

All	BeLANGER	E		A common state machine format should be used through the document.
	Jeanine Valadez	E Approve	Although I have voted in favor of this ballot, I observe that there are several areas where the standard currently falls short of being complete, or may in fact embody a less-than-"implementable" LAN protocol. Nonetheless, I vote yes in order to encourage collaborative industry efforts to achieve conformance and interoperability. I believe it is only through such efforts that the standard will be completed and refined.	
1.0	David Bagby	T	<p>Mechanics of my ballot comments:</p> <p>This paragraph is an example of a ballot comment. Explanatory comments are inserted into the document in this style paragraph, resulting document changes were simply done as revised text.</p> <p>Shaded and boxed paragraphs are not intended to be included in a revised draft - they are merely explanations for the actual changes they describe.</p> <p>Annotation marks are used to group the various sets of changes. Each change is marked by an annotation mark, the contents of the mark tell which category of comment the revision belongs to.</p> <p>It is required that all changes from a set are adopted to avoid inconsistency.</p> <p>Editorial changes are explicitly marked "editorial" in the annotation. All other comments are to be classified as <u>technical</u> in nature.</p> <p>The easiest way to view my comments is to open the annotaion window (view, anotations) and use it to page thru the document.</p> <p>David Bagby</p>	See imbeded comments and annotations

<p>1.0</p>	<p>David Bagby continuation</p>	<p>T</p>	<p>General ballot comments:</p> <p>The following are major / general comments which impact more than a couple of paragraphs of the draft, and/or are motivation for multiple separate changes.</p> <p><u>1) Impacts of other reviewer's comments:</u></p> <p>I reject the wording of the dialog boxes in the Ballot macro. I specifically DO NOT accept the concept that accepting my recommended changes automatically changes my "NO" vote to a "Yes". The act of clicking the dialog button to continue the ballot macros can in no way be considered acceptance of this sitpulation displayed when the macros starts. This approach assumes that any changes resulting from other reviewers are automatically acceptable to me - that is an assumption I will not make.</p> <p>Automatic vote changing is not a requirement of IEEE 802 and I stongly object to this approach. If attempts to enforce this approach are made, 802.11 members should know that the matter will be taken up with the 802 executive committee directly (some of whom I already know will not support this rule).</p> <p>Accordingly, my first technical comment is that any and all text which I have not commented on and suggested chages for, must remain exactly as written in draft D1 as a necessary technical prerequisite to any consideration I might give to altering my NO vote to a YES vote.</p> <p><u>2) Multiple vendor interoperability is severly threatened:</u></p> <p>The primary propose of a standard is to promote market growth via multiple vendor interoperability. Those aspects of the draft which threaten, decrease or prevent multiple vendor interoperability are pointed out and must be corrected before I would alter my vote.</p> <p><u>3) Pragmatic interoperability test.</u></p> <p>No matter how much the cmtee tries, it will never think of / find all the subtle ways that problems of interoperability could crop up in actual implementations. Therefore, I recommend that we take the approach of the IETF and not forward the draft to sponsor ballot until, for the MAC and each PHY specified, there are at least two implementations which interoperate. Until multiple vendor interoperability can be shown by this approach or another one at least as compelling, I shall not vote to forward the draft to sponsor ballot.</p> <p><u>4) Satisfaction of PAR requirements:</u></p> <p>The D1 draft significantly fails to meet key requirements of the PAR. I have commented on the areas that are deficient. They must be corrected before sponsor ballot.</p>	
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1.0	David Bagby continuation	T	<p><u>5) Draft is overly complex:</u></p> <p>The D1 draft suffers from an excess of complexity. This complexity in many cases adds little if any useful functionality and contributes significant to the risk that multiple vendor products will not interoperate. I have identified several areas where slight alterations in functionality would result in large decreases in complexity and hence increased standard adoption, easier conformance and lower cost implementations. These changes would have to be adopted before I would alter my vote.</p> <p><u>6) Document quality:</u></p> <p>The draft is of poor quality as a standard document. The draft must accomplish the primary task of communicating the concepts of 802.11 in sufficient detail (to a reader unfamiliar with the subject) to allow an 802.11 compliant device to be implemented. The document clearly reflects the fact that different groups wrote different sections independently. A significant amount of document integration and style harmonization must be accomplished (to bring the document to a quality level on par with other 802 standards) before being sent to sponsor ballot.</p> <p>It is obviously not possible for any single reviewer to provide the text necessary to accomplish this without having done the job of the editors. When the document is perceived by 802.11 members to be sufficiently polished for public review then this reviewer shall withdraw this reason for his "no" vote.</p> <p>Examples: update x.xx section numbers. Remove all editors notes from doc before draft is forwarded to sponsor ballot as it would be inappropriate for these working notes to make it outside 802.11. Section references need to become automatic so that a manual check of refernces will be unnecessary.</p> <p><u>7) Classification of comments.</u></p> <p>All comments not specifically marked as editorial are to be considered prerequisite to acceptance of a draft for forwarding to sponsor ballot. Editorial comments should also be accepted, though I would accept conflicting editorial changes which I consider to improve on my editing suggestions.</p> <p>[DB1]</p>	
<GLOBAL> first instance is in 1.2, entry for "STATION_BASIC_RATE"	Fischer, Mike.	E	<p>The use of "it" in technical prose is almost always ambiguous. During the next update pass the editors should do a global search for "it" and reword most such instances to make the referent clear. In the case of the "it" in the 2nd line of the definition of STATION_BASIC_RATE, the ambiguity is whether the referent of "it" is the value, the station's usage of the value, or the transmission.</p>	clarity
??	Lewis	T	<p>Need to add a section address the health and safety issues associated with wireless transmissions. This is referenced in the DS PHY, but not in the FH PHY.</p>	<p>This issue is of such public concern and contention, a separate section needs to be added to address the power levels used in 802.11 and the relationship to ANSI C95.1-1991</p>

??	Lewis	T	Need to directly address mechanisms for roaming and handoff across BSS's in an ESS	The 802.11 standard needs to address the issue of roaming terminals. Quote section 1.1 "... as well as the aspects of station mobility (transition) within those networks. . .", and section 2.1.1.3 "... requirements of 802.11 is to handle mobile. . ." and section 2.1.1.4 "... requires that 802.11 network handle station mobility within the MAC . . ." However, there is no direct mention of roaming and handoff methodology, algorithms, timing, or error recovery. Reassociation provides the enabler, but without a detailed roaming algorithm it is impossible to determine if the messages, fields, states, and define timers and timings are sufficient to provide the roaming capabilities required in an 802.11 system. Since roaming functionality was included in the PAR, the market will expect the interoperability promised by 802.11 to include interoperable roaming algorithms, this is not currently the case.
all	C. Heide	e	fix inconsistent frame "names"	the frame types and subtypes defined in section 4 are not used throughout the document. For instance there are many references to request and response frames, and there are no such things. I recommend using "type:subtype", for example "control:ack" or "management:association_request".
ALL	David Bagby	N/A	Note to reviewers: I suggest that you look at my comments by opening the revised draft file submitted with the ballot. Formatting has been lost when pasting from the draft to the ballot table - autonums etc no longer show the correct values. This is all correct in the actual review file - editors, you will find your job easier if you grab text from that file rather than this table. This file is not to be considered my official ballot comments - it is provided solely for the convenience of the members.  Because of the weird things that happen when pasting between the actual review document and this table, some alterations appear inevitable. If in doubt, see official file returned to 802.11 Chair with the ballot. Also note that revision marks from the reviewed doc are lost when pasting into the table - I have tried to capture all the altered lines but the info is lost due to the use of a word table for the ballot. Reader beware!	See imbedded comments and annotations
All PHYs and Convergent Layer definition	Moyers	T	Parameters inconsistent and totally inadequate definition: Re-edit / harmonize to remove inconsistencies and make interface correct.	Remove confusion and make adequate definitions
Appendix I	Bob O'Hara	E	delete	
Foreward	Bob O'Hara	E	Delete note on page ii	This is no longer a working document
Foreward	Bob O'Hara	E	Add list of committee members, identify working group chairs	
general	Greg Smith		Fundamental sections with "TBD" should not be accepted in the standard.  Sections should be defined as optional or compulsory i.e. TBS, AP capability, Power saving. Furthermore, any compulsory requirement within an optional section must be highlighted.	

<p>General</p>	<p>Rypinski</p>	<p>I DISAPPROVE the IEEE P802.11 proposed draft standard P802.11/D1 to be forwarded for sponsor ballot.</p> <p><b>X</b> Do not approve for the reasons given below</p> <p>Signature: _____ Date: January 18, 1995</p> <p style="text-align: center;">Chandos A. Rypinski</p> <p>GENERAL REASON</p> <p>The offered document is seriously incomplete. Therefore a NO vote is mandatory. If it were completed along present lines, my vote would still be NO, for the substantive reasons addressed later below.</p> <p>WHAT THE PRESENT SYSTEM WILL DO</p> <p>For small (&lt;12 stations) isolated groups, the performance can be what has been found from experiments. As the size of that group increases, the path failure problems will be proportional to N! (factorial). Since the size of the group which can cause deferral is much greater than that which can have N! satisfactory paths, the result will be a fixed limit on total capacity which is at best divided over the number of stations within interference range. In this situation, the number of failed first tries will be an increasing proportion of the carried traffic; and the available capacity will be diminished by the channel time used by unsuccessful transfers. The system will probably crash past a critical load when retry traffic increases while the available capacity diminishes. This phenomena may not be visible in a small model with few stations where the real queue is not in the air but at the input to the radio user stations.</p> <p>WHAT THE PRESENT SYSTEM WILL !!NOT!! DO</p> <p>DS PHY: There is no way to get continuous area coverage without capacity division by a ratio that will reduce the capacity available to one cluster to about 1 to 4% of the standalone group capacity. This assumes peer-to-peer operation in which all stations have like antennas and transmitters. (A major improvement would result from all stations talking through a store-and-forward repeater with a superior antenna.) This will ultimately be mandatory when diversity is used, and it should be in the standard if it is required.</p> <p>FH PHY: This PHY cannot work any better than it works with the channel fixed rather than hopping. It will not work accurately enough for LAN services without interference, and it will go down hill from there with interference.</p> <p>It is not possible to get reliable performance form an unconditioned binary transmission path. The failures are not random but more like "chaos." The errors result from non-apparent physical causes--interference, man-made noise and largely from time dispersion. Contrary to what is often believed, the error rate is not a function of signal strength after that level is sufficient. This is a situation where increasing transmitter power doesn't make much difference.</p> <p>This PHY lost its last chance when it rejected FEC, and has nothing included about diversity. If indeed some of these things are done by particular suppliers, I believe that interworking capability will be lost.</p>	
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<p>General</p>	<p>Rypinski continuation</p>	<p>The notion that if one frequency is not satisfactory, the next will be better is sometimes true. However, when transfer delay is increased by at least one hop period, it is arguable as to whether the resulting service is useful. If there are a large enough number of users so that the channelization plan is well occupied and to cause a real possibility of interference between independently managed hopping plans, this remedy will be found wanting. The only advantage in large scale systems from frequency hopping is that it is legal.</p> <p>The provision of a number of channels will not solve interference problems for data any more than it did for "citizen's band" in the '70s. What will happen is that there will be no predictable interoperability for stations moving from one coverage to another. Intelligent and informed users may be able to originate from multiple coverages, but there is no plan for making them reachable. The minimum adequate plan for a channelized system is to designate a "common calling channel" and to negotiate working channels for transfer of traffic on a session basis.</p> <p>For this purpose integration of MAC and PHY is essential. A MAC for an area coverage channelized system is inevitably quite different in detail from a time division system.</p> <p>EXAMPLE MAC PROBLEMS</p> <p>Most of my objections have been offered previously, and before that alternative proposals. Since the group has chosen to go a different direction, I have no hope that it will change. Accordingly, I am reluctant to discuss further what should be done in the alternative, or to spend the effort of a complete analysis. My advice is available if invited. Therefore, only one of a large number of objections is offered as an example to justify a NO vote.</p> <p>5.3 Point Coordination Function (PCF)</p> <p>(para 2) "The use of the PCF access method may be restricted to certain PHY types. The basic restriction is that a PCF cannot overlap with another PCF on the same channel in a manner that results in destructive interference with frame transfer, This is because contention between overlapping PCF's is not addressed by this protocol."</p> <p>Apparently, the design assumes that the use channels created in the FH PHY are going to organize themselves to produce non-interfering operation. Possibly, the DS PHY is excused from making use of this part of the protocol. This paragraph seems to say that this function will work only in environments that are probable only when very few equipments are in use. I think that this caveat makes the result non-responsive to the functional requirement.</p> <p>This disclaimer is in part a consequence of reliance upon the CCA (clear channel assessment) function to indicate silence (absence of signal) for various measured amounts of time. Stations with higher priority transmissions have smaller waiting times for the absence of signal. It is also a consequence of the limitations of an ad hoc channel manager over any other system close enough to interfere.</p>	
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General	Rypinski continuation		<p>ONE WAY TO GET A STANDARD FROM THE PRESENT POSITION</p> <p>A reasonable proposal for this frequency band is to delete from the present plan most features relative to CCA based transmit deferral and the PCF leaving only a basic randomized back-off deferral becoming an ALOHA access method when "busy-lockout" is observed. The resulting capacity and service should be fairly described omitting any reference to voice, video or connection-type services. Refrain from claiming services that can't be delivered, and design that which can be made to work even if it does not include the marketing "buzz word" services.</p> <p>This step would reduce the thickness of the Standard document by about one-third.</p> <p>With the channelization of the FH PHY, this would provide a "citizen's band" service for portable computers with usefulness for ad hoc groups and little more.</p> <p>GENERAL OBSERVATION</p> <p>The major fault is trying to design a distributed system which has all of the functionalities of a hierarchical system. The full coverage/service system should have been designed first, and then the ad hoc and peer-to-peer functions obtained by subsetting. The process of starting with the easiest functionality first, and then upward modifying it to a serious capability has never worked and this is a further unnecessary instance.</p> <p>Cordially,</p> <p>Chandos A. Rypinski</p>	
General	Eastman	? Approve		The sheer number of Physical Layers presented with this standard serves to dilute the effectiveness in the marketplace. I do not believe that the "Broad Market Potential" can be satisfied with the vast array of presented Physical Layers.
General	O'Neill	?		Performance has not been characterized sufficiently to determine whether implementations would perform usefully in certain key situations. The situation of primary concern to LXE is the infrastructure case in very cluttered RF environments, such as warehouses and manufacturing plants. Hidden nodes coupled with high levels of jamming signals may have a very negative impact on system throughput in a CSMA scheme. More work needs to be done to show that performance will adequately meet application requirements in such situations. Many of the requirements levied on the 802.11 standard group are directed at new applications and new markets. Mature applications and markets for RF LANs do, however, exist and are serviced by healthy, successful RF system providers. A very bad outcome for existing providers would be a poor standard (poor performance) that effectively imposed on the marketplace a reduction in the quality of RF solutions.
General	France	? Approve		I will volunteer to help research/resolve any technical comments as required
General	Glen Sherwood	E	Add an index to the document.	There isn't one, and there should be.
General	Rick White	E	Drawings in Section 2 need to be improved from a quality standpoint.	
General	Bill Huhn	T	All editors comments must be resolved and removed from the draft.	

General	Lee Hamilton	T	Resolve all editors comments throughout the document.	A draft can not have editor's comments requesting information that is <b>required</b> for the draft.
General	M. Rothenberg	T	Further simulations of the MAC Protocol must be performed.	Not enough simulations were performed, specially on the Hidden Stations Behavior and the contribution of the RTS/CTS exchanges.
General	Mark Demange	t	Draft is unclear in it's definition of allowing direct communications between stations in an AP based configuration. This direct communications mechanism needs to be defined clearly to prevent out of sequence MSDU conditions.	Without a properly defined mechanism for direct station to station communications there is a possibility of delivering MSDUs to a station out of sequence. Example - STA1 forwards a stream of MSDUs to STA2. In the middle of the stream it decides to communicate directly. Meanwhile an earlier MSDU is buffered at the AP and is scheduled for delivery to STA2. When this MSDU is delivered it will appear at the destination out of sequence. Assuming that direct station communications are allowed (they need to be for low delay service) the mechanism needs to be defined to transition into and out of direct station communications to and from indirect (via AP) communications.
General	Mark Demange	t	Remove editors comments throughout the draft.	Commentary is inappropriate for a standard. Many areas pointed out by the editors are technical in nature and undefined.
General	N. Silberman	T	Operation in the 2.4 GHz is interference limited. The standard does not provide for interference management between adjacent cells and between adjacent similar networks.	There are at least two types of interference sources a wireless LAN has to deal with: Interference between adjacent BSSs, Interference from adjacent 802.11 WLANs. In addition to that there is interference from dissimilar sources such as MW ovens and other devices sharing the band. Without interference management adjacent contiguous coverage areas become part of a "big BSS" dominated by the same (common) collision avoidance mechanism therefore slowing down overall network throughput to unacceptable levels.
General	P. Brenner	T	Perform Simulations	Not Enough simulations were performed
General	Wim Diepstraten	T	The MAC standers should provide a minimum mechanism to support Transmit Power Control functionality, for the purpose of reducing the nominal power level needed to send to a specific destination. The minimum needed is a field in the Ack frame that includes the RSSI indication of the frame that is being Acknowledged. PHY's that do allow support for dynamic Tx-Power Control should provide the following function: - Control the Tx-power level on a per frame basis is steps defined by the PHY. - Control the CCA-threshold on a per frame basis by the MAC. A CCA threshold rule should be adapted that allows the CCA threshold to increase (less sensitive) by x*n dB for every dB that the Tx-power level is reduced from its nominal level, where x is a TBD number between 0 and 1 (close to 1).	Co-channel interference will be the main limiting factor for the medium sharing capacity of a radio channel. It is important that a wireless standard includes minimum provisions to allow future extension with functions that can optimize for generating minimum interference. The proposed minimum provisions allow this kind of optimization in a matter that is compatible with the current standard. The other functions needed can reside in the transmitter, and its utilization is implementation specific.
General	Wim Diepstraten	T	There is currently no MAC management mechanism specified with which a MAC can determine which of the probed AP's do provide the best reassociation candidate. The standard should specify a required PHY function/service that provides an indication of relative link quality like RSSI and / or Signal Quality (SQ).	When the MAC does specify the requirement of such a PHY service, then at least a mechanism based on actual link data can always be implemented. Such an implementation, and the algorithm that determines when to reassociate can be PHY specific and implementation specific, and should not be specified as part of this standard.



General	Buaas		<p>I do not believe that what is currently proposed is either technically sound or commercially desirable. The FH PHY, while barely meeting the 1 MB minimum data rate required by 802, because of the many compromises made to shoehorn a simple technology into available (political/regulatory) restrictions, the resulting throughput will be no better than a few hundred KBPS, and then only in non-interference-limited situations. This is unacceptable. Chandos has eloquently contributed paper after paper about the need for a design that maximizes throughput per hectare, and his comments have long gone unheeded. It's pretty obvious that the major press is to "get something to market" regardless of its quality. I know that the people coming to the meetings from the big companies have their jobs on the line-- what is happening is the consequence, and I cannot be a party. I know less about the MAC, but I do object to the place it "comes from"... that its major thrust is "unsupervised operation" based mostly on CSMA. While some concessions have been made to existing-infrastructure systems, the emphasis remains, and I think it is wrong.</p> <p>Much more work is needed, yet I doubt that the Executive Committee will permit it. I don't know what to suggest.</p> <p>What I saw happen in November at Incline Village on the encryption issue was a travesty. I believe that I explained satisfactorily that there was little I could do to contribute. Perhaps you saw the article on the front page of EE Times several weeks that the Government here is still considering an indictment of Zimmerman, for the PGP he wrote that got out of the country.</p> <p>I'm not willing to subject myself to that kind of harassment.</p> <p>I've done a great deal of soul-searching about what I've said here; I hope you understand.</p>	<p>I have a major philosophical objection to what has happened in this standards effort, so I am voting "NO" but without specific comment, other than the following (which I do not think can be rectified by editing):</p>
MAC (various) para and CCA assessment time	Moyers	T	SIFS time definition not clear and wrong & contention window hold-off timing boundary	Create accurate timing definition & figures, also needs "assumed" (baseline) air medium propagation timing. Correct timing and separate PHY from MAC timings.
MAC General	Wim Diepstraten	T	The current draft contains a number of sections that are not yet specified. These sections need to be completed.	
MAC in numerous pages	Moyers	T	Distributed Time-bounded Services. Eliminate service from standard	Won't work
MIBs (all)	Moyers	T	Total including timing. Needs complete rewrite for common parameters and timing audit	No common declarations for same parameters among PHYs
New	Sonnenberg	Tech	Add a new section, per Appendix A of this ballot.	Users will assume that an 802.11 product will talk to another 802.11 product. This is not always true. IR won't talk to DS, DS won't talk to FH... To make certain users understand this, product labeling should be in the standard. (Like it is done in 802.3 section 15.7). RF power should be listed because it affects interoperability, and as a safety issue.
PHY General	Wim Diepstraten	T	All PHY's should specify unambiguously what the specifications are for the PHY dependent MAC access parameters Slot_Time, and SIFS. specifications as should be assumed on the medium. In addition the equations need to be specified, such that the MAC can determine the timing dependency to obtain the SIFS, PIFS and DIFS timing.	It is currently not clear in all the different PHY's what the resulting Slot time and SIFS on the medium is.
throughout document	Fischerma:	E	MA_UNIT_DATA_request	inconsistent use of the term, references include: MA_UNITDATA_request, UNITDATA-request, UNITDATA.request, MA_UNIT_DATA-request, and other variations

throughout document	Fischerma:	T	term "frame" is used to mean any of the control frames (e.g. RTS, CTS, etc) or the DATA frame, or in some cases (such as section 5.1.1.) "frame" is used to refer to the entire set of exchange of RTS, CTS, DATA and ACK. A set of consistent terms should be adopted to avoid confusion - possible terms: use "framelet" for control, management, asynchronous data frames, and use "frame" for entire exchange sequence. Or use "frame" for control, management, asynchronous data types, and use "packet" for entire exchange sequence.	Terminology must be consistent - specific reference to "frame."
Whitening Algorithm Page 257	Moyers	T	Correct Algorithm	See D. Kawaguchi's submission
Whole document	Jim Panian	T	Standardize on a common compression scheme, or set of schemes. This does not preclude the use of non-standardized compression schemes, but allows any pair of 802.11 compliant stations to find a common scheme.  For conformance, support for the common compression scheme must be static (must be implemented). The actual use of the common compression scheme may be dynamic (may not be used on every association).	Why doesn't the draft specify a common compression scheme? Any non-standard compression implementation on top of 802.11 will raise interoperability problems.  Lets assume that the 802.11 standard standardizes a compression scheme "A". Assume now that a first station X supports the schemes A, B and C and that a second station Y supports the schemes A and D. These stations will be able to use the common scheme A although they support other (proprietary) schemes. Another aspect that should be addressed by the standard is how the protocol used by the stations to determine the set of commonly supported compression schemes.
General	Jenkins	T	Recommend splitting the spec into separate applications areas: 1) computer LANs 2) transaction based 3) DTBS and streamlining protocols for each. As far as a common MAC: it is a nice goal, but probably will not succeed. Use commonality as a goal, not a requirement.	The spec has evolved into the "Holy Grail" of WLAN. Recent system bench marks of proprietary offerings from companies (like Proxim, Xircom) with streamlined protocols for computer LAN applications, gave less than satisfactory results. I feel this 802.11 spec proposal tries to cover all applications, (transaction based, time sensitive as well as computer LAN) but will prove to be even less efficient than proprietary solutions. The spec would be a lame duck.

Section	Name	Type	Corrected Text	Rationale
5.1.3	K.C. Chen		Uplink Super frame	No broadcasting shown in Figure 5-3
5.2.5	K.C. Chen		open	Cwmin CW max undefined
5.2.6	K.C. Chen		open	Values of various IFS are not defined and they must be consistent with different PHYs
10.2.2.3	K.C. Chen		The PLCP_BITRATE is a <u>mandatory</u> parameter.	Since we have two (and likely more in the future) rates now, we must specify this parameter as DS-PHY does.
10.3.2.2.1	K.C. Chen		Its valid states are 00 0000 0000 - 11 1111 1111	000h-3FFh is a wrong 12-bit representation and it should be a 10-bit representation for PLW.
10.3.3	K.C. Chen		open	Background for Transmit State Machine and Receive State Machine is too dark to read. (This is only for suggestion and has nothing to do with my vote.)
10.3.3.3.1	K.C. Chen		The PLCP shall pass received data octets to the MAC ... (correctly deleted)	At this point, the data has not run through CRC check. It is not possible to specify correctly received data octets.
10.6	K.C. Chen		1M BPS	1M bits per second rather than 1M bit
10.6.17	K.C. Chen		open	Although the power levels are optional, they must be specified in the standard so that multi-venders system can operate without contradiction.
11.4.7.4	K.C. Chen		Figure 11-10 needs corrected.	Sidelobes should within the mask.
11.4.8.1	K.C. Chen		This BER is specified for 1M BPS DBPSK ...	BER should be specified at the basic service rate.
12.3	K.C. Chen		open	It is suggested that IR PHY define the PMD_SAP. (not a factor to decide my vote)
12.3.2.1	K.C. Chen		Data in Table 12-1 and Table 12-2 should be Gray coded. For example, 00 01 11 10 for 4-PPM.	This can minimize the distance of neighboring signal constellations under ISI and provide advantages for error detection and correction for future speed expansion.
12.3.3.1	K.C. Chen		The peak optical power of an emitted pulse shall be <u>not greater than</u> 2W ...	Emitting power should be defined the upper-limit ONLY for IR PHY.
12.3.3	K.C. Chen		<delete>	Unless this can be well defined without ambiguity, no reason to keep this. We may define a nondirective conformance test in the future. For safety concern, the radiation can be defined a minimum value for decline angle 30 degrees.

General	K.C. Chen		open for suggestions.	All PHYs shall be consistent in some common parameters such as Length and try to be consistent at PMD_SAP.
MAC	K.C. Chen		open for suggestions	Before all numbers are specified, it is not possible to make confident judgements. For example, the values of timers. Any possible contradiction is thus not possible to identify.

Section	Name	Type	Corrected Text	Rationale
All the standard	F.Bauchot	T	<p>The 802.11 standard must specify a compression scheme, or set of schemes. The support of such a scheme (or set of schemes) must be mandatory for 802.11 compliant product to secure interoperability, while taking advantage of the compression scheme.</p> <p>The standard must specify how the compression scheme can be agreed upon by a pair of stations during the association procedure and also must specify which types of MAC frames are eligible for being compressed.</p>	<p>As the available bandwidths provided by the 802.11 PHY layers appear to be limited (at least with respect to other 802.X LAN standards), it is desirable to recover the corresponding throughput limitation by using compression schemes. The 802.11 standard must specify a compression scheme (or set of schemes) in order to ensure interoperability of compliant products when they choose to use compression at association time.</p>
1.1, 2.4.2, 3.2, 5.8	F.Bauchot	T	<p>Describe MAC and PHY procedures as well as the corresponding service primitives which are needed for mobility support.</p> <p>The description of the state machine involving the Association, Reassociation, and Disassociation system services have for instance to be enhanced in order to describe unambiguously how the MAC and PHY layers are involved in the support of mobility.</p> <p>Another aspect which is currently not addressed by the standard is the description of the criteria and of the procedure leading to move from a given access point to another one.</p>	<p>As it is expected that a lot of 802.11 compliant devices will be portable computers and that wireless communications will enable mobile applications, it is highly desirable that the 802.11 standard specifies all the mechanisms and procedures needed for seamless mobility.</p>

2.4.3.1	F.Bauchot	T	<p>The standard must specify an authentication algorithm (or set of algorithms) to be implemented by any compliant product.</p> <p>Any algorithm specified by the standard must be supported by any compliant product (to be part of conformance testing).</p> <p>It will allow any pair of 802.11 compliant product to successfully establish an association, while relying on the the security provided by the specified authentication scheme (even if they individually support other schemes which are not specified by the standard).</p>	<p>As the transmission media belongs to the public domain, it is today well understood that the future users of 802.11 compliant products will be concerned with the access to their network. Authentication algorithms are a good answer to such concerns. As the main (and may be only) goal of a standard is to ensure interoperability of compliant products, the standard must specify a scheme which must be implemented by any compliant product. Any deviation of this rule will translate into interoperability problems, that is exactly what a standard is aimed to avoid..</p>
2.4.3.2	F.Bauchot	T	<p>The standard must specify a privacy algorithm (or set of algorithms) to be implemented by any compliant product. The WEP algorithm which is currently described in the standard is a good candidate, but it must be supported by any compliant product (to be part of conformance testing).</p> <p>It will allow any pair of 802.11 compliant product to successfully establish an association, while asking for privacy algorithm support (even if they individually support other schemes which are not specified by the standard).</p>	<p>As the transmission media belongs to the public domain, it is today well understood that the future users of 802.11 compliant products will be concerned with the confidentiality of the data sent over the air. Privacy algorithms are a good answer to such concerns. As the main (and may be only) goal of a standard is to ensure interoperability of compliant products, the standard must specify a scheme which must be implemented by any compliant product. Any deviation of this rule will translate into interoperability problems, that is exactly what a standard is aimed to avoid..</p>

5.2.13	F.Bauchot	T	The time bounded services, as currently documented in the document are by far not at a level of definition allowing industrial to build interoperable products. These services ask for further work to be architected and adequately documented in the standard document.	The current level of definition of the time bounded services is by far not comparable with the other services described in the standard.
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Section	Name	Type	Corrected Text	Rationale
All MAC chapters	F.Lemaut	T	802.11 MAC layer must standardize on at least one compression scheme, and leave open to the manufacturers the capability to implement any proprietary schemes.	Given the low media speed achieved by the wireless LANs when compared to their wired counterparts, any scheme leading to improved throughput should be offered to increase market acceptance.
5.2.13	F.Lemaut	T	Time-Bounded-Services level of description is not in line with the other parts of the 802.11 draft. Further works are required to reach a consistent level of definition accross all the document.	Additional descriptions are required to allow manufacturers to implement interoperable products featuring Time Bounded Services.