

IEEE P802.11p D7.0 Wireless Access in Vehicular Environments (WAVE) comments

CI 03 SC 3 P2 L17 # 144011
 Thomson, Allan Cisco Systems

Comment Type TR Comment Status X

The definition of timing advertisement frame is too vague. Is it TSF? What is "timing"? In both Baseline standard and TGv there are multiple uses of timing (e.g. timing measurement).

Suggested Remedy

Provide a succinct clear definition of what time is being used and the purpose of that exchange

Proposed Response Response Status O

Counter - Suggest change to "External Time Advertisement" since it advertises the offset to obtain an external time (e.g. UT0) from STA time (TSF)

CI 03 SC 3 P2 L19 # 125008
 Roy, Richard SRA

Comment Type TR Comment Status X

The proposed modification to the definition of a BSS is technically problematic. To successfully join a BSS, a STA must receive more than one valid beacon frame, and the ONDEMANDBEACON frame is not transmitted periodically, rather only when commanded by the SME. Use of an ONDEMANDBEACON to create a BSS would require transmission of several such frames with the appropriate timing for other STAs to successfully join.

Suggested Remedy

Remove the suggested changes to clause 3.16 leaving the definition of BSS unaltered.

Proposed Response Response Status O

Counter - This comment is considered "overcome by events" (OBE) with the passing of the motion in 11-08-1024-07-000p-no-wbss-no-beacon-comment-resolution.doc. Please see this document and the updated P802.11p draft.

CI 03 SC 3 P2 L42-5 # 125041
 Stephenson, Dave Cisco

Comment Type TR Comment Status X

The definitions for on-demand beacon and wave beacon are the same. This is confusing.

Suggested Remedy

Delete one of the definitions and use the remaining definition consistently throughout the text of the amendment.

Proposed Response Response Status O

Counter - This comment is considered "overcome by events" (OBE) with the passing of the motion in 11-08-1024-07-000p-no-wbss-no-beacon-comment-resolution.doc. Please see this document and the updated P802.11p draft.

CI 03 SC 3.168a P2 L26 # 125010
 Roy, Richard SRA

Comment Type TR Comment Status X

The concept of a WBSS is unnecessary. The additional functionality required to make STAs WAVE capable neither depends on nor does it require any concept of associating in any way with other STAs. As stated, this amendment specifies functionality that allows STAs to communicate outside the context of any BSS, and the introduction of the term/concept WBSS only confuses the matter, not to mention the implementer.

Suggested Remedy

Remove the definition of WBSS.

Proposed Response Response Status O

Counter - This comment is considered "overcome by events" (OBE) with the passing of the motion in 11-08-1024-07-000p-no-wbss-no-beacon-comment-resolution.doc. Please see this document and the updated P802.11p draft.

CI 03 SC 3.168c P2 L36 # 125023
 Roy, Richard SRA

Comment Type TR Comment Status X

WAVE is not a separate "mode" of operation of a STA. The WAVE amendment provides additional specifications that allow STAs to communicate (i.e., send data, management, and control frames) outside the context of any BSS. For example, in addition to all the normal 802.11 functionality, WAVE capable STAs can send data frames without first having to join a BSS.

Suggested Remedy

Replace the definition of WAVE mode a definition of "WAVE capable STA (WC STA): a STA capable of transmitting and receiving data, control, and management frames outside the context of a BSS. WC STAs have dot11WAVECapable set to true."

Proposed Response Response Status O

Counter - This comment is considered "overcome by events" (OBE) with the passing of the motion in 11-08-1024-07-000p-no-wbss-no-beacon-comment-resolution.doc. Please see this document and the updated P802.11p draft.

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CI 03 SC 3.168d P2 L42 # 125028
 Roy, Richard SRA

Comment Type TR Comment Status X

Beacon management frames are being used for a purpose to which they are ill-suited. The beacon frame should not be overloaded with additional functionality that is orthogonal to its basic purpose, that of initiating and maintaining BSSes. The only feature of a beacon frame that is potentially useful for STAs communicating outside the context of a BSS is the accurate Timestamp in the beacon frame itself. As the Timestamp is used for optional synchronization, a Timing Synchronization management frame is the appropriate management frame to include in the amendment. Allowing this frame to optionally carry the WIE creates all the functionality necessary to allow WC STAs to operate successfully.

SuggestedRemedy

Remove the ONDEMANDBEACON frame and replace it with a Timing Synchronization management frame that has the accurate Timestamp required.

Proposed Response Response Status O

Counter - This comment is considered "overcome by events" (OBE) with the passing of the motion in 11-08-1024-07-000p-no-wbss-no-beacon-comment-resolution.doc. Please see this document and the updated P802.11p draft.

CI 03 SC 3.168e P2 L49 # 125033
 Roy, Richard SRA

Comment Type TR Comment Status X

Beacon management frames are being used for a purpose to which they are ill-suited. The beacon frame should not be overloaded with additional functionality that is orthogonal to its basic purpose, that of initiating and maintaining BSSes, and communication by WC STAs outside the context of a BSS is exactly that, communication without a BSS. A beacon frame is not required.

SuggestedRemedy

Remove the definition of WAVE beacon and all instances of the term from the document. This can be easily accomplished since the functionality (that of carrying an optional information element the contents of which are beyond the scope of 802.11) implemented by the use of this frame is beyond the scope of 802.11. This simple functionality (optionally carrying an IE) is better left to a specifically designed action frame and the proposed Timing Synchronization management frame.

Proposed Response Response Status O

Counter - This comment is considered "overcome by events" (OBE) with the passing of the motion in 11-08-1024-07-000p-no-wbss-no-beacon-comment-resolution.doc. Please see this document and the updated P802.11p draft.

CI 04 SC 4 P3 L5 # 125045
 Roy, Richard SRA

Comment Type TR Comment Status X

The modifications to 802.11 being proposed to make the standard applicable to rapidly varying RF environments have application to a large number of systems, not just those anticipated by intelligent transport systems. The number of units that successfully implement and use the "WAVE capabilities" is likely to far exceed the number of vehicles on the planet. Use of the term "vehicles" to describe the features of the new functionality is limiting. Furthermore, just because the PAR has Vehicles in the title does not mean that the term must be used in the amendment.

SuggestedRemedy

Replace "vehicular" with "varying" in the acronym so it descriptively reads: "wireless access in varying environments".

Proposed Response Response Status O

Declined - TGp voted to decline this comment. Anticipate further WG feedback.

CI 04 SC 4 P3 L6 # 125046
 Roy, Richard SRA

Comment Type TR Comment Status X

The information element being described is not just restricted to use by WC STAs. Calling it a WAVE information element is misleading.

SuggestedRemedy

Rename the WIE to HLIE (higher layer information element).

Proposed Response Response Status O

Counter - This comment is considered "overcome by events" (OBE) with the passing of the motion in 11-08-1024-07-000p-no-wbss-no-beacon-comment-resolution.doc. Please see this document and the updated P802.11p draft.

IEEE P802.11p D7.0 Wireless Access in Vehicular Environments (WAVE) comments

Cl 05 SC 5 P2 L21 # 144014
 Bumiller, George Research In Motion

Comment Type ER Comment Status X

The use and capabilities of 802.11p should be covered in Clause 5 and generally in the other sections.

SuggestedRemedy

Provide the user of the specification with sufficient information to understand the main applications of the capability being standardized.

Proposed Response Response Status O

Declined - The capabilities of the communication mechanism defined in 802.11p are covered in Clause 5.2.11, principally the capability to communicate data frames between STAs that do not belong to a BSS. The task group has previously received, and accepted, comments to remove text that discusses the applications that have motivated this amendment. Clause 5.2.11 notes the intended usage as "rapidly varying communication environments such as those involving mobile STAs where the interval over which the communication exchanges take place may be of very short-duration (e.g. measured in milliseconds)." That's as far in the direction of usage as we think the 802.11 WG would like us to go.

Cl 05 SC 5 P3 L38 # 125075
 Adachi, Tomoko Toshiba Corporation

Comment Type TR Comment Status X

"The delay in joining a WAVE BSS is reduced compared to an infrastructure BSS because MAC level authentication and association do not apply to a WAVE BSS. Any services analogous to the DSS, and security services are deferred to the station management entity or higher layers; STAs in WAVE mode do not use a DS." If a DS is not used, why is there an AP in WAVE BSS?

SuggestedRemedy

Reconsider the use of a DS. If a DS will not be used, delete the usage of an AP in WAVE BSS. If an AP is needed, use authentication/association process and add MAC layer security mechanism.

Proposed Response Response Status O

Counter - This comment is considered "overcome by events" (OBE) with the passing of the motion in 11-08-1024-07-000p-no-wbss-no-beacon-comment-resolution.doc. Please see this document and the updated P802.11p draft.

Cl 05 SC 5.2.11 P2 L45 # 144018
 Ecclesine, Peter Cisco Systems

Comment Type TR Comment Status X

The scope of this amendment is restricted from 3.65 GHz bands. The title of this subclause "STA transmission of data frames outside the context of a BSS" is beyond the scope of the PAR, and should be qualified by some language that is within scope. 802.11y Public Action frames are sent "outside the context of a BSS" by an enabling STA.

SuggestedRemedy

Rewrite this subclause using language that is clearly restricted to operation within the scope of the 802.11p PAR.

Proposed Response Response Status O

Declined - TGp disagrees that the PAR restricts capabilities introduced in the amendment to operations conducted in any given band (see 11-09-0020/r1). Therefore, TGp believes it has already complied with the suggested remedy. Also, this subclause now includes the following clarification: "NOTE-The state of dot11OCBEnabled does not affect the validity of management or control frame transmissions, except with regard to scanning, authentication, and association as noted in Clause 11.19". Since Public Action frames are not within the exception of the note, it is clear that the state of dot11OCBEnabled has no bearing on them. TGp agrees that Public Action frames can be considered to be outside the context of a BSS, and it is primarily for that reason that the scope of the MIB variable dot11OCBEnabled = true is limited to data frames (plus those management frames associated with the exception noted above).

Cl 05 SC 5.2.11 P2 L49 # 144020
 Ecclesine, Peter

Comment Type TR Comment Status X

The scope of this amendment is restricted from 3.65 GHz bands. The requirement "A STA will transmit a data frame outside the context of a BSS only if dot11OCBEnabled is set to true." is beyond the scope of the PAR, and should be qualified by some statement that is within scope.

SuggestedRemedy

Rewrite this subclause using language that is clearly restricted to operation within the scope of the 802.11p PAR.

Proposed Response Response Status O

Declined - See the resolution of CID #18

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Cl 05 SC 5.2.11 P3 L20 # 144031
 Stephenson, Dave Cisco

Comment Type ER Comment Status X

The sentence beginning "The BSSID field ." is a normative behavior which should be included in clause 11 rather than clause 5.

SuggestedRemedy

Move it.

Proposed Response Response Status O

Declined - Clause 11.19 already has a normative statement covering the BSSID field. The sentence in 5.2.11 is explanatory, an informative statement of fact for the benefit of the reader. It does not use the normative "shall" as clause 11.19 does. Removing this sentence would not improve the amendment.

Cl 05 SC 5.2.11 P3 L22 # 144034
 Roy, Richard SRA

Comment Type TR Comment Status X

The ability to exchange data frames (and all other frames for that matter) is a potentially useful capability in many 802.11 WLAN deployments regardless of the state of other links currently in use. To date, no valid technical reason for prohibiting the use of this very generic capability in all conditions has been tendered. In fact, a recent poll of knowledgeable members of the WG concluded that such a capability could successfully coexist with all other legacy 802.11 link states (cf. BSS, IBSS links). As written, the material in this subclause intends to prohibit the general use of this very useful functionality. It should be rewritten to allow coexistence with current legacy link states.

SuggestedRemedy

Rewrite as suggested in 11-08-1375-03-000p-clause 5 changes.doc

Proposed Response Response Status O

Declined - The expansion requested in the comment has consistently been declined by TGp in D4.0 (March '08), D5.0 (November '08), and D6.0 (March '09). Neither the comment nor the referenced document provides relevant new information.

Cl 05 SC 5.2.2.a P2 L37 # 141009
 Roy, Richard SRA

Comment Type TR Comment Status X

The rewrite of this subclause contains several confusing and misleading statements (see 1375r1).

SuggestedRemedy

As given in 11-08-1375-01-000p-clause 5 changes.doc

Proposed Response Response Status O

Counter - Some of the suggestions are accepted, some are accepted in principle, and others are declined. Specific recommendations regarding the comments on 5.2.2a (5.2.11) (5.2.11) are incorporated in submission 11-09-0043.

Cl 05 SC 5.2.2.a P2 L38 # 141010
 Ecclesine, Peter Cisco Systems

Comment Type TR Comment Status X

The scope of this amendment is restricted to 5 GHz bands. The requirement "A STA will communicate outside the context of a BSS only if dot11OCBEnabled is set to true." is beyond the scope of the PAR, and should be qualified by some statement that is within scope.

SuggestedRemedy

Rewrite this subclause using language that is clearly restricted to operation within the scope of the 802.11p PAR.

Proposed Response Response Status O

Declined - See doc: 11-09-0020 The primary objective of TGp as defined in the PAR is operation at high speeds and long ranges relative to conventional 802.11 usage and is totally independent of the frequency band used. The PAR identifies the need to support the 5 GHz bands and support for transportation applications but is not interpreted by Task Group p as being restricted to only 5 GHz.

IEEE P802.11p D7.0 Wireless Access in Vehicular Environments (WAVE) comments

Cl 05 SC 5.2.2.a P2 L40 # 141012
 Ecclesine, Peter Cisco Systems

Comment Type TR Comment Status X

The scope of this amendment is restricted to 5 GHz bands. The title of this subclause "STA communication outside the context of a BSS" is beyond the scope of the PAR, and should be qualified by some language that is within scope. 802.11y Public Action frames are sent "outside the context of a BSS"

SuggestedRemedy

Rewrite this subclause using language that is clearly restricted to operation within the scope of the 802.11p PAR.

Proposed Response Response Status O

Declined - See doc: 11-09-0020 and response in CID 10.

Cl 05 SC 5.2.2a P3 L23-2 # 125088
 Stephenson, Dave Cisco

Comment Type TR Comment Status X

The text states that, "a STA is in WAVE mode ." This sentence provides the technical definition of WAVE mode as it relates the mode to a MIB object, but uses informative language rather than normative.

SuggestedRemedy

Change "is" to "shall be" (normative language).

Proposed Response Response Status O

Counter - This comment is considered "overcome by events" (OBE) with the passing of the motion in 11-08-1024-07-000p-no-wbss-no-beacon-comment-resolution.doc. Please see this document and the updated P802.11p draft.

Cl 05 SC 5.2.2a P3 L42-4 # 125094
 Stephenson, Dave Cisco

Comment Type TR Comment Status X

The text states, "WAVE mode allows communication outside the context of a BSS." However, the text (nowhere in the document as far as I can tell) provides a definition of "outside the context of a BSS".

SuggestedRemedy

Provide a description of the purpose and type of information a STA will communicate outside the context of a BSS.

Proposed Response Response Status O

Counter - Counter: the new clause 5.2.2a discusses the purpose of communication outside the context of a BSS, but does not discuss the type of information a STA will communicate.

Cl 05 SC 5.2.6 P2 L41 # 144017
 Fischer, Matthew Broadcom

Comment Type TR Comment Status X

I cannot tell the difference between your 5.2.6 and the baseline 5.2.6

SuggestedRemedy

Remove the instruction and accompanying text that suggests that 5.2.6 is changing from the baseline.

Proposed Response Response Status O

Declined - In D6.0 the words "or to interoperate with other STAs when exchanging QoS data frames outside the context of a BSS" are added to the baseline. These appear in the standard underline format. So, the editing instructions are correct.

Cl 05 SC 5.3.1 P3 L18 # 141020
 Ecclesine, Peter Cisco Systems

Comment Type TR Comment Status X

The scope of this amendment is restricted to 5 GHz bands. The requirement "a) Authentication (BSS operation only)" is beyond the scope of the PAR, and should be qualified by some statement that is within scope. Same is true for the other changes to 5.3.1.

SuggestedRemedy

Rewrite this subclause using language that is clearly restricted to operation within the scope of the 802.11p PAR.

Proposed Response Response Status O

Declined - See doc: 11-09-0020 and response in CID 10.

Cl 05 SC 5.3.1 P3 L27 # 144035
 Fischer, Matthew Broadcom

Comment Type TR Comment Status X

Your numbering appears to be incorrect. (WKF Note: Submittal shows Pg 5, Ln 22. Changed to Pg 3, ln27)

SuggestedRemedy

Fix the bullet numbering.

Proposed Response Response Status O

Declined - ***Withdrawn by M Fischer *** WKF: Note this comment appears to be from using the "Redline doc".

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Cl 05 SC 5.3.1 P3 L34 # 144038
 Roy, Richard SRA

Comment Type TR Comment Status X

The ability to exchange data frames (and all other frames for that matter) is a potentially useful capability in many 802.11 WLAN deployments regardless of the state of other links currently in use. To date, no valid technical reason for prohibiting the use of this very generic capability in all conditions has been tendered. In fact, a recent poll of knowledgeable members of the WG concluded that such a capability could successfully coexist with all other legacy 802.11 link states (cf. BSS, IBSS links). As written, the material in this subclause intends to prohibit the general use of this very useful functionality. It should be rewritten to allow coexistence with current legacy link states.

SuggestedRemedy

Remove these changes to 5.3.1.

Proposed Response Response Status O

Declined - See CID 34

Cl 06 SC 6 P3 L39 # 141023
 Roy, Richard SRA

Comment Type TR Comment Status X

The MA-UNITDATA primitives are missing an ALP argument. One of the most important features for use in ITS applications (rapidly varying RF environments) is the ability to control tx power on a packet by packet basis. There is currently no way in the MAC/PHY standard to do this. Addition of an Access Layer Parameter argument to the UNITDATA primitive would provide for this in a standardized way. Currently, this is done in the 1609 standards and should be moved into 802.11, since that is where MAC/PHY parameters are set and controlled, so that it can be used by others developing other networking protocols to compliment WSMP (cf. 1609.3).

SuggestedRemedy

Add an ALP parameter to the UNIDATA primitives that allow setting of the tx power and data rate on a packet by packet basis.

Proposed Response Response Status O

Counter - After discussion and review of the changes for Clause 6 in Draft 5.0, Task Group p decided to remove all changes to Clause 6.

Cl 06 SC 6.1.1.2 P3 L34 # 144039
 Roy, Richard SRA

Comment Type TR Comment Status X

Material describing how the priority parameter in MAC service primitives is to be interpreted when transmitting data frames outside a BSS is missing.

SuggestedRemedy

Add text describing how the TID value is used in such cases including allowance for its use as a peer-to-peer STA Block Ack exchange identifier.

Proposed Response Response Status O

Declined - Consensus of the group is that this is not required. Related comments in other clauses were also declined, see CIDs

Cl 06 SC 6.2.1.1.2 P4 L1 # 141028
 Stephenson, Dave Cisco

Comment Type TR Comment Status X

It would seem that BSSID will only be supplied if dot11OCBEnabled is true. If this is so, then text should so state. Otherwise STAs pre-dating 802.11p amendment will be non-compliant.

SuggestedRemedy

Per comment.

Proposed Response Response Status O

Counter - After discussion and review of the changes for Clause 6 in Draft 5.0, Task Group p decided to remove all changes to Clause 6.

Cl 06 SC 6.2.1.1.2 P4 L29-3 # 125103
 Stephenson, Dave Cisco

Comment Type TR Comment Status X

The text adds BSSID to the MA-UNITDATA.request primitive. However, this is unnecessary since that lower MAC will know the BSSID after it joins the WAVE BSS. I suspect the BSSID has been added for the purposes of communication "outside the context of a BSS"; however since it is unclear to me what is meant by that or how it will be used, I have made this comment.

SuggestedRemedy

Delete the text.

Proposed Response Response Status O

Declined - TGp voted to decline this comment. Anticipate further WG feedback.

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Cl 06 SC 6.2.1.1.2 P4 L47-5 # 125104
Stephenson, Dave Cisco

Comment Type TR Comment Status X

The text adds BSSID to the MA-UNITDATA.request primitive. However, this is unnecessary since that lower MAC will know the BSSID after it joins the WAVE BSS. I suspect the BSSID has been added for the purposes of communication "outside the context of a BSS"; however since it is unclear to me what is meant by that or how it will be used, I have made this comment.

SuggestedRemedy

Delete the text.

Proposed Response Response Status O

Declined - TGp voted to decline this comment. Anticipate further WG feedback.

Cl 06 SC 6.2.1.1.2 P4 L9-12 # 125102
Stephenson, Dave Cisco

Comment Type TR Comment Status X

The text adds BSSID to the MA-UNITDATA.request primitive. However, this is unnecessary since that lower MAC will know the BSSID after it joins the WAVE BSS. I suspect the BSSID has been added for the purposes of communication "outside the context of a BSS"; however since it is unclear to me what is meant by that or how it will be used, I have made this comment.

SuggestedRemedy

Delete the text.

Proposed Response Response Status O

Declined - TGp voted to decline this comment. Anticipate further WG feedback.

Cl 06 SC 6.2.1.2.2 P4 L21 # 141030
Stephenson, Dave Cisco

Comment Type TR Comment Status X

It would seem that BSSID should only be included if dot11OCBEnabled is true. If this is so, then text should so state. Otherwise STAs pre-dating 802.11p amendment will be non-compliant.

SuggestedRemedy

Per comment.

Proposed Response Response Status O

Counter - After discussion and review of the changes for Clause 6 in Draft 5.0, Task Group p decided to remove all changes to Clause 6.

Cl 06 SC 6.2.1.3.2 P4 L39 # 141032
Stephenson, Dave Cisco

Comment Type TR Comment Status X

It would seem that BSSID will only be supplied if dot11OCBEnabled is true. If this is so, then text should so state. Otherwise STAs pre-dating 802.11p amendment will be non-compliant.

SuggestedRemedy

Per comment.

Proposed Response Response Status O

Counter - After discussion and review of the changes for Clause 6 in Draft 5.0, Task Group p decided to remove all changes to Clause 6.

Cl 07 SC 7.1.3.1.2 P5 L20 # 141034
Barr, John Motorola

Comment Type TR Comment Status X

A new management frame subtype requested by the draft is unavailable. Earlier drafts from TGn and TGs consume subtypes 1110 and 1111 respectively. Moreover, proposing that one of the few remaining management subtypes be consumed for a mode that does not support security is wasteful, given all the work that has gone into securing management frames that could be productively put to use by other task groups.

SuggestedRemedy

Remove table 7-1 from the draft and instead reuse an existing frame, such as an IBSS beacon, an IBSS probe response or an action frame (as there seems to be no feature in this amendment that relies upon the timestamp value sent out in the proposed frame).

Proposed Response Response Status O

Declined - Declined: Editor has applied for and received Management frame subtype 6 for this frame. Management frame is needed because Timestamp is needed by higher layers.

Cl 07 SC 7.1.3.1.2 P5 L20 # 141039
Stephenson, Dave Cisco

Comment Type TR Comment Status X

This amendment should propose a value for subtype. It would seem that the following line, which has "1110" in strike-thru font is the value that was supposed to be used?

SuggestedRemedy

Per comment.

Proposed Response Response Status O

Declined - Declined: Editor has applied for and received Management frame subtype 6 for this frame. Management frame is needed because Timestamp is needed by higher layers.

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CI 07 SC 7.1.3.1.2 P5 L49 # 144078
 Fischer, Matthew Broadcom

Comment Type TR Comment Status X

I think that you need to delete a row from this table. You have defined two new mgmt frames, but the doc only describes one new mgmt frame.

SuggestedRemedy

Delete the first row of the table that contains the "Timing and information" mgmt frame.

Proposed Response Response Status O

Counter - ***Withdrawn by M Fischer *** WKF: Note this comment appears to be from using the "Redline doc".

CI 07 SC 7.1.3.3.3 P4 L31 # 144048
 Roy, Richard SRA

Comment Type TR Comment Status X

The proposed change is targetted at unnecessarily restricting the "BSSID field" in the MAC frame header. The BSSID field is not actually a field in the header (the fields are actually labelled Address 1, Address 2, Address 3, and there is also Address 4). Rather the value of the BSSID is used to populate one of the first three Address fields in the header depending on the values of the RA, SA, and DA (which also determine the values to be set in the ToDS and FromDS bits in the frame control field). The "BSSID field" needs only to be specified for the case where the RA = DA and SA = TA (ToDS = FromDS = 0) where it would otherwise be indeterminate. In all other situations (not specified in the 802.11 standard yet), the "BSSID field" should be populated with the appropriate address (either RA or TA). No vallid technical reason has been offered to date for restricting the address fields in the MAC header when transmitting frames outside the context of a BSS.

SuggestedRemedy

Remove the added sentence, and insert the changes to clause 7 found in 11-09-0102-05-000p-clause 7 MAC frame header related changes.doc

Proposed Response Response Status O

Declined - Declined - see 11-09/0503r2

CI 07 SC 7.1.3.3.3 P5 L19 # 125117
 Roy, Richard SRA

Comment Type TR Comment Status X

The concept of a WBSS is unnecessary. The additional functionality required to make STAs WAVE capable neither depends on nor does it require any concept of associating in any way with other STAs. As stated, this amendment specifies functionality that allows STAs to communicate outside the context of any BSS, and the introduction of the term/concept WBSS only confuses the matter, not to mention the implementer. Furthermore, without a WBSS, there is also no associated BSSID. There is, however, a field in transmitted frames often referred to in the standard as the BSSID field as it often contains the same value as that stored in the BSSID variable. This does not change the fact that it is used to filter the packets at the MAC layer and as such, is a frame or packet filter field in reality, which for WC STAs operating outside the context of a BSS is set by higher layers.

SuggestedRemedy

Rewrite this sentence to read: "The value of the BSSID field in frames transmitted by WC STAs outside the context of a BSS is not specified in this standard."

Proposed Response Response Status O

Counter - ACCEPT IN PRINCIPLE New wording reflects the intent of this suggestion.

CI 07 SC 7.1.3.3.3 P5 L25 # 125120
 Yang, Zhiyu Marvell Semiconductor

Comment Type TR Comment Status X

What is the BSSID used in the Link RCPI Request? Is it the BSSID of the AP?

SuggestedRemedy

Use the AP s BSSID.

Proposed Response Response Status O

Declined - DECLINED: we are describing a method of communication outside of a BSS in which there is no AP.

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CI 07 SC 7.1.3.3.3 P5 L25 # 125121
 Yang, Zhiyu Marvell Semiconductor

Comment Type TR Comment Status X

A non AP STA decides to establish a DLS with another non AP STA after sending it a Link RCPI and then determines if it should establish a peer link or not. However the non AP STA may be in Power Save mode and might not respond.

SuggestedRemedy

The non AP STA should send the Link RCPI after the DTIM beacon.

Proposed Response Response Status O

Declined - REJECT: In Draft 802.11p we are not talking about Direct Link communication in which the peer link is established after negotiation through an AP, but a new way of sending data frames without prior authentication or association.

CI 07 SC 7.1.3.3.3 P5 L25-3 # 125141
 Stephenson, Dave Cisco

Comment Type TR Comment Status X

A wildcard BSSID should not be used in WAVE mode; the BSSID should be the BSSID in the WAVE Beacon.

SuggestedRemedy

Delete the text.

Proposed Response Response Status O

Declined - REJECT: communication using the wildcard BSSID need not be preceded by a WAVE Beacon ; communication outside of a BSS may require the use of wildcard BSSID for acceptance of broadcast packets.

CI 07 SC 7.1.3.3.3 P5 L30 # 125126
 Roy, Richard SRA

Comment Type TR Comment Status X

WAVE is not a separate "mode" of operation of a STA. The WAVE amendment provides additional specifications that allow STAs to communicate (i.e., send data, management, and control frames) outside the context of any BSS.

SuggestedRemedy

Replace "2. Data frames transmitted in WAVE mode." with "Any frames transmitted by WC STAs operating outside the context of a BSS."

Proposed Response Response Status O

Counter - ACCEPT IN PRINCIPLE New wording reflects the intent of this suggestion.

CI 07 SC 7.1.3.3.3 P6 L10 # 141054
 Ecclesine, Peter Cisco Systems

Comment Type TR Comment Status X

The scope of this amendment is restricted to 5 GHz bands. The restriction of wildcard value (all 1's) is beyond the scope of the PAR, and should be qualified by some language that is within scope.

SuggestedRemedy

Rewrite this subclause using language that is clearly restricted to operation within the scope of the 802.11p PAR.

Proposed Response Response Status O

Declined - See doc: 11-09-0020 and response in CID 10.

CI 07 SC 7.1.3.3.3 P6 L12 # 141057
 Stephenson, Dave Cisco

Comment Type ER Comment Status X

The text would be easier to understand if instead of saying ". except where explicitly permitted elsewhere in this standard.", the text were to revert to the text in IEEE 802.11-2007 and add the specific exception here or a reference to the clause elsewhere in the draft which has the exception.

SuggestedRemedy

Per comment.

Proposed Response Response Status O

Declined - The 'elsewhere' is used in the base standard and refers to subclauses: 7.2.3, 7.3.2.1, 11.1.3, and 11.1.3.2.1.

CI 07 SC 7.1.3.5.1 P4 L43 # 144051
 Roy, Richard SRA

Comment Type TR Comment Status X

The insertion states that since TSs are not used, the TID always corresponds to a TC. This conclusion does not follow. There are other uses of TID values in the range 8-15 other than just identifying a TS. In particular, these values can be used by peer QoS STAs to identify a set of MSDUs being transmitted using the Block Ack facility. As this facility could be very useful in many 802.11 WLAN environments, it should not be prohibited.

SuggestedRemedy

Rewrite the paragraph to allow TID values from 8-15 to identify peer-to-peer Block Ack exchanges.

Proposed Response Response Status O

Declined - Declined - see 11-09/0503r2

IEEE P802.11p D7.0 Wireless Access in Vehicular Environments (WAVE) comments

CI 07 SC 7.2.2 P5 L10 # 144068
 Roy, Richard SRA

Comment Type TR Comment Status X

The additional material "if dot11OCBEnabled is true, to ensure that the BSSID is the wildcard BSSID" and the added item c) are directed at changing the value of a parameter (the BSSID) which is unrelated to operation outside of a BSS. Also, the proposed change is targetted at unnecessarily restricting the "BSSID field" in the MAC frame header. The BSSID field is not actually a field in the header (the fields are actually labelled Address 1, Address 2, Address 3, and there is also Address 4). Rather the value of the BSSID is used to populate one of the first three Address fields in the header depending on the values of the RA, SA, and DA (which also determine the values to be set in the ToDS and FromDS bits in the frame control field). The "BSSID field" needs only to be specified for the case where the RA = DA and SA = TA (ToDS = FromDS = 0) where it would otherwise be indeterminate. In all other situations (not specified in the 802.11 standard yet), the "BSSID field" should be populated with the appropriate address (either RA or TA). No valid technical reason has been offered to date for restricting the address fields in the MAC header when transmitting frames outside the context of a BSS.

SuggestedRemedy

Make the changes suggested in 11-09-0102-05-000p-clause 7 MAC frame header related changes.doc and remove the changes in this draft.

Proposed Response Response Status O

Declined - Declined - see 11-09/0503r2

CI 07 SC 7.2.2 P5 L3 # 144057
 Durand, Roger RIM

Comment Type TR Comment Status X

The concept and use of a "wildcard BSSID" is not defined

SuggestedRemedy

define the "wildcard BSSID"

Proposed Response Response Status O

Declined - See 7.1.3.3.3

CI 07 SC 7.2.2 P5 L8 # 151034
 Engwer, Darwin Nortel Networks

Comment Type ER Comment Status X

"broadcast" and "multicast" are non-standard IEEE 802 terms.

SuggestedRemedy

Change to "group addressed frame"

Proposed Response Response Status O

Declined - Declined - TGp did not modify the text. "broadcast address" is defined in subclause 3.18 of IEEE Std 802.11-2007. "multicast" is defined in subclause 3.87 of IEEE Std 802.11-2007. In addition, the terms are defined in IEEE Std 100 - dictionary for IEEE stds. Perhaps this comment should better be addressed to TGmb. In IEEE Std 802.11-2007 there are 138 instances of "broadcast" and 162 instances of "multicast".

CI 07 SC 7.2.2 P6 L15 # 125144
 Stephenson, Dave Cisco

Comment Type TR Comment Status X

The text states that a STA in WAVE mode use the wildcard BSSID. This means that all STAs must pass these frames up the stack since the lower MAC cannot filter based on BSSID. Upper MAC will have to process all of these frames and if STA is AP, then AP (non-WAVE mode) has to determine whether the STA is associated in order to make the decision on whether to forward or drop the frame.

SuggestedRemedy

Delete the use of wildcard BSSID for data frames outside the context of a WAVE BSS.

Proposed Response Response Status O

Declined - REJECT: data communication outside of a BSS may require the use of the wildcard BSSID to allow the acceptance of broadcast packets. Whether this creates a problem for a nearby AP is a system integration and performance issue.

CI 07 SC 7.2.2 P6 L39 # 141064
 Stephenson, Dave Cisco

Comment Type TR Comment Status X

Any non-11p STAs in radio range of an 11p STA that have a BSSID matching the BSSID used by an 11p device, may erroneously pass up their stack the 11p frame; i.e., it will not be properly filtered by the lower MAC.

SuggestedRemedy

Suggest that 11p BSSIDs are required to set the locally administered bit in the MAC address so that STAs using globally unique MAC addresses will never have this problem.

Proposed Response Response Status O

Counter - TGp now uses the Wild Card BSS.

IEEE P802.11p D7.0 Wireless Access in Vehicular Environments (WAVE) comments

CI 07 SC 7.2.2 P6 L6 # 125143
 Fischer, Matthew Broadcom

Comment Type TR Comment Status X

You need to add instructions regarding how to fill in address3 when in WAVE mode. This is in direct reference to the combination of the fact that you indicated that ToDS and FromDS will determine the address fields as shown in Table 7-7 and the fact that you may use the wildcard BSS value in address3 in some cases. I note that you do have a general statement about how to determine the BSSID value for a WAVE STA, but that is not sufficient in this case, because the behavior description limits the STAs to either those in a BSS or those in an IBSS, and you are neither, so the definition of the BSSID that you have added here, while a good start, is insufficient.

SuggestedRemedy

Alter the baseline text from subclause 7.2.2 that includes the following phrasing:

The BSSID of the Data frame is determined as follows:

- a) If the STA is an AP or is associated with an AP, the BSSID is the address currently in use by the STA contained in the AP.
- b) If the STA is a member of an IBSS, the BSSID is the BSSID of the IBSS.

By adding another condition as follows:

- c) If the STA is operating in WAVE mode, the BSSID is either the address of the associated WAVE mode BSS or is the wildcard BSS value.

Proposed Response Response Status O

Counter - ACCEPT IN PRINCIPLE Wording has been added to describe the use of address 3 when sending data frames outside of a BSS. The exact wording suggested by the commenter does not apply since we have removed the WAVE BSS concept.

CI 07 SC 7.2.3.1 P6 L22 # 125149
 Roy, Richard SRA

Comment Type TR Comment Status X

Beacon management frames are being used for a purpose to which they are ill-suited. The beacon frame should not be overloaded with additional functionality that is orthogonal to its basic purpose, that of initiating and maintaining BSSes, and communication by WC STAs outside the context of a BSS is exactly that, communication without a BSS. A beacon frame is not required.

SuggestedRemedy

Remove the ONDEMANDBEACON frame and replace it with a Timing Synchronization management frame that has the accurate Timestamp required. Include optional information elements that are necessary for higher layer synchronization, the TimeSlotChannelConfiguration IE, and the optional HLIE.

Proposed Response Response Status O

Counter - COUNTER: eliminate on-demand beacon, but include only timestamp and HLIE, not clear what the TIE contents would be

CI 07 SC 7.2.3.12 P6 L45 # 125166
 Roy, Richard SRA

Comment Type TR Comment Status X

The HLIE contains information that is used by higher layers to take certain actions. Logically, it should be transmitted in an action frame.

SuggestedRemedy

Add a HL action frame, the contents of which at a minimum are one or more HLIEs

Proposed Response Response Status O

Declined - REJECT: addition of a new frame would make action frame redundant.

CI 07 SC 7.3.1.3 P6 L53 # 125169
 Fischer, Matthew Broadcom

Comment Type TR Comment Status X

Is every beacon in WAVE an on-demand beacon? Does this mean that the vehicles are constantly sending probes across a set of channels looking for a response? If so, you really need to state this somewhere in clause 11.

SuggestedRemedy

Clarify.

Proposed Response Response Status O

Counter - See Comment 167 and its resolution.

IEEE P802.11p D7.0 Wireless Access in Vehicular Environments (WAVE) comments

CI 07 SC 7.3.2 P7 L16 # 125181
 Roy, Richard SRA

Comment Type TR Comment Status X

Along with higher layer synchronization comes the ability to specify time slots for general use by STAs. This specification is necessary for more efficient use of spectrum in ITS operations and could also be very useful for mesh operations (cf. TGs discussions of possible mesh slots, etc.).

SuggestedRemedy

Add a TimeSlotChannelConfiguration information element that contains the information necessary to uniquely specify how a given RF channel is divided into time slots, including relevant synchronization information. Include EDCA parameter sets for non-overlapping time slots. Add the TIE to the list of optional elements in management and action frames that are used to send channelization information over the air.

Proposed Response Response Status O

Declined - Comment Declined.

CI 07 SC 7.3.2.26 P6 L38 # 144085
 Montemurro, Michael Research in Motion

Comment Type TR Comment Status X

The vendor-specific IE uses the OUI as a namespace to avoid collisions between custom IE definitions. This namespace can only be managed by one organization. Also, making the OUI field variable would make this IE nearly impossible to parse correctly.

SuggestedRemedy

If there is a need to create a different namespace, either define a new IE or have IEEE allocate an OUI specific to the organisation that will be managing the "variable length" vendor identifier.

Proposed Response Response Status O

Counter - There is no need to create another namespace. 802.11-2007 does not reflect the current situation with respect to the Organizationally Unique Identifier namespace managed by the IEEE-RA. The IEEE-RA itself has reserved certain 24-bit OUI values and then shared these over multiple vendors/organizations by adding an additional 12-bits of identification to result in longer organizationally unique identifiers (OUI-36 and IAB). The changes added by TGP resolve this.

CI 07 SC 7.3.2.26 P6 L39 # 144086
 Durand, Roger RIM

Comment Type TR Comment Status X

"multiple vendor specific information elements may appear in a single frame". "each vendor specific information element can have a different organization identifier value" there is no detail on what this is or why it is here. What is this, over?

SuggestedRemedy

This appears to be a trojan horse in 11p? Either develop a real standard by selecting a specific OUI and/or getting one assigned thru IEEE or elsewhere and describing it in sufficient detail to do something as a standard. Or, consider disbanding 802.11p and let individual proprietary and likely incompatible solutions compete?

Proposed Response Response Status O

Declined - There is no trojan horse here. 802.11-2007 already permits multiple vendor specific information elements and there is no restriction that these all contain the same OUI. TGP, or rather IEEE 1609 working group have obtained a since unique identifier from the IEEE-RA. See also response to CID 85

CI 07 SC 7.3.2.26 P6 L42 # 144087
 Bumiller, George

Comment Type TR Comment Status X

(Pp 6&7, Ln 42 to 16) The clause speaks of an "Organization Identifier" which is evidently the OUI.

SuggestedRemedy

Simply state that the OUI (Organizationally Unique Identifier)" is used to identify the organization that controls the "Vendor-specific content" in the Vendor Specific information element. The clause needs a careful rewrite.

Proposed Response Response Status O

Declined - The proposal to just use OUI is imprecise because the IEEE Registration Authority, and also IEEE 802, defines the OUI as the 24-bit identifier. The IEEE Registration Authority has also assigned 36-bit unique identifiers. Within the same namespace To be specific to vendor the identifier must support 36-bit identifiers. Since OUI is used elsewhere in 802.11, and by the IEEE-RAC and IEEE 802 to specifically refer to the 24-bit OUI, a new field name is proposed. see also response to CID 85

IEEE P802.11p D7.0 Wireless Access in Vehicular Environments (WAVE) comments

CI 07 SC 7.3.2.26 P6 L48 # 144091
 Thomson, Allan Cisco Systems

Comment Type TR Comment Status X

By introducing a variable length OUI field this will break implementation on STAs that assume the OUI field is always 3 octets. In addition there is no way to know the field is 3 or 5 octets from the length field as the length field defines the total length of the variable content - 3 whereas that is not true anymore. This change is not backward compatible.

SuggestedRemedy

Either create a new vendor specific element for the 5 octet variant or remove this change completely.

Proposed Response Response Status O

Declined - This will not break existing STAs. Only certain OUI values result in 5 octet unique identifiers and these are known and controlled by the IEEE-RA. Thus from the 1st 3 octets of the field the length is known.

CI 07 SC 7.3.2.26 P6 L48 # 144090
 Bumiller, George

Comment Type TR Comment Status X

(7.3.2.26 and elsewhere) The text reads "The IEEE currently assigns both 24-bit (OUI) and 36-bit (OUI-36 and IAB) public unique organization identifiers."

SuggestedRemedy

Here, and elsewhere in the draft, the phrase "public unique organization identifiers" is used with respect to the IEEE-assigned OUIs. Now, the IEEE uses OUI for "Organizationally Unique Identifier", not "unique organization identifier". Using the OUI, one should conform to _that_ standard. The faqs published by the IEEE Standards Association also say "The other names for OUI and IAB are: MAC Address, Vendor Address, Vendor ID, NIC Address, Ethernet Address and others." Suggest that the primary phrasing, "Organizationally Unique Identifier" should be used. Add a note if you wish stating that it's going used as a 'unique organization identifier'. But the basic phrasing of the OUI standard is clearly the way to go. Looking further, IEEE 802.11-2007 lists OUI in clause 4, Abbreviations and acronyms.

Proposed Response Response Status O

Counter - Agree in principle. See response to 88

CI 07 SC 7.3.2.26 P6 L50 # 144093
 Myles, Andrew Cisco

Comment Type TR Comment Status X

The text provides a mechanism to specify 5 octet OUI's, whereby the first three octets specifies whether the field is 3 or 5 octets.

It is not clear whether or not the method for using the first three octets to specify a field length of 5 octets is globally known.

* If it is then the draft has effectively succeeded in creating a 2 octet OUI, which is clearly not very useful

* If it is not then it would have been better for the owner of the 3 octet OUI to just use a longer Vendor specific field

The bottom line is that this feature appears to be ill thought out

SuggestedRemedy

Remove the 5 octet OUI capability

Proposed Response Response Status O

Declined - It is not that this field is incorrectly thought out but rather that 802.11 has not kept up with the changes made by the IEEE-RA in unique vendor and organization identification. The means of knowing whether it is 3 or 5 octets is by inspection of the first 3 octets. The IEEE-RA has specifically identified which are 3-octet values are further subdivided over multiple vendors.

CI 07 SC 7.3.2.26 P6 L53 # 151051
 Montemurro, Michael Research in Motion

Comment Type TR Comment Status X

By making the OUI variable (as well as the Vendor-specific content), it is impossible for the receiver to be able to parse the IE. Also, by accommodating different length OUI's in this manner, there is now a possibility that vendor-specific IE's can collide depending on the contents of the two fields.

SuggestedRemedy

Either create a new vendor-specific IE to address OUI length > 3 or use an unassigned OUI (like FF-FF-FF), with an OUI length field, followed by the OUI in the vendor-specific IE.

Proposed Response Response Status O

Counter - Counter. See CID 50.

IEEE P802.11p D7.0 Wireless Access in Vehicular Environments (WAVE) comments

CI 07 SC 7.3.2.26 P6 L53 # 151050
 Durand, Roger RIM

Comment Type TR Comment Status X

By making the OUI variable (as well as the Vendor-specific content), it is impossible for the receiver to be able to parse the IE. Also, by accomodating different length OUI's in this manner, there is now a possibility that vendor-specific IE's can collide depending on the contents of the two fields.

SuggestedRemedy

Either create a new vendor-specific IE to address OUI length > 3 or use an unassigned OUI (like FF-FF-FF), with an OUI length field, followed by the OUI in the vendor-specific IE.

Proposed Response Response Status O

Counter - Counter. Insert for clarification the following as the penultimate sentence in the first paragraph of 7.3.1.21, "The IEEE assigns 36-bit organizationally unique identifiers such that the OUI portion indicates that total length of the identifier is 36 bits." The IEEE-Registration Authority has identified which 3-octet OUIs have been extended to longer identifiers by sharing the 3-octet value over multiple vendors/organizations. A STA that is able to understand a vendor specific IE beginning with one of the subdivided 3-octet OUIs will already know the length based on the first 3 octets.

CI 07 SC 7.3.2.26 P7 L1 # 144096
 Stephenson, Dave Cisco

Comment Type TR Comment Status X

The changes to the vendor specific element make it un-parsable. The receiver of this element has no way of knowing the length of the OUI element.

SuggestedRemedy

Add a new VSIE having a 36-bit OUI so legacy implementations won't be affected by this change.

Proposed Response Response Status O

Declined - The IEEE-Registration Authority has identified which 3-octet OUIs have been extended to longer identifiers by sharing the 3-octet value over multiple vendors/organizations. A STA that is able to understand a vendor specific IE beginning with one of the subdivided 3-octet OUIs will already know the length based on the first 3 octets.

CI 07 SC 7.3.2.26 P7 L3 # 151052
 McCann, Stephen Research in Motion

Comment Type TR Comment Status X

It appears that the fields in Figure 7-75 can not be parsed, as the length field of the element only provides 'n'. Hence the OUI length 'j' is unknown.

SuggestedRemedy

I suggest that since the OUI length can be expected to be either 3 or 5 octets (short/long), then perhaps a single bit could be used in the Vendor Specific Information element to differentiate between a 'j' value of 3 or 5, so that the element can be correctly parsed.

Proposed Response Response Status O

Counter - Counter. See CID 50.

CI 07 SC 7.3.2.27 P8 L14 # 125201
 Fischer, Matthew Broadcom

Comment Type TR Comment Status X

There is sort of a dilemma here - on the one hand, this element is for capabilities, not feature enablement indication, which is what you seem to have chosen to use it for. On the other hand, I am not in favor of adding the huge overhead of yet another element to support just one or two bits of additional signaling.

SuggestedRemedy

At a minimum, maybe we want to change the name of this element from Extended Capabilities to Extended Capabilities and Features Signaling or something like that. Worst case is that we move the two new bits to some other element, like the WAVE IE, which I think is best, unless you can convince me of a good reason why there would ever be ZERO WAVE IEs in a WAVE beacon...

Proposed Response Response Status O

Counter - No longer using a WAVE Beacon.

CI 07 SC 7.3.2.27 P8 L22 # 125209
 Roy, Richard SRA

Comment Type TR Comment Status X

The WAVE indication bit is meant to indicate that the STA is WAVE Capable.

SuggestedRemedy

Change "WAVE indication" to "WAVE Support" in column 2 and change the Notes column to read: "If MIB attribute dot11WAVECapable is true, then the WAVE Support bit is set to 1, otherwise it is set to 0.

Proposed Response Response Status O

Counter - COUNTER: ACCEPT IN PRINCIPLE New wording reflects the intent of this suggestion.

IEEE P802.11p D7.0 Wireless Access in Vehicular Environments (WAVE) comments

CI 07 SC 7.3.2.27 P8 L27 # 141097
 Roy, Richard SRA

Comment Type TR Comment Status X

The current format of the HLIE does not provide for an OUI field that could be used to identify the "source" of that HLIE. Thus, there is no way to know to which standard the HLIE conforms, unless one assumes that the extended capabilities bit being set in addition to announcing that the STA is capable of communicating outside the context of a BSS, it also points to a particular standard where the contents of the HLIE is specified (eg., 1609.3, .4). This overloads the use and meaning of this one bit which is not recommended, and furthermore, requires every developer of a different format for the HLIE to modify the 802.11 standard so that the new HLIE can be recognized. This is not a good idea.

SuggestedRemedy

The HLIE should include an OUI field so that by simply requesting an OUI from the numbering authority (and not having to revise the 802.11 standard) various standards organizations can develop their own HLIE if they so desire. This then obviates the need for an extended capabilities bit to indicate to which standard the HLIE complies. Once the OUI is included in the HLIE, there is no obvious need to announce over the air that a particular STA does or does not communicate outside the context of a BSS, and the use of this bit should be eliminated altogether from the standard.

Proposed Response Response Status O

Declined - Declined: see CID 72

CI 07 SC 7.3.2.29 P10 L53 # 144159
 Fischer, Matthew Broadcom

Comment Type TR Comment Status X

Where are the default values for the non-BSS case?

SuggestedRemedy

Provide guidance on default values for EDCA parameter set for STAs outside of a BSS.

Proposed Response Response Status O

Declined - See Table 7-37a.

CI 07 SC 7.3.2.29 P7 L18 # 151063
 Stephenson, Dave Cisco

Comment Type TR Comment Status X

Adding the phrase "For an infrastructure BSS" leaves the use of this element undefined for IBSS operation.

SuggestedRemedy

Define how this element is used in IBSS operation.

Proposed Response Response Status O

Declined - Declined. The phrase was added for clarification, since an Infrastructure BSS was already implied because the EDCA parameter set was used by the AP.

CI 07 SC 7.3.2.29 P7 L29 # 151060
 Malarky, Alastair Mark IV IVHS

Comment Type ER Comment Status X

The form "set to" should be used when describing the action of setting. The style usage is clearer from the example "if X is true, then Y is set to TRUE". Here you are referring to actions to take based on the value of dot11OCBEnabled.

SuggestedRemedy

Change "for STAs with dot11OCBEnabled set to FALSE" to "for STAs where dot11OCBEnabled is false"

Proposed Response Response Status O

Declined - Declined - Actually, in this case, there is not really an action being taken, but rather the default values are used when the attribute is set to FALSE.

CI 07 SC 7.3.2.29 P8 L1 # 144108
 Perahia, Eldad Intel

Comment Type TR Comment Status X

I'm assuming that TGp is using a clause 17 PHY. If so, why does it not have a TXOP limit for AC_VI and AC_VO?

SuggestedRemedy

please clarify

Proposed Response Response Status O

Declined - For OCB operation, the TXOPs are limited to a single MSDU.

IEEE P802.11p D7.0 Wireless Access in Vehicular Environments (WAVE) comments

CI 07 SC 7.3.2.65 P8 L6 # 151064
 Roy, Richard SRA

Comment Type TR Comment Status X

The information element contains an estimated difference (offset) in Time values, not a Time value. It is also missing optional higher order terms.

SuggestedRemedy

The Time Value field should be renamed (it previously was an offset) and the optional higher terms (linear and quadratic) added (see 11-08/1165rx).

Proposed Response Response Status O

Declined - Declined. This is the language that was agreed upon with TGU and TGv.

CI 07 SC 7.3.2.80 P8 L17 # 144110
 Thomson, Allan Cisco Systems

Comment Type TR Comment Status X

The advertisement of time was added to TGv. This new element in TGp duplicates much of that functionality. Secondly, the complexity of this new element is far beyond what is required.

SuggestedRemedy

Remove this timing element and just incorporate or rely on changes introduced to TGv to advertise time.

Proposed Response Response Status O

Declined - Per 802.11v D5.01, the Timing Measurement frame is an Action frame. 802.11p requires a Management frame so that hardware can properly set the Timestamp.

CI 07 SC 7.3.2.80 P8 L26 # 144115
 Perahia, Eldad Intel

Comment Type TR Comment Status X

The reserved field in the IE is unnecessary. Setting the length field to 16 should be sufficient and allow for future expansion. Future revisions could add additional fields and increase the length.

SuggestedRemedy

Remove reserved field. Also fix Table 7-26 entry.

Proposed Response Response Status O

Accepted - Accepted. See CIDs 82 and 114.

CI 07 SC 7.3.2.80 P8 L34 # 144118
 Stephens, Adrian intel

Comment Type TR Comment Status X

The structure of Figure 7-95a2 is very odd. I don't know whether to interpret the blanks as don't cares or some specific unmentioned value.

SuggestedRemedy

Restructure it into a timing source subfield (b0-b2) a "timing source is available" field b3 and a reserved field b3-b7. Draw a diagram showing these three subfields. Then describe the encoding of the subfields below the diagram, like elsewhere in the standard.

Proposed Response Response Status O

Counter - Counter: replace with descriptions of bit 3 and bits 5-7 (similar to 7.3.2.25.3 of the base document) and a table for bits 0-2.

CI 07 SC 7.3.2.80 P9 L1 # 144125
 Perahia, Eldad Intel

Comment Type TR Comment Status X

Time represented as an offset from TSF seems redundant especially since the field does not get any smaller by doing so. Time can be based of the same clock as TSF and still be presented in a different format. It would appear that the intent is to distribute a more accurate time (nanosecond resolution) than TSF since the offset and TSF are both present in the same frame, so this seems doubly redundant.

SuggestedRemedy

Remove the Timestamp field and represent as actual absolute time, not offset from TSF

Proposed Response Response Status O

Declined - The timestamp is required to transmit the most accurate time information possible.

CI 07 SC 7.3.2.80 P9 L13-1 # 125240
 Stephenson, Dave Cisco

Comment Type ER Comment Status X

Additional text would be much more helpful to the reader than only stating the information is outside the scope of this document. It would be VERY helpful to have an informative annex providing an overview of WAVE operation (i.e., describe setting up a WAVE BSS, discovering WAVE STAs and communication between them).

SuggestedRemedy

Add an informative annex.

Proposed Response Response Status O

Declined - This comment is deemed editorial and delegated to the document editor for consideration in developing future drafts. Please note that the IEEE standards are edited professionally prior to publication.

IEEE P802.11p D7.0 Wireless Access in Vehicular Environments (WAVE) comments

CI 07 SC 7.3.2.80 P9 L13-1 # 125241
Stephenson, Dave Cisco

Comment Type ER Comment Status X

Additional text would be much more helpful to the reader than only stating the information is outside the scope of this document. It would be VERY helpful to have references to IEEE 1609 series of specification.

SuggestedRemedy

Add entries to Annex P for IEEE

Proposed Response Response Status O

Declined - This comment is deemed editorial and delegated to the document editor for consideration in developing future drafts. Please note that the IEEE standards are edited professionally prior to publication.

CI 07 SC 7.3.2.80 P9 L8 # 144132
Roy, Richard SRA

Comment Type TR Comment Status X

The Timing information element is missing very valuable first and second order terms that account for different oscillator frequencies and drifts.

SuggestedRemedy

Add the optional first and second order terms and the descriptions as given in 11-08-1165-07-000p-timing-information-element.doc

Proposed Response Response Status O

Declined - Declined - see 11-09/0503r2

CI 07 SC 7.3.3.29 P7 L44 # 144106
Stephens, Adrian

Comment Type TR Comment Status X

"This EDCA parameter set shall be used by a STA transmitting a frame outside the context of a BSS unless overridden by the SME."

There are two problems with this: 1. Normative behaviour is deprecated in clause 7. There's a better home for this in clause 9.

2. what comprises "overridden by the SME"? Across what interface is this "overriding" communicated? How is the fact that it has taken place be recorded?

SuggestedRemedy

Specify solely in terms of the initial values of the MIB variables that control EDCA shall be set to the values in this table. If the SME comes along later and modifies them, that's up to the SME, and doesn't need to be described as an "overriding" operation.

Proposed Response Response Status O

Counter - Counter: remove the sentence in question. The previous sentence in the insertion mirrors language in the base document.

CI 07 SC 7.4.5 P8 L27 # 144116
Bumiller, George Research In Motion

Comment Type TR Comment Status X

Identical text to that in 7.3.2.26 "The IEEE currently assigns both 24-bit (OUI) and 36-bit (OUI-36 and IAB) public unique organization identifiers."

SuggestedRemedy

A standard should define an item `_once_`. Then refer to that location. This use of identical text is inappropriate in a standards. Remove it. Comment about the phrasing (re 7.3.2.26) would also apply, were it to be left.

Proposed Response Response Status O

Counter - Counter. Text to be removed but refer to 7.3.2.26 for definition of the field.

IEEE P802.11p D7.0 Wireless Access in Vehicular Environments (WAVE) comments

Cl 07 SC 7.4.5 P9 L1 # 151077
 Montemurro, Michael Research in Motion

Comment Type TR Comment Status X

By making the OUI variable (as well as the Vendor-specific content), it is impossible for the receiver to be able to parse the action frame header. Also, by accomodating different length OUI's in this manner, there is now a possibility that vendor-specific action frames can collide depending on the contents of the two fields.

SuggestedRemedy

Either create a new vendor-specific action to address OUI length > 3 or use an unassigned OUI (like FF-FF-FF), with an OUI length field, followed by the OUI in the vendor-specific IE.

Proposed Response Response Status O

Counter - Counter. See CID 50.

Cl 07 SC 7.4.5 P9 L1 # 151076
 Durand, Roger RIM

Comment Type TR Comment Status X

By making the OUI variable (as well as the Vendor-specific content), it is impossible for the receiver to be able to parse the action frame header. Also, by accomodating different length OUI's in this manner, there is now a possibility that vendor-specific action frames can collide depending on the contents of the two fields.

SuggestedRemedy

Either create a new vendor-specific action to address OUI length > 3 or use an unassigned OUI (like FF-FF-FF), with an OUI length field, followed by the OUI in the vendor-specific IE.

Proposed Response Response Status O

Counter - Counter. See CID 50.

Cl 07 SC 7.4.5 P9 L14 # 151082
 Malarky, Alastair Mark IV IVHS

Comment Type ER Comment Status X

Delete this sentence. Organization Identifier is defined in 7.3.1.21.

SuggestedRemedy

As per comment

Proposed Response Response Status O

Counter - Counter: remove the first "shall", say "and is" instead of the second "shall". Also, underline the text to be inserted.

Cl 07 SC 7.4.5 P9 L14 # 144138
 Stephenson, Dave Cisco

Comment Type TR Comment Status X

The changes to the vendor specific action frame make it un-parsable. The receiver of this frame has no way of knowing the length of the organizational identifier.

SuggestedRemedy

Add a new vendor specific action frame having a 36-bit organizational identifier so legacy implementations won't be affected by this change.

Proposed Response Response Status O

Declined - See response to CID 96

Cl 07 SC 7.4.5 P9 L18 # 144140
 Perahia, Eldad Intel

Comment Type TR Comment Status X

Show "3 or 5" (not "j") as the field length for OUI in Figure 7-101.

SuggestedRemedy

See comment and fix associated text reference to (j).

Proposed Response Response Status O

Declined - While currently the IEEE-RA has only extended the length of organizationally unique identifiers to 36-bits, there is nothing preventing them extending them in the future to exceed a 5-octet length. The proposed amended text is forward compatible in this regard.

IEEE P802.11p D7.0 Wireless Access in Vehicular Environments (WAVE) comments

Cl 07 SC 7.4.5 P9 L27 # 144142
Myles, Andrew Cisco

Comment Type TR Comment Status X

The text provides a mechanism to specify 5 octet OUI's, whereby the first three octets specifies whether the field is 3 or 5 octets.

It is not clear whether or not the method for using the first three octets to specify a field length of 5 octets is globally known.

* If it is then the drfat has effectively succeeded in creating a 2 octet OUI, which is clearly not very useful

* If it is not then it would have been better for the owner of the 3 octet OUI to just use a longer Vendor specific field

The bottom line is that this features appears to be ill thought out

SuggestedRemedy

Remove the 5 octet OUI capability

Proposed Response Response Status O

Declined - See response to CID 93

Cl 07 SC 7.5 P9 L20-5 # 125243
Stephenson, Dave Cisco

Comment Type TR Comment Status X

As far as I can tell from reading 802.11p-d4.0, a STA in WAVE Mode should not be permitted to transmit or receive management action frames.

SuggestedRemedy

Add a row in the table for management action frames and annotate same to show WAVE mode STA cannot transmit or receive them.

Proposed Response Response Status O

Declined - REJECT: 7.5 was removed as of 11n D6.0

Cl 09 SC 9.1.3.1 P10 L22 # 144152
Roy, Richard SRA

Comment Type TR Comment Status X

The text in this subclause of 802.11-2007 needs to be updated to clarify how EDCA parameter sets are handled outside the context of a BSS, specifically paragraph 3.

SuggestedRemedy

Add clarification to paragraph 3 of the base document.

Proposed Response Response Status O

Declined - Declined. Not clear why this needs to be done.

Cl 09 SC 9.8.1 P10 L34 # 144153
Roy, Richard SRA

Comment Type TR Comment Status X

The text in this subclause of 802.11-2007 needs to be updated to clarify how regulatory domain information is handled when communicating outside of a BSS. In particular, some notion of "known location" and the regulations that apply thereto needs to be added.

SuggestedRemedy

Make the suggested change.

Proposed Response Response Status O

Declined - Declined. Not clear why this needs to be done.

Cl 09 SC 9.9.1.2 P10 L29 # 151087
Engwer, Darwin Nortel Networks

Comment Type ER Comment Status X

"broadcast/multicast frames" is a non-standard IEEE 802 term.

SuggestedRemedy

Change to "group addressed frames"

Proposed Response Response Status O

Declined - Text changed to: broadcast or multicast. Note- "broadcast address" is defined in subclause 3.18 of IEEE Std 802.11-2007. "multicast" is defined in subclause 3.87 of IEEE Std 802.11-2007. In addition, the terms are defined in IEEE Std 100 - dictionary for IEEE stds. Perhaps this comment should better be addressed to TGmb. In IEEE Std 802.11-2007 there are 72 instances of "broadcast/multicast".

Cl 09 SC 9.9.1.2 P10 L30 # 151088
Engwer, Darwin Nortel Networks

Comment Type ER Comment Status X

"broadcast/multicast frames" is a non-standard IEEE 802 term.

SuggestedRemedy

Change to "group addressed frames"

Proposed Response Response Status O

Declined - See CID 87 Resolution.

IEEE P802.11p D7.0 Wireless Access in Vehicular Environments (WAVE) comments

Cl 09 SC 9.9.1.2 P10 L31 # 151089
Engwer, Darwin Nortel Networks

Comment Type ER Comment Status X

"broadcast/multicast frames" is a non-standard IEEE 802 term.

SuggestedRemedy

Change to "group addressed frames"

Proposed Response Response Status O

Declined - Declined - "broadcast address" is defined in subclause 3.18 of IEEE Std 802.11-2007. "Multicast" is defined in subclause 3.87 of IEEE Std 802.11-2007.

Cl 09 SC 9.9.1.2 P10 L44 # 144154
Roy, Richard SRA

Comment Type TR Comment Status X

The text in this subclause of 802.11-2007 needs to be updated to clarify how TXOP limits are handled outside the context of a BSS, specifically paragraph 2.

SuggestedRemedy

Clarify, in paragraph 2, how TXOP limits are set when there are no Beacon or Probe response frames sending EDCA parameter sets.

Proposed Response Response Status O

Declined - Declined. Not clear why this needs to be done.

Cl 09 SC 9.9.1.3 P10 L37 # 151105
Stephenson, Dave Cisco

Comment Type TR Comment Status X

Add the phrase, "In an infrastructure BSS" leaves the usage of the EDCA parameter element undefined in IBSS operation.

SuggestedRemedy

Define proper usage in IBSS operation.

Proposed Response Response Status O

Declined - Declined. See CID 63 (regarding 7.3.2.29)

Cl 10 SC 10.3 P11 L11 # 144162
Roy, Richard SRA

Comment Type TR Comment Status X

The SET and INC TSF timer primitives were removed unnecessarily and should be replaced. There were no comments suggestion they had to be removed; only comments requesting explanation. These primitives provide very useful functionality in the external time reference distribution mechanism enabled by the TA frame and the TIE.

SuggestedRemedy

Restore the SET and INC TSF timer primitives as they were in D5.0 and earlier going back two years. The explanation material on their use to be added is found in 11-08-1165-07-000p-timing-information-element.doc

Proposed Response Response Status O

Declined - Declined. "Roll-over" is not a problem given proper implementation. Other arguments for this aren't clear.

Cl 10 SC 10.3.29.3.2 P13 L25 # 151114
Malarky, Alastair Mark IV IVHS

Comment Type ER Comment Status X

Provide the 4th row of the table.

SuggestedRemedy

As per comment

Proposed Response Response Status O

Declined - The VSIE row has not changed. From experience it is better to NOT include unchanged text unless needed for clarity.

IEEE P802.11p D7.0 Wireless Access in Vehicular Environments (WAVE) comments

Cl 10 SC 10.3.42.1.2 P17 L20-5 # 125286
Stephenson, Dave Cisco

Comment Type TR Comment Status X

This primitive does not define what Beacon interval to use in an On-demand beacon. The beacon interval is a required field for any beacon frame and thus this information must be provided. The text in 10.3.42.1.4 suggests that the receipt of this primitive causes a single beacon frame to be transmitted.

If this is the case, then I don't see a way to indicate a non-repetitive beacon field (clause 7.3.1.3 doesn't define a way to specify a non-repeated beacon). Legacy STAs may not be able to interpret a non-repetitive beacon frame (e.g., when TBTT is undefined). If so, this is a backwards compatibility issue that needs to be resolved.

SuggestedRemedy

Add text to specify the beacon interval and describe how legacy STAs will be compatible with an on-demand beacon.

Proposed Response Response Status O

Counter - Removed On-demand beacon and therefore clauses 10.3.42

Cl 10 SC 10.3.42.1.4 P18 L15-1 # 125299
Stephenson, Dave Cisco

Comment Type TR Comment Status X

The text states, ". BSS or WAVE BSS by transmitting an On-Demand beacon frame". This text is imprecise.

SuggestedRemedy

Clarify the text by stating whether this is exactly 1 beacon frame (i.e., TBTT is undefined) or a short sequence of beacon frames or something.

Proposed Response Response Status O

Counter - Removed On-demand beacon and therefore clauses 10.3.42

Cl 10 SC 10.3.9.1.4 P11 L14 # 151092
Roy, Richard SRA

Comment Type TR Comment Status X

Text reads: "If dot11OCBEnabled is set to TRUE and if the SetDefaultMIB parameter is set to FALSE, MAC operation shall resume in less than 2 TU after the STAAddress parameter is changed." and now places a timing performance requirement on a MIB variable that is meant to indicate an added communication capability. Furthermore, it begs the question, what if the MIB variable is FALSE? It doesn't seem logical to to condition a time constraint on a dynamic variable that has nothing to do with the implementation of the state change.

SuggestedRemedy

Remove the conditioning on the OCB MIB variable since the speed with which the MAC reset is accomplished should be independent of whether or not the STA can communicate outside the context of a BSS. If necessary, e.g. for backward compatibility, make this optional and add a mechanism for making it so in the PICS. Make a similar change in 11.19 where a similar statement is made.

Proposed Response Response Status O

Declined - Declined. The conditioning was requested by a previous commenter on a previous ballot.

Cl 10 SC 10.3.9.1.4 P12 L28 # 125263
Roy, Richard SRA

Comment Type TR Comment Status X

WAVE is not a separate "mode" of operation of a STA. The WAVE amendment provides additional specifications that allow STAs to communicate (i.e., send data, management, and control frames) outside the context of any BSS.

SuggestedRemedy

Replace the inserted text with "For WC STAs operating outside the context of a BSS, if the MIB attributes are not being set to their default values, MAC operation shall resume in less than 2 TUs after the STAAddress parameter is changed."

Proposed Response Response Status O

Counter - COUNTER: ACCEPT IN PRINCIPLE New wording reflects the intent of this suggestion.

IEEE P802.11p D7.0 Wireless Access in Vehicular Environments (WAVE) comments

Cl 11 SC 11.18 P20 L49 # 125319
Amann, Keith Polycom Inc.

Comment Type TR Comment Status X

This clause makes several statements which imply that devices operating in a WAVE mode of operation are not really doing 802.11, but instead are doing WAVE, and that the two of these should not cross (statements such as "A station operating in WAVE mode shall not join an infrastructure BSS or IBSS"). This implies that WAVE is really something different from 802.11.

SuggestedRemedy

Move to disband the 802.11p task group and unanimously adopt the motion.

Proposed Response Response Status O

Counter - COUNTER While we do not agree with the suggested remedy, we agree with the commenter that a STA using the WAVE capability to operate outside the context of a BSS may also be a member of an infrastructure BSS as shown in the changes to clause 11.18 made to our draft as a result of the resolution in IEEE 802.11-08/1024r7.

Cl 11 SC 11.18 P20 L51 # 125321
Adachi, Tomoko Toshiba Corporation

Comment Type TR Comment Status X

"A STA in WAVE mode may communicate . outside of the context of a BSS." Do not introduce such kind of behavior. It will be unable to manage.

SuggestedRemedy

Remove the exeption throughout the draft.

Proposed Response Response Status O

Declined - DECLINED While we cannot accept this comment, since this "exception" is actually the fundamental change we need, we hope the changes made to our draft, specifically as a result of the resolution in IEEE 802.11-08/1024r7, will make operation more clear to the commenter.

Cl 11 SC 11.18.3 P22 L7 # 125371
Adachi, Tomoko Toshiba Corporation

Comment Type TR Comment Status X

"MAC sublayer synchronization is not required for a STA operating in a WAVE BSS." Why? How do STAs know which information is new or old?

SuggestedRemedy

Require synchronization at MAC layer.

Proposed Response Response Status O

Counter - This comment is considered "overcome by events" (OBE) with the passing of the motion in 11-08-1024-07-000p-no-wbss-no-beacon-comment-resolution.doc. Please see this document and the updated P802.11p draft.

Cl 11 SC 11.19 P17 L11 # 144182
Stephens, Adrian intel

Comment Type TR Comment Status X

"When dot11OCBEnabled is false a STA shall not transmit data frames outside the context of a BSS."

"Outside the context of a BSS" is not defined. Elsewhere it has been replaced with "when dot11OCBEnabled is true", which makes no sense here.

SuggestedRemedy

Remove the cited text - it specifies nothing.

Proposed Response Response Status O

Counter - Counter. In 5.2.11, the phrase "transmit data frames outside the context of a BSS" is a synonym for a STA that is not a member of a BSS transmitting a data frame. But will replace the text with that synonym.

Cl 11 SC 11.19 P17 L11 # 144181
Perahia, Eldad Intel

Comment Type TR Comment Status X

"When dot11OCBEnabled is false a STA shall not transmit data frames outside the context of a BSS." This statement seems to conflict with concept of class 1 frames.

SuggestedRemedy

delete sentence

Proposed Response Response Status O

Counter - Counter, see CID 182

Cl 11 SC 11.19 P17 L12 # 144183
Roy, Richard SRA

Comment Type TR Comment Status X

The ability to exchange data frames (and all other frames for that matter) is a potentially useful capability in many 802.11 WLAN deployments regardless of the state of other links currently in use. To date, no valid technical reason for prohibiting the use of this very generic capability in all conditions has been tendered. In fact, a recent poll of knowledgeable members of the WG concluded that such a capability could successfully coexist with all other legacy 802.11 link states (cf. BSS, IBSS links). As written, the material in this subclause intends to prohibit the general use of this very useful functionality. It should be rewritten to allow coexistence with current legacy link states.

SuggestedRemedy

Rewrite the clause to permit simultaneous operation of BSS and non-BSS links.

Proposed Response Response Status O

Declined - Declined.

IEEE P802.11p D7.0 Wireless Access in Vehicular Environments (WAVE) comments

Cl 11 SC 11.19 P17 L13 # 144185
 Stephens, Adrian intel
 Comment Type TR Comment Status X
 "shall be regarded". Ah, Jim me lad, I left my regarding irons behind - can I borrow yours?
 How do you test "regarding". What do you really mean in terms of testable normative behaviour?
 With Best Regards, A.N.Commenter
 SuggestedRemedy
 Specify something that can be tested, or remove the cited language.
 Proposed Response Response Status O
 Counter - Counter. Delete the text. The procedure for how to "regard" a STA when dot11OCBEnabled when isn't defined is already described in 5.2.11.

Cl 11 SC 11.19 P17 L17 # 144187
 Stephens, Adrian intel
 Comment Type TR Comment Status X
 "Whenever MAC and PHY sublayer parameters are changed, MAC and PHY sublayer operation shall resume with the appropriate MIB attributes in less than 2 TU."
 This statement has two problems:
 1. It is made, independent of OCBEnabled - i.e. applies to all future and past implementations of non-11p devices. i.e. it may make existing devices non-compliant.
 2. It is too general. Which MIB variables are being changed? What does "shall resume" mean?
 This is way too lazy. If you need specific behaviour, specify it.
 SuggestedRemedy
 Limit to .11p devices. Specify which MIB variables are included in this. Specify what behaviour is implied by "shall resume". Or remove the cited text.
 Proposed Response Response Status O
 Counter - Counter: limit to dot11OCBEnabled set to TRUE.

Cl 11 SC 11.19 P18 L7 # 151127
 Roy, Richard SRA
 Comment Type TR Comment Status X
 This clause (and the clause 5 description) restricts OCB data frames to having the Address field set to only one value, and does not allow BSS and OCB links to exist simultaneously in a STA,
 SuggestedRemedy
 Remove the restriction on the Address 3 field so that MAC forwarding (a very valuable feature) can be implemented .
 Proposed Response Response Status O
 Declined - Declined. This was previously agreed-upon and is the prevailing direction given by TGp.

Cl 11 SC 11.19 P18 L8 # 151128
 Roy, Richard SRA
 Comment Type TR Comment Status X
 This clause restricts OCB data frames to having the Address field set to only one value, and does not allow BSS and OCB links to exist simultaneously in a STA,
 SuggestedRemedy
 Remove the restriction on simultaneous OCB and BSS operation since it's a valuable capability to have, there are no technical reasons why it can not be accomplished, and because it's not testable reliably for a variety of reasons. In accomplishing this, dot11OCBEnabled can (probably) be eliminated from the draft since there is no longer a need to distinguish OCB from BSS operations. This will also eliminate the confusion surrounding the thinking that 11p is introducing a new STA "state" or operational "mode", neither of which are useful constructs (hence the confusion). Where necessary for the PICS, suitably named variable can be inserted.
 Proposed Response Response Status O
 Declined - Declined. This was previously agreed-upon and is the prevailing direction given by TGp.

IEEE P802.11p D7.0 Wireless Access in Vehicular Environments (WAVE) comments

Cl 11 SC 11.a P20 L46 # 141154
 Roy, Richard SRA

Comment Type TR Comment Status X

The first paragraph of 11.a contains language that prohibits functionality that should be allowed.

SuggestedRemedy

Replace the first paragraph with: "A STA in which dot11OCBEnabled is set to true may transmit and receive (i.e., exchange) data frames outside of the context of a BSS, and may do so without first synchronizing or employing scanning or MAC sublayer authentication or association procedures. In situations where scanning has not been performed, the SME of a STA capable of and intending to exchange data frames with other such STAs outside the context of a BSS will initially configure the PHY with parameters (frequency, bandwidth, data rate, etc.) known a priori via mechanisms outside the scope of this standard (see 5.2.2a). A STA that communicates outside the context of a BSS shall use only one EDCA parameter set for accessing the medium on the current channel. The EDCA parameter set used outside the context of a BSS is either the default EDCA parameter set specified in table 7-37a or it is set by the SME in dot11EDCATable. A STA may be a member of a BSS and also exchange data frames outside the context of a BSS. When dot11OCBEnabled is false, a STA shall not exchange data frames outside the context of a BSS. STAs that do not have dot11OCBEnabled defined operate as if dot11OCBEnabled were set to false."

Proposed Response Response Status O

Counter - Counter. This comment includes more detailed initialization information that has been incorporated in the text in this submission, but asserts a capability to exchange infrastructure BSS frames while dot11OCBEnabled is true that was not the intent of the majority of the TGp group when the MIB attribute was defined.

Cl 11 SC 11.a.1 P21 L6 # 160
 Roy, Richard SRA

Comment Type TR Comment Status X

This subclause should describe how the timing information is used in addition to how the timestamp is generated.

SuggestedRemedy

Remove subclausue 11.a.1 and replace it with the following subclause: " 11.6.2a Use of the Timing and Information management frame for distributing time from an external clock
 The main purpose of the Timing and Information management frame is to provide a mechanism whereby a STA can send to other STAs sufficient information in a single management frame to allow the receiving STAs to estimate the time being kept by an external clock (other than the TSF timer) on the transmitting STA. This is accomplished using the timestamp parameter in the transmitted frame in conjunction with the Timing Information Element (TIE) which contains the information necessary to adjust the TSF timer of the transmitting STA to match the output of the transmitting STAs external clock. A STA that is transmitting a Timing and Information frame shall set the value of the timestamp parameter to the value of the STA's TSF timer at the time that the data symbol containing the first bit of the timestamp is transmitted to the PHY plus the transmitting STAs delays through its local PHY from the MAC-PHY interface to its interface with the WM. A Timing and Information frame is generated by a STA's MLME in response to receiving an MLME-TIMING_INFO.request from the STA's SME. After generating the frame, the MLME returns an MLME- TIMING_INFO.confirm to the SME."

Proposed Response Response Status O

Counter - Counter. Remove subclause 11.a.1. But setting the Timestamp is discussed in 11.6a.

Cl 17 SC 17.3.10.2 P23 L1 # 125394
 Inoue, Yasuhiko NTT

Comment Type TR Comment Status X

Table 17-13a "WAVE enhanced receiver performance requirements" specifies requirements only for adjacent channel rejection and non-adjacent channel rejection for each combination of modulation and coding scheme.

There should be requirements for the minimum receiver sensitivity for each MCS depending on the channel bandwidth.

SuggestedRemedy

Add minimum receiver sensitivity requirements.

Proposed Response Response Status O

Counter - Agree in principle. Note TGp is not changing the sensitivities already defined. See Table 17-13. TGp will add the sentence: "The corresponding minimum receiver sensitivities for each modulation and coding rate are the same as in table 17.13" to the end of the paragraph in 17.3.10.2 and 17.3.10.3 in 802.11p D 4.0.

IEEE P802.11p D7.0 Wireless Access in Vehicular Environments (WAVE) comments

Cl 17 **SC 17.3.10.2** **P23** **L10** # **125399**
 Fischer, Matthew Broadcom

Comment Type **TR** **Comment Status** **X**

Adjacent channel rejection requirement seems too stringent.

SuggestedRemedy
 Reduce ACR requirement by about 10dB.

Proposed Response **Response Status** **O**
 Counter - Please see resolution for Comment 395 and document 08-0982 for further details.

Cl 17 **SC 17.3.8.8** **P21** **L37** # **141169**
 Roy, Richard SRA

Comment Type **TR** **Comment Status** **X**

WAVE adds a single temperature range for automotive and outdoor environments -40 to 85 degC. This is automotive temperature grade 3 (AEC-Q100). Grades 2 and 1 are missing and should be included as optional automotive environment temp ranges since such temperatures can be experienced (for example on the dashboards of cars sitting in the sun).

SuggestedRemedy
 Add grades 1 (-40 to 125 degC) and 2 (-40 to 105 degC) from AEC-Q100 to the clause and the PICS and make them optional.

Proposed Response **Response Status** **O**
 Declined - Declined after extensive discussion. Present Type 4 based on SAE standards for "Automotive" environments

Cl A **SC A.4.4.1** **P21** **L45** # **151150**
 Malinen, Jouni

Comment Type **TR** **Comment Status** **X**

How can PC37 be optional but its sub-entries PC37.1, PC37.2, and PC37.3 be mandatory if CF8=Yes? Shouldn't the sub-entries be conditional on PC37?

SuggestedRemedy
 Replace "PC37" with "* PC37". Replace "O" with "CF18:M" (or CF18:O?) in the Status column for PC37. Replace "CF18:M" with "PC37:M" in PC37.1, PC37.2, and PC37.3 rows.

Proposed Response **Response Status** **O**
 Declined - PC37 does not refer to a specific PHY, whereas PC37.1, PC37.2, and PC37.3 are dependent on CF18 which ties the MIB variable to CF17.

Cl All **SC All** **P100** **L100** # **125477**
 Roy, Richard SRA

Comment Type **TR** **Comment Status** **X**

WAVE is not a separate "mode" of operation of a STA. The WAVE amendment provides additional specifications that allow STAs to communicate (i.e., send data, management, and control frames) outside the context of any BSS. For example, in addition to all the normal 802.11 functionality, WAVE capable STAs can send data frames without first having to join a BSS.

SuggestedRemedy
 Replace "STAs in WAVE mode" with "WC STAs" and add a definition of WAVE capable STA (WC STA) as a STA capable of transmitting and receiving data, control, and management frames outside the context of a BSS. WC STAs have dot11WAVECapable set to true. Also rewrite the intro to reflect the contents of the recommended change.

Proposed Response **Response Status** **O**
 Counter - This comment is considered "overcome by events" (OBE) with the passing of the motion in 11-08-1024-07-000p-no-wbss-no-beacon-comment-resolution.doc. Please see this document and the updated P802.11p draft.

Cl All **SC All** **P25** **L41** # **141184**
 Roy, Richard SRA

Comment Type **TR** **Comment Status** **X**

A MIB variable (dot115.9GHzImplemented) is missing for the conditioning of the optional requirements for 5.9GHz operation such as the extended temperature ranges, the optional increased rx sensitivities, and the tx masks for 5.9GHz.

SuggestedRemedy
 Add the MIB variable dot115.9GHzImplemented so that the PICS can have all the optional 5.9GHz stuff conditioned on some MIB variable.

Proposed Response **Response Status** **O**
 Declined - Declined: we decided not to add dot115.9GHzImplemented in the 1/15/09 telecon

Cl Annex **SC Annex A** **P25** **L51** # **151153**
 Ecclesine, Peter Cisco Systems

Comment Type **TR** **Comment Status** **X**

OF1.7 Status should be CF11:O, CF15&DSE2(start underscore), CF17(end underscore):M

SuggestedRemedy
 per comment

Proposed Response **Response Status** **O**
 Counter - The Text was changed to reflect the intent of the commenter: CF11:O, CF15&CF17&DSE2:M

IEEE P802.11p D7.0 Wireless Access in Vehicular Environments (WAVE) comments

Cl Annex SC Annex D **P27** **L26** # **141198**
 Adachi, Tomoko Toshiba Corporation

Comment Type **TR** **Comment Status** **X**
 dot11PHYType already contains "ht(7)".

SuggestedRemedy
 Add "ht(7)" in line 26. Add "HT=07" in line 33.

Proposed Response **Response Status** **O**
 Counter - Deleted changes to dot11PhyType and dot11PhyType2

Cl Annex SC Annex D **P27** **L42** # **141200**
 Adachi, Tomoko Toshiba Corporation

Comment Type **TR** **Comment Status** **X**
 Why do you need to define a new attribute "dot11PHYType2" and use that instead of dot11PHYType? If that is necessary for WAVE, the use should be limited. The change shown here will apply to all the cases.

SuggestedRemedy
 Delete "dot11PHYType2".
 Or restrict its use to dot11WAVEEnabled=true. Reflect related changes in dot11PHYOperationComplianceGroup.

Proposed Response **Response Status** **O**
 Counter - Deleted changes to dot11PhyType and dot11PhyType2

Cl Annex SC Annex D **P28** **L6** # **141202**
 Adachi, Tomoko Toshiba Corporation

Comment Type **TR** **Comment Status** **X**
 Why does all the 802.11 PHY have to include dot11TempType2?

SuggestedRemedy
 Restrict it to dot11WAVEEnabled=true.

Proposed Response **Response Status** **O**
 Declined - Declined: the 802.11 PHY contains dot11TempType, so it contains dot11TempType2

Cl Annex I SC Annex I.2.3 **P33** **L52** # **125448**
 Roy, Richard SRA

Comment Type **TR** **Comment Status** **X**
 The section is intended to provide default transmit spectral masks for various classes (max tx power levels) of operation. They do not specify tx spectrum. Furthermore, without a res BW specified, and without a specification as to how to apply the masks to measured tx spectra, the specifications are not very useful.

SuggestedRemedy
 Change the text to read: "For operation in the 5.85-5.925GHz bands in the US, the following default transmit spectral masks apply." Add a res BW with which the measurements must be made, and describe how the masks are to be applied to the measured spectra so compliance can be unambiguously determined. In addition, D10.0 of 11y removes the first paragraph of I.2.3 and replaces it with:"Transmit spectrum masks defined in regulation are described here for information only, and are subject to change or revision at any time." Change this text to read: "The transmit spectrum masks given here are those for the indicated regulatory domains and are provided for information only. These masks are subject to change or revision at any time, and, in all circumstances, relevant regulatory specifications must be met."

Proposed Response **Response Status** **O**
 Counter - Revised text proposed addresses the fact that some of the requirements are driven by technical reasons and should be normative.

Cl Annex J SC Annex J **P32** **L32** # **144226**
 Roy, Richard SRA

Comment Type **TR** **Comment Status** **X**
 Table J-2 should have a 30MHz channel set for the European allocation.

SuggestedRemedy
 Add a 30 MHz channel set.

Proposed Response **Response Status** **O**
 Declined - This request was previously dealt with in resolution to LB125, and declined. To implement such a change requires not just an entry into a table in J, but also that the PHY characteristics for 30MHz channel spacing be defined.
 This request is outside the scope of TGp

IEEE P802.11p D7.0 Wireless Access in Vehicular Environments (WAVE) comments

CI Annex J SC Annex J P32 L37 # 151157
 Perahia, Eldad Intel

Comment Type TR Comment Status X

If TGp is successful in the marketplace, future systems in the 5.9 GHz band will have great difficulty dealing with legacy TGp deployments on partially overlapping channels, just as TGn had difficulty dealing with partially overlapping 11b/g systems. The rationale that 5.9 GHz band is licensed and can be managed is not acceptable. Both 4.9 GHz and 3.65 GHz bands are licensed and TGj and TGy specified non-overlapping channels.

SuggestedRemedy

Disallow partial overlapping 20 MHz channels. Disallow partial overlapping 10 MHz channels. Refer to 802.11-2007, 802.11y, and 802.11n D10.0 as to how to properly define channel sets.

Proposed Response Response Status O

Counter - Counter. Change superscripted footnote "1" to "1,2" to Regulatory Classes 17 and 18 of Table J-1 (row 2 &3) and to Regulatory Classes 14 and 15 of Table J-2 (rows 2 & 3). After footnote 1 below Table J-2, add a footnote 2 which reads: "Within in the same Regulatory Class, the channels in use in any location shall be non-overlapping."

CI Annex J SC Annex J P33 L17 # 151171
 Malarky, Alastair Mark IV IVHS

Comment Type TR Comment Status X

The channel set for regulatory class 17 in Table J-2 should be deleted. I do not agree with the changes that were made between 11-09/0488r3 and 11-09/0488r4.

SuggestedRemedy

Delete regulatory class 16 in Table J-2. Update J.2.2

Proposed Response Response Status O

Counter - Counter. The row with Regulatory Class 16 (10MHz) has been deleted by CID #122. The row with Regulatory Class 17 (20MHz) has been aligned with the .11a/n legacy in the 5.475-5.7GHz ISM band due to LB144 comments on Draft 6.0 with regard to aligning with the .11 baseline.

CI Annex J SC Annex J P33 L18 # 151172
 Erceg, Vinko Broadcom

Comment Type TR Comment Status X

Regulatory class 16 is indicated in the bottom of the table as corresponding to the 5.9 GHz band.

SuggestedRemedy

Please correct, remove superscript "1".

Proposed Response Response Status O

Counter - Counter. Same as CID #123.

CI Annex J SC Annex J P33 L38 # 151173
 Roy, Richard SRA

Comment Type TR Comment Status X

40MHz channels were in D6.0 and have been removed in D7.0. There is no technical reason for doing so, and the inclusion of 40MHz channels could be very useful going forward in the 5.9 band. The argument for removal apparently arose from belief that the 802.11 single channel MAC/PHY standard is responsible for specifying how a system implementer might deploy an 802.11 system using multiple channels. While implementation of MAC/PHY functionality that allows the successful deployment of such systems is well within the scope of 802.11, the description of how this accomplished at the system level is informative at best, but in either case, well outside the scope of 802.11. In particular, it is up to those implementing the system to set the "rules of multichannel operation" and if overlapping channels are desirable, they should be implementable and allowed.

SuggestedRemedy

Reinsert the 40MHz channels in the channel sets as in D6.0.

Proposed Response Response Status O

Declined - Reject. Same as CID #166.

CI Annex J SC Annex J P33 L4 # 151163
 Kobayashi, Mark Broadcom Corp

Comment Type TR Comment Status X

(Ln 4-37) Defining 5 MHz increments for 20 MHz channels in the 5.9 GHz band may create problems with channels that are partially overlapping.

SuggestedRemedy

Please provide larger increments to address the partial overlap issue.

Proposed Response Response Status O

Counter - Counter. See resolution for CID #157.

IEEE P802.11p D7.0 Wireless Access in Vehicular Environments (WAVE) comments

Cl Annex J SC Annex J P33 L4 # 151166
 Erceg, Vinko Broadcom

Comment Type TR Comment Status X
 (Table J.2) Why was 40 MHz spacing removed from channel 102-138 operation?

SuggestedRemedy
 Please justify or include 40 MHz spacing (It was present in the Draft 6.0)

Proposed Response Response Status O
 Declined - Reject. Neither the FCC nor the ETSI EN 302571 allow for 40MHz channels in the 5.85-5.925 GHz band. In the 5.475-5.75 GHz band, the 40MHz channels are defined in the 802.11 baseline. In addition, the 40MHz feature was deleted due to LB144 comments on Draft 6.0, as both the co-existence mechanism and the rules that determine when 40MHz frames may be transmitted in the 802.11n draft do not pertain to 802.11p where an AP is not used when the OCBEabled MIB variable is TRUE. Note also, in Annex A.4.3, that CF17 and CF18 depend on CF6, CF8, CF10, and CF 11 and not CF16.

Cl Annex J SC Annex J P33 L4 # 151164
 Erceg, Vinko Broadcom

Comment Type TR Comment Status X
 (Tab J.1, J.2) In 5.9 GHz band, 20MHz channels are defined in 5 MHz increments. This may create problems when channels are partially overlapping.

SuggestedRemedy
 Please address partial overlap issue by choosing larger increments, for example.

Proposed Response Response Status O
 Counter - Counter. See resolution for CID #157.

Cl Annex J SC Annex J P33 L4 # 151160
 Perahia, Eldad Intel

Comment Type TR Comment Status X
 If TGp is successful, future systems in the 5.9 GHz band will have great difficulty dealing with legacy TGp deployments on patially overlapping channels, just as TGn had difficulty dealing with patially overlapping 11b/g systems. The rationale that 5.9 GHz band is licensed and can be managed is not acceptable. Both 4.9 GHz and 3.65 GHz bands are licensed and TGj and TGy specified non-overlapping channels.

SuggestedRemedy
 Disallow partial overlapping 20 MHz channels. Disallow partial overlapping 10 MHz channels. Refer to 802.11-2007, 802.11y, and 802.11n D10.0 as to how to properly define channel sets.

Proposed Response Response Status O
 Counter - Counter. See resolution for CID #157.

Cl Annex J SC Annex J P37 L17 # 151177
 Ecclesine, Peter Cisco Systems

Comment Type TR Comment Status X
 Table J.2 Regulatory class 16 is not in the 5.9 GHz band, and should not have footnote 1.

SuggestedRemedy
 Delete footnote 1 from Regulatory class 16.

Proposed Response Response Status O
 Counter - Counter. Same as CID #123.

Cl Annex J SC Annex J P37 L27 # 151178
 Ecclesine, Peter Cisco Systems

Comment Type TR Comment Status X
 Table J.2 Regulatory class 17 should not have TPC and DFS Behaviors.

SuggestedRemedy
 Delete Behaviors 3 and 4 from Regulatory class 17.

Proposed Response Response Status O
 Counter - Counter. Superceded by CID #122. This comment refers to Regulatory Class 16 in Draft 7.0. Both Regulatory Classes 16 and 17 should have had Behavior Sets 3 and 4 for DFS and TPC. However, the row with Regulatory Class 16 (10MHz) has been deleted by CID #122. The row with Regulatory Class 17 (20MHz) from Draft 7.0 has Behavior Sets 3 and 4 included. The former Regulatory Class 17 has been renumbered as Regulatory Class 16. No change is necessary.

Cl General SC General P100 L1 # 141219
 Ecclesine, Peter Cisco Systems

Comment Type TR Comment Status X
 The scope of this amendment is restricted to 5 GHz bands. The phrase "outside the context of a BSS" is beyond the scope of the PAR, and should be changed to some statement that is within scope.

SuggestedRemedy
 Rewrite this phrase using language that is clearly restricted to operation within the scope of the 802.11p PAR.

Proposed Response Response Status O
 Declined - See doc: 11-09-0020 and response in CID 10.

IEEE P802.11p D7.0 Wireless Access in Vehicular Environments (WAVE) comments

CI **General** SC **General** P100 L1 # 141216
 Adachi, Tomoko Toshiba Corporation

Comment Type **TR** Comment Status **X**

I disagree with the resolutions to my comments, CIDs 481, 482 and 483, in the previous ballot.
 IEEE1609.4 covers the MAC layer. It is not only for higher layers. And it is related to WAVE.
 Why do the two, 802.11p and 1609.4, have to split the WAVE issues in the same MAC layer? If WAVE wants to use 802.11, all the issues related to MAC and PHY layers should be specified in 802.11p.

SuggestedRemedy

As in comment.

Proposed Response Response Status **O**

Declined - The comment relates a concern about interference within overlapping systems. As a part of the response in 08-0584, this is an implementation issue (shared with every other 802.11 implementation) and the standard, and thus this amendment, is not the place to provide such explanations or usage guidance. See Document 09-0185 for further details.

CI **General** SC **General** P100 L1 # 144242
 Adachi, Tomoko Toshiba Corporation

Comment Type **TR** Comment Status **X**

I disagree with the resolution to my comment CID 216 in the previous ballot. Reliability should be a key feature to WAVE, but it is said that the solution to interference with overlapping BSSs depends on implementation. If there is a probability or expectation to do multi-channel operation, it is clear to be worse. The issue should be addressed somewhere and as the access mechanism is based on 802.11, 802.11p should be the place.

SuggestedRemedy

As in comment.

Proposed Response Response Status **O**

Declined - We are neither altering nor undermining the basic 802.11 methods for accessing the channels. We are typically communicating STA to STA without a BSS.

CI **General** SC **General** P100 L10 # 125463
 Amann, Keith Polycom Inc.

Comment Type **TR** Comment Status **X**

There are several locations throughout the document that discuss setting and retrieving the TSF timer, with no explanation as to why this is required. Under a normally operating 802.11 network this information is required in order to synchronize the STAs for purposes of frame transfer, power saving, etc. The based standard provides clear explanations of why this is necessary.

SuggestedRemedy

Since there appears to be no reason for this functionality (from what I am able to determine) remove all references to timer information, including the MLME interface definitions in clause 10. Alternatively, provide some explanation as to why this is required, possibly as an information annex or clause.

Proposed Response Response Status **O**

Declined - See note in 10.3.25c.1.3. "This command can be used by higher layer functions to help synchronize the TSF timer to external clock sources such as UTC time from a GPS unit."

CI **General** SC **General** P100 L10 # 125462
 Amann, Keith Polycom Inc.

Comment Type **TR** Comment Status **X**

There appears to be no security mechanisms for transport of data within a WAVE.

SuggestedRemedy

Define a security mechanism for use by WAVE. I cannot propose a more specific solution as I lack some of the knowledge necessary to do so, but this seems like a glaring hole in the specification given the security concerns of todays industry.

Proposed Response Response Status **O**

Declined - Subclause 5.2.2a in P802.11p/D4.0 specifies "The need to enter WAVE mode is determined by upper layers, which are also responsible for system management and security"

IEEE P802.11p D7.0 Wireless Access in Vehicular Environments (WAVE) comments

Cl General SC General **P100** **L17** # 125471
 Fischer, Matthew Broadcom

Comment Type TR **Comment Status X**

There is an instance within 7.1.3.5.5 of how a behavior or restriction or allowance of something is described with reference to a STA being associated in a BSS, and you have noted that you need to add the instance of a STA operating in WAVE mode in order to ensure that a WAVE mode STA can also perform that particular action. I suspect that there must be dozens of other such instances of behavioral descriptions within the baseline that must similarly be updated.

SuggestedRemedy

Find and update any instances of behavior that a WAVE mode STA wishes to perform but for which the existing baseline language would not permit because of the qualification that a STA wishing to perform such behavior needs to be associated with a BSS or QBSS. One of my other comments addresses one of those instances.

Proposed Response **Response Status O**

Counter - See updated text in latest draft.

Cl General SC General **P100** **L3** # 144244
 Durand, Roger RIM

Comment Type TR **Comment Status X**

The "dot11OCBenabled" operation is poorly defined thru-out the 11p draft 6.0 doc. Relative to standards expectations for completeness relative to the basic concept of why we need to do this.

SuggestedRemedy

define "dot11OCBenabled" operation

Proposed Response **Response Status O**

Declined - See the definition and thorough description in 5.2.11.

Cl General SC General **P100** **L4** # 144245
 Durand, Roger RIM

Comment Type TR **Comment Status X**

The "dot11OCBenabled" operation is poorly defined thru-out the 11p draft 6.0 doc relative to operation outside of a BSS.

SuggestedRemedy

define "dot11OCBenabled" operation outside of a BSS

Proposed Response **Response Status O**

Declined - See the definition and thorough description in 5.2.11.

Cl General SC General **P100** **L5** # 144246
 Durand, Roger RIM

Comment Type TR **Comment Status X**

The "dot11OCBenabled" operation is poorly defined thru-out the 11p draft 6.0 doc relative to security requirements

SuggestedRemedy

define "dot11OCBenabled" security

Proposed Response **Response Status O**

Declined - TGp intentionally disabled link layer security when dot11OCBenabled is true. The 802.11 link layer security is incapable of satisfying the WAVE requirements.

Cl General SC General **P100** **L6** # 144247
 Durand, Roger RIM

Comment Type ER **Comment Status X**

The overall 11p 6.0 document appears to have gone thru a labotomy relative to recent document revisions regarding details and why 11p is doing what it is doing. I believe 802.11p has moved the wrong way by removing basic needed details in order to comprehend what and why 11p exists as the present document now asks far more questions, then it answers. Simply removing entire portions of the document doesn't answer multiple previous technical comments.

SuggestedRemedy

Increase document detail so that someone skilled in the 802.11 art can read this document and understand what 11p is doing and why.

Proposed Response **Response Status O**

Declined - Clause 5.2.11 explains that the amendment defines a new capability for communicating data frames between STAs that are not members of a BSS. It notes the utility of this capability for "rapidly varying communication environments such as those involving mobile STAs where the interval over which the communication exchanges take place may be of very short-duration (e.g. measured in milliseconds)." Recognizing that this capability can be used in a variety of ways, members of the 802.11 WG have previously requested that the amendment not include information about applications that may wish to use the new capability. TGp believes that the amendment strikes an appropriate balance between providing important information to help a reader and avoiding details that may imply a narrow applicability or a specific implementation. Those who are interested in background material on DSRC technology and other WAVE standards can consult 11-07-2045.

IEEE P802.11p D7.0 Wireless Access in Vehicular Environments (WAVE) comments

CI **General** SC **General** P100 L8 # 144249
 Myles, Andrew Cisco

Comment Type **TR** Comment Status **X**

The current draft appears to add nothing of value to 802.11 devices operating outside the 5.9GHz band and only uses a few 802.11 features for devices operating in the 5.9GHz band.

Even worse, many of the changes to the 802.11 standard make reading the standard in the context of regular 802.11 devices more confusing than it already is.

SuggestedRemedy

I know this is an old comment, but it is now time to refine 802.11p as a separate document because there is only negative value from it being defined as an amendment.

Proposed Response Response Status **O**

Declined - See Document 09-0619r02

CI **General** SC **General** Pii L1 # 125481
 Adachi, Tomoko Toshiba Corporation

Comment Type **TR** Comment Status **X**

What is the relation between 1609.4? Is it a must to also refer to 1609.4?

SuggestedRemedy

Clarify.

Proposed Response Response Status **O**

Declined - See explanation in document 08-0586r1.

CI **General** SC **General** Pii L1 # 125483
 Adachi, Tomoko Toshiba Corporation

Comment Type **TR** Comment Status **X**

There is no description how the system cope with interference from other overlapping systems. It relates to the reliability of the system and if there is no such mechanism, the system will be unrealistic.

SuggestedRemedy

Describe how BSS will cope with interference from overlapping BSSs.

Proposed Response Response Status **O**

Declined - See explanation in document 08-0584r0.

CI **General** SC **General** Pii L1 # 125482
 Adachi, Tomoko Toshiba Corporation

Comment Type **TR** Comment Status **X**

The multichannel operation is specified in 1609.4. It seems as though such operation is expected also in 802.11p but the core information is missing from the draft. The channel operation should be covered in 802.11p because it is the item in the MAC.

SuggestedRemedy

Specify the channel operation if some changes are intended. Do not stray from the original 802.11 channel operation. Do not mandate control and service channels.

Proposed Response Response Status **O**

Declined - See explanation in document 08-0586r1.

CI **I** SC **I.1** P33 L12 # 125439
 Perahia, Eldad Intel

Comment Type **TR** Comment Status **X**

TGy is using Behavior class 15

SuggestedRemedy

change TGp behavior classes to 16 and 17

Proposed Response Response Status **O**

Counter - The intent of the comment is accepted; however the table entries have changed due to resolution of CIDs 453-461.

CI **I** SC **I.2.3** P29 L41 # 144219
 Ecclesine, Peter

Comment Type **TR** Comment Status **X**

The scope of this amendment is restricted from 3.65 GHz bands. The requirement "The measurements of transmit spectral density shall be made using a 100 kHz resolution bandwidth and a 30 kHz video bandwidth." is beyond the scope of the PAR, and should be changed to some statement that is within scope.

SuggestedRemedy

Rewrite this subclause using language that is clearly restricted to operation within the scope of the 802.11p PAR.

Proposed Response Response Status **O**

Counter - New text to specify US Operations: "For masks defined in Annex I for the United States, the measurements of transmit spectral density are made using a 100 kHz resolution bandwidth and a 30 kHz video bandwidth."

IEEE P802.11p D7.0 Wireless Access in Vehicular Environments (WAVE) comments

CI I SC I.2.3 P32 L47 # 141208
 Ecclesine, Peter Cisco Systems

Comment Type TR Comment Status X

The scope of this amendment is restricted to 5 GHz bands. The requirement "The measurements of transmit spectral density shall be made using a 100 kHz resolution bandwidth and a 30 kHz video bandwidth." is beyond the scope of the PAR, and should be changed to some statement that is within scope.

SuggestedRemedy

Rewrite this subclause using language that is clearly restricted to operation within the scope of the 802.11p PAR.

Proposed Response Response Status O

Declined - See doc: 11-09-0020 and response in CID 10.

CI I SC I.2.3 P33 L48 # 125444
 Fischer, Matthew Broadcom

Comment Type TR Comment Status X

These spectral masks go beyond what has previously been deemed reasonable to implement with existing technology.

SuggestedRemedy

Reduce the constraints on the TX spectral masks by 15 dB outside of the center 10 MHz.

Proposed Response Response Status O

Declined - The specifications are required for performance. No evidence has been provided that they are not achievable. How was reasonable defined? What is considered reasonable for an unlicensed consumer device may not apply when considering a licensed band public service unit.

CI I SC I.2.3 P33 L48 # 125443
 Perahia, Eldad Intel

Comment Type TR Comment Status X

This section is informative, you can not have normative statements

SuggestedRemedy

remove all shalls

Proposed Response Response Status O

Declined - P802.11y-D11 resulted in this section becoming normative.

CI Introdu SC Introduction Pii L40 # 125487
 Adachi, Tomoko Toshiba Corporation

Comment Type TR Comment Status X

"Please see document, 11-07-2045-00-000p-Development of DSRC/WAVE Standards, (latest version) for additional information on the development of the amendment for WAVE." Is this really just information?

SuggestedRemedy

Clarify.

If there is anything in the document that is required for implementing 802.11p, it should be moved into the draft.

Proposed Response Response Status O

Declined - This is part of the Introduction which is a place to provide explanatory information that does not or should not be a part of the final standard. If it was appropriate to put this material in the standard amendment it would have been included. A review of the referenced document(s) would have confirmed this.

CI J SC J P32 L1 # 144222
 Perahia, Eldad Intel

Comment Type TR Comment Status X

If operation in 2.4GHz taught us anything, it is that partially overlapping channels are an incredible pain to deal with. TGP currently has channel sets defined such that a channel exists every 5 MHz, just like in 2.4GHz. This is not acceptable.

SuggestedRemedy

Disallow partial overlapping channels. Refer to 802.11-2007, 802.11y, and 802.11n D8.0 as to how to properly define channel sets.

Proposed Response Response Status O

Declined - Operation outside the context of a BSS has significant involvement of the higher layer, and also supports pre-assignment of the channels that may be in use in a geographic area.

IEEE P802.11p D7.0 Wireless Access in Vehicular Environments (WAVE) comments

CI J SC J P32 L31 # 144225
Perahia, Eldad Intel

Comment Type TR Comment Status X

If operation in 2.4GHz taught us anything, it is that partially overlapping channels are an incredible pain to deal with. TGp currently has channel sets defined such that a channel exists every 5 MHz, just like in 2.4GHz. This is not acceptable.

SuggestedRemedy

Disallow partial overlapping channels. Refer to 802.11-2007, 802.11y, and 802.11n D8.0 as to how to properly define channel sets.

Proposed Response Response Status O

Declined - Operation outside the context of a BSS has significant involvement of the higher layer, and also supports pre-assignment of the channels that may be in use in a geographic area. (See also document 09-0488r1)

CI J SC J P32 L50 # 144230
Perahia, Eldad Intel

Comment Type TR Comment Status X

The purpose of TGp is described as "communicate directly with another such device outside of an independent or infrastructure network". The 5.47-5.725GHz band requires DFS, which is pretty much defined in terms of BSS and IBSS operation. TGp does not appear to have addressed DFS and TPC in 11.8 and 11.9

SuggestedRemedy

TGp needs to provide the means to perform DFS outside of an independent or infrastructure network, or remove TGp operation in 5.47-5.725GHz band

Proposed Response Response Status O

Declined - DFS and TPC are a function of the higher layer when do11OCBEnabled is TRUE. The DFS and TPC functionality in 802.11 is not applicable.

CI J SC J P32 L50 # 144229
Perahia, Eldad Intel

Comment Type TR Comment Status X

How is coexistence addressed between TGp devices in the 5.47-5.725GHz band and 11a and 11n devices?

SuggestedRemedy

Address coexistence with legacy 11a and 11n devices, or remove TGp operation in 5.47-5.725GHz band

Proposed Response Response Status O

Counter - For this band the channelization has been restricted to be compatible with 11a or 11n devices.
See resolution to CID 225.

CI J SC J P37 L18 # 125456
Perahia, Eldad Intel

Comment Type TR Comment Status X

TGk used reg class 12

SuggestedRemedy

use free reg class

Proposed Response Response Status O

Counter - The intent of the comment is accepted; however the remedy of CID 457 is applied.

CI J SC J P37 L21 # 125458
Perahia, Eldad Intel

Comment Type TR Comment Status X

TGy used reg class 13

SuggestedRemedy

use free reg class

Proposed Response Response Status O

Counter - The intent of the comment is accepted; however the remedy of CID 457 is applied.

CI J SC J P37 L24 # 125459
Perahia, Eldad Intel

Comment Type TR Comment Status X

TGy used reg class 14

SuggestedRemedy

use free reg class

Proposed Response Response Status O

Counter - The intent of the comment is accepted; however the remedy of CID 457 is applied.

IEEE P802.11p D7.0 Wireless Access in Vehicular Environments (WAVE) comments

CI J SC J P37 L27 # 125460
 Perahia, Eldad Intel
 Comment Type TR Comment Status X
 TGy used reg class 15
 SuggestedRemedy
 use free reg class
 Proposed Response Response Status O
 Counter - The intent of the comment is accepted; however the remedy of CID 457 is applied.

CI J SC J.2 P35 L31 # 141209
 Roy, Richard SRA
 Comment Type TR Comment Status X
 Europe currently does not allow 44.8 dBm EIRP.
 SuggestedRemedy
 Change 44.8 dBm to 33dBm in Table J.2 where it occurs.
 Proposed Response Response Status O
 Counter - Counter - Change is accepted. Also EN 302571-1 also does not specify transmit power levels in mW (at the antenna input) so the entries in the mW transmit column are to be deleted.

CI J SC J.2.3 P34 L11 # 151176
 Malarky, Alastair Mark IV IVHS
 Comment Type TR Comment Status X
 Both regulatory classes 16 and 17 should be covered. However if the comment to Table J.2 by the same commenter is implemented, the current text does not need changed.
 SuggestedRemedy
 Add regulatory class 17 to the first sentence, if commenter's other comment to Table J.2 is not implemented.
 Proposed Response Response Status O
 Counter - Counter. Superseded by CID #122, which deleted the row with Regulatory Class 16 (10MHz). The row with Regulatory Class 17 (20MHz) has been aligned with the .11a/n legacy in the 5.475-5.7GHz ISM band due to LB144 comments on Draft 6.0 with regard to aligning with the .11 baseline. The former Regulatory Class 17 has been renumbered as Regulatory Class 16, so the line is now correct. No change is necessary.

CI J SC J.2.3 P38 L16 # 151179
 Ecclesine, Peter Cisco Systems
 Comment Type TR Comment Status X
 Add Regulatory class 17 to the normative statement.
 SuggestedRemedy
 "STAs in Regulatory Classes 16 and 17"
 Proposed Response Response Status O
 Counter - Counter. Same as CID #176.

CI Table 7- SC Table 7-2 P4 L15 # 144041
 Durand, Roger RIM
 Comment Type TR Comment Status X
 If either the "To DS" or the "from DS" bit is set to 1 the comment " for data frames outside of a BSS, this standard does not define procedures for using this combination of field values" serves no purpose
 SuggestedRemedy
 Remove the 11p comment
 Proposed Response Response Status O
 Counter - Change words added to be "or a data frame from STA to STA when dot11OCBEnabled is true.