Seq. #	Section number	your ini-tials	Cmnt type E, e, T, t	Part of NO vote	Corrected Text/Comment	Rationale	Disposition/Rebuttal

Section 9 comments from Ballot on Draft Standard D2 (Vic Hayes, Chair, AT&T WCND)

Seq. #	Section number	your ini-tials	Cmnt type E, e, T, t	Part of NO vote	Corrected Text/Comment	Rationale	Disposition/Rebuttal
	9.1 / 9.2	TM	e		section 9.1 describes two function and section 9.2 defines three functions	section 9-1 should be updated with a description of the layer management interface	
	9.2	FMi	E		figure 9–1 does not print correctly on my PostScript printer (from Word 6 on either PC or MAC).	Something is wrong with this diagram, relative to the other reference model diagrams, which do print correctly on the same printer.	
	9.3	**DW**	**T**	**Y**	**Statements should be included that do specify the exact timing relations for the PHY_TxEnd_request, PHY_CCA_indicate and PHY_RXEnd_indicate.**	**These are the important timing boundaries for the MAC, on which it does synchronise the SIFS and Slot timings.**	
	9.3	**DW**	**T**	**Y**	**A primitive is need to allow change of PHY channel. This currently seems part of the PHY_TXStart.request primitive, by the management parameters in the TXVector. It is fully unclear how a channel change can be accomplished without starting a transmission, in which the desired channel is specified.**	**How is a channel change accompished in each PHY.**	
	9.3	**DW**	**T**		**Define a common way for the PLME interface, and its common functions like Awake/Sleep commands, and Channel selection commands.**		
	9.3.1	TM	e		These services are described in an ...		
	9.3.3	TM	e		... to the Physical Layer falls into two ...		
	9.3.4	**KD**	**E**		**Add PHY_TXSTART.confirm, PHY_TXEND.confirm, and PHY_CCARST.confirm.**	**PHY_TXSTART, PHY_TXEND, and PHY_CCARST requests must have separate confirms from the PHY_DATA.confirm.**	
	9.3.4.1	TM	e		~~The following table (table 1)~~ indicates ... change to read Table 9-1 indicates		
	9.3.4.2	FMi	T	N	There needs to be a PHY_TXSTART.confirm defined in this table and described in a subsequent (new) section. This primitive is used by the PLCP transmit function, as	Consistency with PHY operation described in clause 11 and illustrated in Figure 11–8. Provision of a means to	

Seq. #	Section number	your ini-tials	Cmnt type E, e, T, t	Part of NO vote	Corrected Text/Comment	Rationale	Disposition/Rebuttal
					illustrated in Figure 11–8, but never defined. It is recommended that this primitive include a TXERROR parameter to indicate rejection of the transmit request, especially for the FH PHY in cases where the requested length will not fit in the current dwell, but also for requests for unsupported transmit data rates, improper MPDU lengths, or conflicts with static PHY MIB settings (unavilable antenna, etc.)	indicate invalid transmit requests.	
	9.3.4.2	FMi	T	N	There needs to be a PHY_TXEND.confirm defined in this table and described in a subsequent (new) section. This primitive is used by the PLCP transmit function, as illustrated in Figure 11–8, but never defined. It is recommended that this primitive include a TXERROR parameter to indicate failure of the transmit request if there are any conditions which the PHY can detect during the transmision which yield an invalid PHPDU on the medium.	Consistency with PHY operation described in clause 11 and illustrated in Figure 11–8. Provision of a means by which the MAC knows when the physical transmission is over at the air interface (for power management, resumption of monitoring for a reception, etc.).	
	9.3.4.3 9.3.4.4 11.2.2 12.2.6 13	**BJa**	**E**		**The desciption of the service primitives and vector descriptions is not aligned for the different sections. Definition of the primitives and parameters that are common for the different Phy's must appear in section 9, while value definition that are Phy dependant must be defined in the respective sections.**		
	9.3.4.4	**BJa**	**T**	**N**	**Replace 'Value from 0-2047' with 'Phy dependant'**	**The length value listed is for the FH Phy; IR and DS can be different.**	
	9.3.4.4	ZJ	T	N	Add DURATION to table 9-4, defined as a value from 0 to 32767 that goes into both TXVECTOR and RXVECTOR	Duration information should be part of the PLCP header, not the MAC contents of the frame. Since units communicating at lower speeds cannot receive the MAC contents of a frame transmitted at higher speed, but all stations can receive the PLCP header for all frames (in all PHYs), it is logical to move Duration to where everyone in the BSS can receive it (I don't care if it violates layer purity).	

Seq. #	Section number	your ini-tials	Cmnt type E, e, T, t	Part of NO vote	Corrected Text/Comment	Rationale	Disposition/Rebuttal
	9.3.5.1.4	FMi	T	N	The receipt of this primitive by the PHY entity shall~~will~~ cause the PLCP transmit state machine to transmit an octet of data. The time between receipt of this primitive by the PHY entity and the physical transmission of the first bit of the provided octet on the WM shall be the sum of aTx_PLCP_Delay + aTx_RF_Delay. When the PHY entity receives the octet, it shall~~will~~ issue a PHY_DATA.confirm to the MAC sublayer.	The MAC time synchronization function, as well as certain response–related timeouts depend on there being a deterministic delay between the transfer of octets from the MAC Transmit state machine and the appearance of those octets on the WM.	
	9.3.5.2.3	FMi	T	N	The PHY_DATA.indicate shall be~~is~~ generated by a~~ll~~ receiving PHY sublayers entity to transfer the received octet of data to the local MAC entity~~ies in the network as the results of a PHY_DATA.request being issued.~~. The time between receipt of the last bit of the provided octet from the WM and the receipt of this primitive by the MAC entity shall be the sum of aRx_RF_Delay + aRx_PLCP_Delay.	The MAC time synchronization function, as well as certain response–related timeouts depend on there being a deterministic delay between the receipt of octets from the WM and the indication of those octets to the MAC Receive state machine. Also, the existing definition is incorrect, because the PHY_DATA.request is issued at a different station, and there may be cases where the octets reported by this receive primitive were placed onto the WM by other than a PHY_DATA.request.	
	9.3.5.3.3	FMi	T	N	This primitive is issued by the PHY sublayer to the MAC entity whenever the PLCP~~'s~~ has completed the transfer of data from the MAC entity to the PHY sublayer. This primitive is used by the MAC entity to start the next MAC entity request. The PHY sublayer shall issue this primitive in response to every PHY_DATA.request primitive issued by the MAC sublayer.	The MAC transmit state machine depends on this behavior of the PHY sublayer. If there are error conditions once transmit data octets are being transferred to the PHY, the PHY must define another means to indicate these errors — withholding the PHY_DATA.confirm is not acceptable.	
	9.3.5.6	**DW**	**T**		**It is currently unclear when and under what sircumstances this request is to be issued. It has never been discussed in the MAC. Further clarification is needed.**		
	9.3.5.7	**DW**	**T**	**Y**	**A statement should be added, that assures that the**	**This mechanism should assure that in**	

Seq. #	Section number	your ini-tials	Cmnt type E, e, T, t	Part of NO vote	Corrected Text/Comment	Rationale	Disposition/Rebuttal
					PHY_CCA_indicate should indicate Busy for the duration of LENGTH Bytes when the PLCP HEC was found correct.	**a mixed rate environment stations can report the correct CCA, even though they do not support the received modulation rate.**	
	9.3.5.8.3	FMi	T	N	This primitive is generated by the local PHY entity to the MAC sublayer whenever the PHY has successfully validated the PLCP header error check CRC at the start of ~~began~~ reception of a new PLCP_PDU~~MPDU~~.	The MAC assumes that the PHY_RXSTART.indicate is only generated when a valid PLCP header has been detected. Otherwise the RXVECTOR length and rate information cannot be assured to be meaningful.	
	9.3.5.8.3	FMi	T	N	The behavior of the PHY entity must be specified in the case when a valid PLCP header is received, but the indicated data rate is not supported by this PHY entity. The most desriable behavior, from a MAC point of view, is for the PHY_RXSTART.indicate to be issued, and for the RXVECTOR to include a required parameter that indicates unsupported data rate or encoding.	The receipt of a valid PLCP header provides useful information, including the length (e.g. duration) of the associated MPDU on the WM, and positive evidence that the CCA activity is actually a transmission by an 802.11 PHY entity, even if using a data rate not supported at this station. The MAC (and, presumably, the PHY CCA state machine) can make use of this information. Therefore, it is highly desirable that every instance where a PLCP header is detected with successful HEC be reported to the MAC entity, either using this primitive, or another, defined primitive.	
	9.3.5.9.2	FMi	T	N	The RXERROR parameter can be one or more of the following values: No_Error, ~~Header_Violation~~, Format_Violation, or Carrier_Lost. A number of error conditions may occur after the PLCP's receive state machine has detected what it thought may be a valid preamble and start frame delimiter. The following describes the parameter returned for each of those error conditions. *No_Error.* This value is used to indicate that no error	Header violation is useless to the MAC if reported after the receipt of the frame. Also, it is unclear how a "bad HEC field" can be reported — if the HEC value is bad, no PLCP header information is available, and there is no Length value to report in the RXVECTOR of the PHY_RXSTART.indicate. Also, 9.3.5.8.2 states that the RXVECTOR reports information from a valid PLCP	

Seq. #	Section number	your ini-tials	Cmnt type E, e, T, t	Part of NO vote	Corrected Text/Comment	Rationale	Disposition/Rebuttal
					occurred during the receive process in the PLCP. ~~*Header_Violation.* This value is used to indicate a failure in the received PLCP header. This error could be the results of a bad HEC field, or unused bits set in the header fields.~~ *Format_Violation.* This value is used to indicate that the format of the received PLCP_PDU was in error. *Carrier_Lost.* This value is used to indicate that during the reception of the incoming MPDU, carrier was lost and no further processing of the MPDU can be accomplished.	header. Since RXVECTOR is a required parameter, PHY_RXSTART.indicate may only be reported when the HEC is good. There is nothing the MAC can do with information that a potential PLCP header with bad HEC was detected. There is relatively little the MAC can do with and indication of illegal information in a PLCP header with good HEC unless that indication is part of the RXVECTOR. RXERROR should be used exclusively for reporting errors encountered after the PHY_RXSTART.indicate is presented to the MAC entity.	
	9.3.5.9.3	FMi	T	N	This primitive is generated by the PHY sublayer for the local MAC entity to indicate that the PLCP receive state machine has completed the reception, whether successfully or unsuccessfully, of the the number of octets indicated in the RXVECTOR of the corresponding PHY_RXSTART.indicate~~MPDU.~~ primitive. The PHY sublayer shall always generate an equal number of PHY_RXEND.indicate primitives as PHY_RXSTART.indicate primitives. Each PHY_RXEND.indicate primitive shall be generated the proper amount of time after the corresponding PHY_RXSTART.indicate primitive for reception of the number of octets indicated in the RXVECTOR at the data rate indicated in the RXVECTOR (or the sole data rate supported by the PHY sublayer). The PHY_RXEND.indicate primitive shall occur at this time even if the RXERROR parameter reports Carrier_Lost. When Carrier_Lost is reported, the number of PHY_DATA.indicate primitives generated between the PHY_RXSTART.indicate and the PHY_RXEND.indicate	This is the complete definition of the RXEND condition needed by the MAC Receive state machine. The "end" of a PLCP_PDU (not an MPDU, see Figure 11–12) is defined to occur the indicated number of octets after the (valid) PLCP header. This synthetic ending delimiter is the only means of determining where the end should be, thereby permitting the MAC to remain approximately synchronized with BSS slot timing and to know when to start transmitting an acknowledgement or when to start contending for the medium for an unrelated transmission. Loss of carrier before the PLCP_PDU is complete is a defined, reportable RXERROR condition, but does not move the point in time at which this PLCP_PDU is	

Seq. #	Section number	your ini-tials	Cmnt type E, e, T, t	Part of NO vote	Corrected Text/Comment	Rationale	Disposition/Rebuttal	
					may be less than the number of octets reported in the RXVECTOR.	supposed to end.		