fact the contention at the July meeting with regard to my comment on this subject was that since the algorithm was not specified there was no reason for concern.

The size of the cache is not specified in the text and neither is the expected behavior when the cache size limit is exceeded. | Delete page. | Accepted - as the alg is intentionally unspecifed. This is not reflected in the SM drawing - this did not require deletetion of the page as the page also had other logic that had to remain. |

Seq. #	Section number	your voter's id code	Cmnt type E, e, T, t	Part of NO vote	Comment/Rationale	Recommended change	Disposition/Rebuttal
					The external behavior of the algorithm described here can be verified and be used to define a device as non-conformant if it does not discard the oldest entry when the cache is full.		
5	C-23	AS	e	n		Current text: Searchable using the AsSearch operator New text: Searchable using the ArSearch operator	Accepted, corrected inconsistency.
6	C-103	AS	E	n	The defragmentation behavior of an STA when it receives more than the minimum number of fragmented MSDUs/MMPDUs concurrently is unspecified. However, this state machine requires the STA to discard the first fragment of the new MSDU.	I'm not sure how, but remove the requirement.	Corrected - the alg should not have been specified in the SM per previous committee decisions.
7	9.3.2.2 (last par)	AS	t	n	In the other_bss stream a CF_end from another BSS causes the NAV to get cleared. It seems to me that allowing this causes the receiving of a CF_end from another BSS to override the NAV set by the PC of this BSS. This is a problem in both the text and the formal description.	Current Text: from any BSS, New Text: from it's own BSS,	Comment declined after discussion. The SM were corrected to match the existing text.
8	C-106	AS	t	n	In the other_bss stream a CF_end from another BSS causes the NAV to get cleared. It seems to me that allowing this causes the receiving of a CF_end from another BSS to override the NAV set by the PC of this BSS or the PC of a third BSS. This is a problem in both the text and the formal description.	Delete the output signal on the other_bss branch for cfend, cfend_ack	The Sm were corrected to match the existing text.
9	C-90	AS	e	n	I believe that the state at the bottom of the tx_sifs branch should be TxC_Idle	Current Text: Tx_Idle New Text:	Name typos were corrected.

Seq. #	Section number	your voter's id code	Cmnt type E, e, T, t	Part of NO vote	Comment/Rationale	Recommended change	Disposition/Rebuttal
						TxC_Idle	
10	C-91	AS	e	n	The calculation for duration uses aPlcpHeaderLength and aPreambleLength. The first use of aPreambleLength has the closing bracket in the wrong place.	Move the closing bracket for stuff to after aPlcpHeaderLength instead of after aPreambleLength.	Equation corrected.
11	16.4	AS	e	n	How can integer type attributes have two different values. APreambleLength and aPlcpHeaderLength are defined as integer but are defined in the table here to have two different values each based on the rate.	I don't know.	Declined to make any change in the IR PHY.
12	11.2.1 .1	AS	e	n	In the last paragraph the station is required to wait for ProbeDelay before transmitting when transitioning from doze to wake. However, no mechanism remains in the MAC to determine what value to use for ProbeDelay.	Add ProbeDelay to the parameter list for start/join in clause 10.	Corrected by a editorial change to the abstract service interface.
13	C-95	AS	E	n	The ChangeNav signal issued after awakening causes an EIFS to be used before transmisstion (C-100). However, Clause 11.2.1.1 states that the STA must wait ProbeDelay before starting a transmission.		Missing Delay added to SM.
14	C-99	AS	e	n	On startup dEifs is used to initialize the deferral. It seems to me it should be the same as waking up, i.e. wait ProbeDelay.		Declined: current time is ok, no change made.
15	C-92, C-93	AS	E	n	In both the ack_fail and cts_fail cases there appears to be no signal to backoff to use the increased ccw. I think the failure should probably be handled as in the atim_fail case on page C-94.		SM corrected.
16	C-94	AS	E	n	The backoff for transmission should be ccw not atimcw. Only ccw gets updated on failures.		SM corrected.
17	C-94	AS	E	n	ATIM failures and retries do not get counted anywhere. I assume they should get counted in the short retry count.		SM corrected.
1	14	VH	m		The use of PLCP-PDU is to be reconsidered		Naming improved.
2	14.3.1	VH	m		MAC PDUs should be MPDUs	change accordingly	changed.
3	14.3.2. 2.1	VH	m		MPDU packet is a wrong term	strike packet	changed.

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4	14.6.1 5.7	VHJa pan	m		Out-of-band spurious emissions shall be provided like DSSS PHY specifications.	Add the following text. The FHSS PHY shall conform with out-of-band spurious emissions by regulatory bodies.	Declined. The requirement requested is already covered in clause 14.6.2
5	14.6.2	VHJa pan	m		The official name of private standardization body in Japan has been changed.	Change the text as follows; Approval standards: Association of Radio Industries and Businesses(ARIB)	Corrected.
6	15.4.6 .2 table 65, Annex A A.4.6	VH	m		The lowest channel for France, which has CHNL ID 10 has its centerfrequency at 2457 MHz. According to the Transmit Spectrum Mask (section 15.4.7.4) spectral products shall be -30dBr for frequencies below fc-11MHz and above fc+11MHz. For France these points start at 2446 MHz and 2468 MHz. ETS300-328 specifies that the lowest frequency (Fl) of the TX power envelope; it is the frequency furthest below the frequency of maximum power where the output power drops below the level of -80dBm/Hz spectral density (-30dBm if measured in a 100 kHz bandwidth). France currently specifies Fl as 2446.5 MHz. The maximum output power for Europe (and France) is 100mW. For the direct sequence signal this is about 10dBm/MHz (or 0dBm/100kHz). It can be a little bit more depending on the measurement method. According to the 802.11 spec the -30dBm point is required at 2446 MHz and not at 2446.5 as required by France. There is a mismatch of 500kHz. Consequence: if a 802.11 transmitter just meets the spectrummask of 802.11 then it will not meet ETS300-328 for France when operating in channel 10. Therefor the specification for CHNL ID 10 for France as a requirement should be taken out of the draft! It is expected that this will be temporarily, since there is a good chance that France may change to the full ETS operating band in the (near) future (2400-2483.5 MHz).	to remove France channel with CHNL ID 10: clause 15.4.6.2 table 65 remove X at column France, row 10; clause A.4.6 remove item DS5.4.1; renumber DS5.4.2, DS5.4.3, DS5.4.4 into DS5.4.1, DS5.4.2, DS5.4.3 resp.	Declined - ok with reviewer. This would be a technical change very late in the process and the issue can be resolved by transmitting lower power in the channel and might only be a temporary change anyway (as pointed out by the comment).

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7	15.4.7.1	VHJapan	m		'Compliance document' for Japan is not correct.	'MPT ordinance 79' should be replaced by 'MPT ordinance for Regulating Radio Equipment, Article 49-20'.	Corrected.
8	2	VHJapan	m		Radio access is regulated by ITU Radio Regulations.	7. ITU Radio Regulations	added.
9	7	VH	M		Title of clause 7. Frame and MPDU formats suggests two different types.	Change "Frame and MPDU" into "Frame/MPDU"	Title corrected.
10	7.1.1	VH	m		The protocol data units (PDUs) in the MAC sublayer are described as a sequence of fields in specific order. This is the only reference to PDUs. Are this MPDUs? In successive sentences the term MAC Frame is used.	Recommended to change protocol data units to MAC Frames.	Wording corrected.
11	7.1.3.3.6	VH	m		The receiver address (RA) field contains an IEEE MAC individual or group address that identifies the intended immediate recipient STA(s), on the wireless medium, for the MPDU contained in the frame body. An MPDU is never contained in the frame body. The frame body is part of the MPDU.	Change "MPDU" into "information (e.g. fragment of an MSDU)".	Corrected.
12	9.2.5.6	VH	m		It may be inferred from the following words on the first line in this clause " of using RTS/CTS for the *first* fragment of a fragmented MSDU " that the specification is not valid after a retransmission.	Change to " of using RTS/CTS for the *first* fragment after the CTS/RTS exchange of a fragmented MSDU	Alternate wording to that suggested was made to improve the clause - new text OK with the reviewer.
13	9.5	VH	M		The reference in the last paragraph points to the wrong clause	Change "9.2.8" into "9.2.9"	Corrected
14	Annex C page 103	VH	m		comment to RxIndicate action (column 2 top indication) is not complete	Add "or defragmentation is	corrected
15	Annex C page 52	VH	m		use of unknown signal "serv"	Replace on 3 places "serv" by "srv"	corrected

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16	Annex C Page 62, Annex C page 122	VH	m		Inconsistency. On C-62 the service "AuthReqService" suggest this is identical for AP and STA. However on page C-122 the specific reference to service "AuthReq_Service_*AP*" is made.	Recommended to change on page C-62 "AuthReqService" into "AuthReqService_STA", and to change on page C-122 "AuthReq_Service_AP" into "AuthReqService_AP".	corrected (The SDT analyzer should have caught this one, but SDT 3.02 did not. The first time I loaded the file with the SDT 3.1 beta the incorrect name was detected and SDT offered to correct it prior to continuing!)
17	Annex C page 71	VH	m		Some of the diagrams end in a state with a STAR. The meaning is "any state except the one identified". That seems to be ambiguous.	Clarify the meaning in the example on page 3	Nextstate "*" is not legal in SDL. These two symbols are typos, and have been corrected to Nextstate "-".
18	Annex C page 73-75	VH	m		yStt and yEnr have not been declared	Make the declarations	These have both been declared as "Time".
19	Annex C page 91	VH	m		Use of "fdsu" in lefthand column fourth block from top	Change int o"fsdu"	corrected
20	Annex E	VHJ apan	M tech nical	n	The article 25 of ITU Radio Regulations specifies that all transmissions shall be capable of being identified either by identification signals or by other means. In Japan, all Wireless LAN stations used 2.4GHz band are regulated to have the CALLING NAME for automatic transmitter identification, based on Radio Law established in accordance with article 25 of ITU Radio Regulations. Implementers are referred to the regulations of Japan. The national body of Japan proposes to add new Annex(E. Annex).	Add new Annex. E. Annex - The technical specification of calling name storage device and identification device for radio equipment for low power data communication system radio station. (See Attached document)	The IEEE 802.11 organization understands the desire for products to be compliant with the regulations of various countries. However, 802.11 can not guarantee that products which implement the standard do in fact comply, this is the responsibility of the equipment manufacturer. It is the committee's understanding that article 25 of the ITU regulations state that either a call sign or other means of identification is allowed - 802.11 believes that the "other means" is satisfied by mechanisms within the standard (MAC address etc) which provide unique identification.

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1	1.2	RS	t	Y	Eliminate conformance requirements from Overview.	p1, line 20, change "shall be" to "are"	editorial change of wording - corrected.
2	2	RS	e		Use the latest dates for references (e.g., in line 2, there is a revision of IEEE 802 that is more recent than 1990)	Allow the IEEE editor to provide the actual titles and dates for all reference materials.	Agreed - the IEEE editor can update this info if needed.
3	3	RS	E			Each definition should include a parenthetical, e.g., "(see IEEE 802.1 section xyz)". All of the definitions are aggregated into the IEEE Dictionary, and without this parenthetical, the context of the definition is lost.	Parentheticals added to make the IEEE dictionary read easier.
4	3.10	RS	e		"Piggybacked" is undefined slang.	Eliminate the term, or define it.	Wording corrected.
5	3.15	RS	e		If "Directed" is identical to "Unicast", then why define a new term?	Eliminate the term "directed" (in the context of an address) from the definitions and the draft.	Declined - this has been extensively discussed and the current wording is the preference of the group.
6	3.21	RS	e			Line 17, change the first "of" to "or".	Corrected
7	3.36	RS	e		"...while in motion" is ambiguous. In motion relative to what? (Relative to the Sun, all objects on Earth are in motion!)	Clarify the term.	Declined - no clairification needed.
8	3.41	RS	e			Delete "integrated".	Changed as requested.
9	3.8	RS	e		"...address that specifies all stations." is ambiguous. Is this all stations in a BSS? an ESS? and Internetwork? The Universe?	Clarify the scope of the term "all stations".	Request declined.
10	5.2, etc.	RS	E		In this section, and many others, definitions are repeated. Besides the issue of redundancy, some of the "repeated" definitions are NOT THE SAME as that given in Clause 3. Examples of this include the definitions of Wireless Medium, Coordination Functions, Basic Service Set, and many others.	Delete all of the repeated definitions, in all sections.	Editorial request accepted.
11	5.2.3	RS	e		The figure is unreadable in low-resolution black-and-white.	Eliminate Figure 4, or find a way to reproduce it such that it is meaningful to the reader.	Declined - the figure is anticipated to be fine in the final printed version of the document.

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12	5.2.3	RS	e		The caption for Figure 5 is not on the same page as the figure.	Fix pagination.	Corrected.
13	5.2.4	RS	e		A non-802.11 LAN may not necessarily be "wired" (there are other wireless LANs).	On line 12, delete the word "wired".	Changed.
14	5.2.4	RS	E		Bridges do NOT implement repeater functionality, as defined by ISO or IEEE.	On page 20, lines 4-7, eliminate reference to repeater functionality.	Wording corrected/improved.
15	5.3	RS	e			On line 27, change "802.x" to "802".	Changed.
16	5.3.3	RS	e		The third paragraph implies that 802.11 uses Locally Administered Addresses.	Clarify the use of the term "localized".	Language Corrected - the use of the overloaded term "localized" was removed.
17	5.3.3	RS	T	Y	Line 12-13 state that the 802.11 address space is unique within the 802 address space. This is simply not true. There is no reserved, unique space for 802.11. There is no way to differentiate an 802.11 address from any other 802 address.	Delete this statement.	Corrected - was an editorial wording error in the sentence. See revised wording in draft 6.1.
18	5.4.3.2 , 5.4.3.3	RS	e			The definitions of Deauthentication and Privacy should be moved to the Definitions clause (they are not there, unlike other instances of this style).	Corrected.
19	5.5	RS	t	Y	In line 21, "...some services shall be completed..." is a vague conformance requirement. Which services must be completed for conformance?	Eliminate or reword this requirement.	Language corrected, use of "shall" eliminated - please see draft 6.1.
20	5.7.1	RS	t	Y	In line 3, "...shall be handled by..." is a meaningless conformance requirement. How is this tested? How can it be observed?	Eliminate this requirement	Editorial correction - the 5.7.1 text with the requirement was deleted. The correct conformance requirements were already covered in clause 9.

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21	5.7.7	RS	t	Y	The use of the Broadcast Address is unnecessary and imposes a resource burden on non-Authenticated stations.	Define a multicast address for deauthentication, and specify its use. The use of the Broadcast Address should be avoided.	Resolution of comment accepted by voter after discussion. 802.11 frames provide more information for message filtering than is present in (for example) 802.3 frames. The scope of the broadcast management frames in question are only within a BSS, not outside the BSS. All stations within the BSS need to process these frames anyhow. Therefore, there is less burden than fiirst thought. The use of a multicast address, would increase the implementation burden as it would require every station to implement a specific multicast address for the purpose - whereas the broadcast processing ability is already required.
22	6.1.3	RS	T	Y	There is a contradictory set of requirements in this subclause. Page 39, line 3-5 states that DS implementations may reorder MSDUs, and that therefore the MAC cannot guarantee the ordering invariant. The next line (line 6) states that the DS must meet the requirements of IS 15802, which does NOT allow such reordering. Hence the subclause is now self-contradictory.	Eliminate the allowance for frame reordering by the DS. The requirement of ISO 15802 is the only one appropriate here.	Clause corrected - the extra editorial language was deleted and only the 15802 requirement remains.

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23	7.1.2, 7.1.3.1, 7.1.3.4, 7.2.1, 7.3.1.5, 7.3.1.6, 7.3.1.7, 7.3.1.8, 7.3.1.9, etc.	RS	T	Y	The draft states (correctly) that octets are passed to the MAC across the service interface. Additionally, it states (correctly) the order of bits within an octet when transmitted on the LAN. However, the draft does not make any statement about the order of octets in fields comprising multiple octets. Worse, in 7.1.3.1 (and many other places) bit ordering is shown for multi-octet fields with numbering relative to the multiple octets (e.g., 0-15, rather than 0-7). No specification is provided for the bit order for fields longer than a single octet, making it ambiguous as to the order of octets passed across the service interface.	The draft must be consistent in its representation of fields. All fields should be specified as a sequence of octets (not as 16 bits or 48 bits, since this is not reflected in the service interface). Specify all bit positions relative to the octet that they are in (i.e., 0-7 only). For multi-octet fields, specify the order in which the octets are transmitted.	In an effort to consider all issues brought to the working group, the group has looked at the issue described and determined that there is no need for technical change, some editorial work was done to further insure there is no inconsistency or ambiguity in the draft. Further, none of the clauses cited contained any technical change re bit/frame/octet ordering in draft 5.3 (as compared to Draft 5.0). for the recirculation ballot. The committee decided to consider the request on its merits (even though it is technically not a valid re-circulation ballot comment) and further clairified the prose in an effort to finally eliminate any possible misinterpretation.
24	7.1.3.4.1	RS	t	N	It is not desirable to always start the sequence number counter at zero. A device that crashes and reboots could start sending frames with the same sequence numbers as frames that are in the network from its previous "incarnation" (pre-crash), making them indistinguishable. This is especially important with DS/ESS systems incurring long delay in frame delivery. (This is a similar problem to the setting of the packet ID field in IP.)	Recommend that devices use a random number as the initial value for the sequence number.	Declined - Two random numbers are as likely to be the same as a random number (e.g the previous sequence number) is to be zero.

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25	8.1	RS	t	Y	Line 10 contradicts line 11. First, it states that "...an authentication exchange shall ONLY be initiated by a STA in an infrastructure BSS...", then it states (in contradiction), that "...authentication MAY be used between two stations in an independent BSS.".	Eliminate the contradiction.	Language corrected, the contradiction has been corrected - please see draft 6.1.
26	9.1.2	RS	t	Y	This clause contains meaningless conformance requirements. "This optional access method shall be implemented ON TOP OF the distributed coordination function". [Emphasis mine], then "The point coordination function shall be BUILT UP FROM the distributed coordination function...". The conformance requirement uses undefined slang, and is unobservable and untestable. What does it mean to implement something "on top of" something else? Must I stack the PC boards in my system such that the access method board is on top of the coordination function board?	Eliminate these requirements.	Editorially corrected - the colloquial language was deleted.
27	9.2.4	RS	t	N	The requirement that the random number be "pseudo-random" is unnecessary. There is no reason why someone cannot use a "truly random" rather than a pseudo-random number.	Delete the word "pseudo".	Suggestion considered but change declined as there is really little difference between pseudo random and random.
28	Abstr	RS	e			On p ii, line 5, change "will contain" to "contains".	Changed
29	Intro	RS	e			On p iii, line 3, change "foreword" to "introduction".	Changed

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1	Declined Comment #1	GOT			APPROVE WITH COMMENT (with very significant reservations) It seems that this issue relates to adding capabilility and complexity to the standard for the basis of mobility. I assume that mobility implies the ability to shift operation seamlessly between "local areas". This is beyond the authorized scope of the PAR as quoted in 1.1. Creeping project enlargement is the enemy of good standards. Standards projects should limit their work to the authorized scope of their projects or revise their PARs.		Comments considered. No change requested or made. 802.11 provides mobility between BSSs, which in aggregate provide local area coverage.
2	Declined Comment #3	GOT			APPROVE WITH COMMENT (with very significant reservations) The practice and implementation of PICs pro forma in various standards varies considerably. I am not willing to mandante the practice of 802.3 onto other groups. However it has been our experience that it is very useful to have a practice as outlined by Mr. Siefert's comment. It is useful for those developing the standard to keep their efforts focussed on only defining the standard in ways that can be reasonably measured (at least on a development basis if not on a finished product basis). It is also useful for large customers who are putting out bids for product within a product space where there are a significant number of possible configurations.		Comments considered. The 802.11 PICs pro forma is considered by 802.11 to be a very useful format that will fully satisfy the concerns expressed. As a result of changes made between draft 5.0 and 5.3, and the re-circulation ballot, the original comment has been resolved to the satisfaction of the ballot reviewer.

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3	Declined Comment #4	GOT		Y	DISAPPROVE I fully support Mr. Siefert's comments on this. It is not acceptable in my concept of standards work to embrace a standards methodology that nurtures ambiguity and then say that the appropriate method for resolving such abiguities is to go back to the standards committee for an interpretation request. This is lengthy process, the experts may have dispersed and the production lines are spitting out product that may not interoperate while the slow standards process is working out the question. Further, I am highly disturbed by the language which opens C.1, to wit: "This formal description attempts to define the behavior of 802.11 MAC entities with sufficient precision that independent implementations are likely to interoperate." This isn't good enough for me. There needs to be a precedence statement as to which dominates, the text or the FDL. My strong preference is the FDL. The work needs to continue on the standard until there is every confidence that independent implementations WILL interoperate. Just "likely" isn't good enough for me.		The sentence in C.1 commented on has been changed to: "This formal description defines the behavior of the 802.11 MAC entities.". The committee wishes to assure the reviewer that the group has never embraced methods which nurture ambiguity. Rather, the normative portions of the document have been thoroughly reviewed multiple times and we have resolved all issues brought to the groups attention. After again reviewing the issue of one clause taking precedence over another, the group has decided to maintain its stated position (as confirmed by the 98% approval from the re-circulation ballot results).

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4	Declined Comment #5	GOT			APPROVE WITH COMMENT It appears to me that a Managemant Entity is required for operation. It is not clear to me whether interoperable managment is a requirement for interoperation. If it is not then I accept the response of the group. It appears from the very limited scope and purpose of this project it would be acceptable to return each unit to a base station for any configuration requirement. If the scope is enlarged to encompass mobility then it is not clear that this assumption is still reasonable.		Comment considered. In the groups view, the actions of a management entity have been sufficiently specified for Station interoperability. As a result of changes made between draft 5.0 and 5.3, and the re-circulation ballot, the original comment has been resolved to the satisfaction of the ballot reviewer.
1	6.2.1.3	DEC	e		Page 42 - line 31 and 32 are duplication of lines 29 and 30	Delete lines 31 and 32	Corrected - lines are no longer duplicated.
2	9.0	DEC	e		Title: "Sub-layer" is not a hyphenated word	Change "Sub-layer" into "sublayer"	Corrected.

Here are the remaining No comments on the original Ballot from Rich Seifert

| 1.2, 5.1.1.4, 5.2, 5.4.2.1, etc. | RS | T | Y | The fact that high-layer applications may desire the ability to move within or among wireless LANs does NOT imply the requirement, as stated in 5.1.1.4, that this mobility must be provided within the MAC sublayer. In fact, 802.11 does not currently provide this mobility service (see discussion of DS and ESS below). Mobility is best relegated to higher-layer protocols (such as Network). 802.11 should provide the appropriate service interfaces (e.g., allowing a MAC client or management entity to determine the current associations of an AP) that allow higher-layer protocols to implement mobility, but not to attempt to implement it within the MAC. There is no need to "reinvent" the entire ISO protocol stack within the MAC, just because it's wireless. | Eliminate mobility as a requirement of, and function provided by 802.11. Include a paragraph in the Scope section identifying mobility as a higher-layer function that can be provided among 802.11 LANs. | The 802.11 committee regrets that we could not come to agreement with the reviewer. The position of the group on this issue remains as stated at the beginning of the re-circulation ballot. |
| 5.3, | RS | T | Y | There is no specification provided for the DS; | Eliminate the concept of DS and | The 802.11 committee regrets that we |

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5.4.2.2, etc.					neither a specific implementation nor a set of service interfaces and invariants that ensure proper MAC operation across the ESS. Since 802.11 depends on the DS to provide mobility and ESS coverage, it is clear that this standard currently does not provide sufficient information to build an interoperable, conformant ESS. Without conformance requirements, DS's and ESS's become proprietary entities. In addition, the inclusion of an "unspecified" DS makes the delay as seen at the LLC service interface unbounded and uncontrolled. LAN MAC clients expect a low delay; the inclusion of an arbitrary internetwork (including possible WAN links) invalidates any assumptions about delay that are typically made by LAN clients. IEEE 802.1G allows WAN links for Remote Bridges, but it puts an upper bound on their number and delay, and makes this information available to a management entity.	ESS from the standard at this time, and note that this is "under study" or "work-in-progress". When specifications are available that allow interoperable, conformant implementations to be built, revise the standard to include these new specifications. Eliminate all discussion of mobility as an 802.11-provided service.	could not come to agreement with the reviewer. The position of the group on this issue remains as stated at the beginning of the re-circulation ballot.
9	RS		T	Y	802.11 specifies an extremely complex MAC in English prose. This is a deviation from all other 802 standards, and unacceptable for a number of reasons: (1) This standard must be implemented by people unfamiliar with many of the slang terms used by the writers and left undefined, e.g., "transmit again immediately" (How soon is immediately?), or "shall be implemented on top of the DCF" (What does this mean for conformance?), or "shall wake-up" (undefined slang). (2) This standard must be implementable by non-native English speakers. Having the normative requirements in English prose makes this virtually impossible.	(1) Make the English prose description of the MAC (and MAC Management) *informative*, rather than normative. Remove all "shall" statements from the descriptions. (2) Provide a normative, formalized presentation of the MAC (and MAC Management). This formalization can use state-machine notation, Pascal, C, Verilog or other code, or any method that is truly unambiguous.	The 802.11 committee regrets that we could not come to agreement with the reviewer. The position of the group on this issue remains as stated at the beginning of the re-circulation ballot.

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					(3) English prose (or any human language, for that matter) is ambiguous. There is not a 1:1 correspondence between *words* and *meaning*; the same words can mean different things depending on the listener's background. (This is a major reason why we have wars and courts of law; if language were unambiguous, we would have no arguments over the meaning of what was said!) (4) In particular, the 802.11 MAC is extremely complex, perhaps the most complex MAC yet devised within 802. No other 802 MAC standard allows the use of prose for normative specification.		
5.5, etc.	RS	T	Y	There are many places in this clause (and others) where what are essentially MAC and MAC management specifications are buried in the service descriptions. These have associated "shall" statements, which require PICS entries. (For example, on p. 24, bottom: "If STA A receives a class 2 frame . . .") All conformance requirements should be in the same section (MAC and/or MAC management) and not strewn through service descriptions and other clauses. All "shall" statements shall be grouped and easy to find and recognize (sic!).	Put all conformance requirement statements in the clause appropriate to that requirement. There should be no "conformance" requirements in a clause on service specifications, since these are not required to be exposed interfaces.	The 802.11 committee regrets that we could not come to agreement with the reviewer. The position of the group on this issue remains as stated at the beginning of the re-circulation ballot.
5.6	RS	t	Y	There is no need to require a device in an IBSS to be able to associate.	Eliminate the requirement.	The 802.11 committee regrets that we could not come to agreement with the reviewer. The position of the group on this issue remains as stated at the beginning of the re-circulation ballot.
6.1.3	RS	T	Y	This section states that the DS may reorder MSDUs (even within a unicast stream). This is unacceptable at the MAC service interface, and is	Either specify the DS in sufficient detail to ensure correctness, conformance, and	The Contradiction has been removed. Draft 6.1 has been corrected.

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					a prime example of why (1) The DS, if allowed, must have its requirements specified, and (2) IP is unsuitable as a DS mechanism for an IEEE 802 MAC. This section essentially violates ISO 15802/10039, as it states that 802.11 does not guarantee even the unicast ordering invariant at the MAC service interface of a conformant implementation. If you are providing a IEEE MAC-layer service, you must specify whatever is necessary to provide such a service at the LLC interface. This section allows an 802.11 conformant interface that violates IEEE 802 Functional Requirements.	interoperability, or eliminate the DS concept and all references to it in 802.11.	

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