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

Cl 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)

Cl 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.

Cl 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.

Cl 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.

Cl 03 SC 3.168c 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 on 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.
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.

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

Proposed Response
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.

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.

Suggested Remedy
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.

Suggested Remedy
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
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.

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.

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

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

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

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

Proposed Response
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

**Comment Type: ER**

**Comment Status: X**

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

**Suggested Remedy:**

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.

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**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?

**Suggested Remedy:**

Reconsider the use of a DS. If a DS will not be used, delete the usage of an AP in WAVE BSS.

**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)."

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**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.

**Suggested Remedy:**

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

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.

Suggested Remedy
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 5.2.2.a P2 L37 # 141009
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.

Suggested Remedy
Rewrite as suggested in 11-08-1375-03-000p-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.

Suggested Remedy
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.
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"

Suggested Remedy
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.

The text states, "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.

Suggested Remedy
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.

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".

Suggested Remedy
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: 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.
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.

**Suggested Remedy**
Remove these changes to 5.3.1.

**Proposed Response**
Declined - See CID 34

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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).

**Suggested Remedy**
Add an ALP parameter to the UNIDATA primitives that allow setting of the tx power and datarate on a packet by packet basis.

**Proposed Response**
Declined - 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.

---

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.

**Suggested Remedy**
Delete the text.

**Proposed Response**
Declined - TGp voted to decline this comment. Anticipate further WG feedback.
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**Comment Type:** TR  
**Comment Status:** X  
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**Suggested Remedy:**  
Delete the text.

**Proposed Response**  
Delete the text.  
**Response Status:** O  
Declined - TGp voted to decline this comment. Anticipate further WG feedback.

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**Suggested Remedy:**  
Delete the text.

**Proposed Response**  
Delete the text.  
**Response Status:** O  
Declined - TGp voted to decline this comment. Anticipate further WG feedback.

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**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.

**Suggested Remedy:**  
Per comment.

**Proposed Response**  
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.

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**Comment Type:** TR  
**Comment Status:** X  
A new management frame subtype requested by the draft is unavailable. Earlier drafts from T Gn 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.

**Suggested Remedy:**  
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**  
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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**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?

**Suggested Remedy:**  
Per comment.

**Proposed Response**  
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.
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.

Suggested Remedy
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".

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 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.

Suggested Remedy
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

Comment Type: TR  Comment Status: X
What is the BSSID used in the Link RCPI Request? Is it the BSSID of the AP?

Suggested Remedy
Use the AP s BSSID.

Proposed Response  Response Status: D
DECLINED: we are describing a method of communication outside of a BSS in which there is no AP.

Suggested Remedy
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.

Comment Type: TR  Comment Status: X
What is the BSSID used in the Link RCPI Request? Is it the BSSID of the AP?

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

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.

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.

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.
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 targeted 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.

Suggested Remedy
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: Declined - see 11-09-0503r2

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

Suggested Remedy:
define the "wildcard BSSID"

Proposed Response: Declined - See 7.1.3.3.3

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

Suggested Remedy:
Change to "group addressed frame"

Proposed Response: 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".

Proposed Response: Decline - TGp now uses the Wild Card BSSID.

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.

Suggested Remedy:
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: Counter - TGp now uses the Wild Card BSSID.
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.

Suggested Remedy

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.

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.
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.).

**Suggested Remedy**

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.

---

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.

**Suggested Remedy**

If there is a need to create a different namespace, either define a new IE or have IEEE allocate an OUI specific to the organization 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.

---

"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?

**Suggested Remedy**

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

---

The clause speaks of an "Organization Identifier" which is evidently the OUI.

**Suggested Remedy**

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

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

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.

Suggested Remedy
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.

Bumiller, George

Comment Type TR
Comment Status X

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

Suggested Remedy
Either create a new vendor specific element 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.

Myles, Andrew
Cisco

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.

Suggested Remedy
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 - Agree in principle. See response to 88
<table>
<thead>
<tr>
<th>CI 07</th>
<th>SC 7.3.2.26</th>
<th>P6</th>
<th>L 53</th>
<th># 151050</th>
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<tr>
<td>Durand, Roger</td>
<td>RiM</td>
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**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. 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 the 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.

<table>
<thead>
<tr>
<th>CI 07</th>
<th>SC 7.3.2.26</th>
<th>P7</th>
<th>L 3</th>
<th># 151052</th>
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<tr>
<td>McCann, Stephen</td>
<td>Research in Motion</td>
<td></td>
<td></td>
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</table>

**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.

**Proposed Response**

Response Status O

Counter - Counter. See CID 50.

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

<table>
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<th>P8</th>
<th>L27</th>
<th>#141097</th>
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<tr>
<td>Roy, Richard</td>
<td>SRA</td>
<td>Comment Type: TR</td>
<td>Comment Status: X</td>
<td>The current format of the HLIE does not provide for an OUI field that could be used to identify the &quot;source&quot; 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.</td>
<td></td>
</tr>
<tr>
<td><strong>Suggested Remedy</strong></td>
<td></td>
<td></td>
<td></td>
<td>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.</td>
<td></td>
</tr>
<tr>
<td><strong>Proposed Response</strong></td>
<td>Response Status: O</td>
<td>Declined - Declined: see CID 72</td>
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<td>Stephenson, Dave</td>
<td>Cisco</td>
<td>Comment Type: TR</td>
<td>Comment Status: X</td>
<td>Where are the default values for the non-BSS case?</td>
<td></td>
</tr>
<tr>
<td><strong>Suggested Remedy</strong></td>
<td></td>
<td></td>
<td></td>
<td>Provide guidance on default values for EDCA parameter set for STAs outside of a BSS.</td>
<td></td>
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<tr>
<td><strong>Proposed Response</strong></td>
<td>Response Status: O</td>
<td>Declined - See Table 7-37a.</td>
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<td>Malarky, Alastair</td>
<td>Mark IV IVHS</td>
<td>Comment Type: ER</td>
<td>Comment Status: X</td>
<td>The form &quot;set to&quot; should be used when describing the action of setting. The style usage is clearer from the example &quot;if X is true, then Y is set to TRUE&quot;. Here you are referring to actions to take based on the value of dot11OCBEnabled.</td>
<td></td>
</tr>
<tr>
<td><strong>Suggested Remedy</strong></td>
<td></td>
<td></td>
<td></td>
<td>Change &quot;for STAs with dot11OCBEnabled set to FALSE&quot; to &quot;for STAs where dot11OCBEnabled is false&quot;</td>
<td></td>
</tr>
<tr>
<td><strong>Proposed Response</strong></td>
<td>Response Status: O</td>
<td>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.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
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<table>
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<th>L1</th>
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<td>Perahia, Eldad</td>
<td>Intel</td>
<td>Comment Type: TR</td>
<td>Comment Status: X</td>
<td>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?</td>
<td></td>
</tr>
<tr>
<td><strong>Suggested Remedy</strong></td>
<td></td>
<td></td>
<td></td>
<td>please clarify</td>
<td></td>
</tr>
<tr>
<td><strong>Proposed Response</strong></td>
<td>Response Status: O</td>
<td>Declined - For OCB operation, the TXOPs are limited to a single MSDU.</td>
<td></td>
<td></td>
<td></td>
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</table>

**Type:** TR/technical required, ER/editorial required, GR/general required, T/technical, E/editorial, G/general
**Comment Status:** D/dispatched, A/accepted, R/rejected
**Response Status:** O/open, W/written, C/closed, U/unsatisfied, Z/withdrawn
**Sort Order:** Clause, Subclause, page, line
IEEE P802.11p D7.0 Wireless Access in Vehicular Environments (WAVE) comments

Cl 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 11-08/1165rxx).

Proposed Response Response Status O
Accepted - Accepted. See CIDs 82 and 114.

Cl 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 (b 0-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
Accepted - Accepted. See CIDs 82 and 114.

Cl 07 SC 7.3.2.80 P9 L1 # 144125
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.

Cl 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.

TYPE: TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general
COMMENT STATUS: D/dispatched  A/accepted  R/rejected  RESPONSE STATUS: O/open  W/written  C/closed  U/unsatisfied  Z/withdrawn
SORT ORDER: Clause, Subclause, page, line
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<th>Comment Type</th>
<th>Comment Status</th>
<th>Stepenson, Dave</th>
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<tbody>
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<td>9</td>
<td>13-1</td>
<td>125241</td>
<td>ER</td>
<td>X</td>
<td>Cisco</td>
<td>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.</td>
</tr>
<tr>
<td>07</td>
<td>7.3.2.80</td>
<td>9</td>
<td>8</td>
<td>144132</td>
<td>TR</td>
<td>X</td>
<td>Roy, Richard</td>
<td>The Timing information element is missing very valuable first and second order terms that account for different oscillator frequencies and drifts.</td>
</tr>
<tr>
<td>07</td>
<td>7.4.5</td>
<td>8</td>
<td>27</td>
<td>144116</td>
<td>TR</td>
<td>X</td>
<td>Bumiller, George</td>
<td>Identical text to that in 7.3.2.26 &quot;The IEEE currently assigns both 24-bit (OUI) and 36-bit (OUI-36 and IAB) public unique organization identifiers.&quot;</td>
</tr>
</tbody>
</table>

**Suggested Remedy**
- Add entries to Annex P for IEEE.
- Add the optional first and second order terms and the descriptions as given in 11-08-1165-07-000p-timing-information-element.doc.
- 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.
- 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. **Counter** - Counter; remove the sentence in question. The previous sentence in the insertion mirrors language in the base document.

**Response Status**
- O

**Proposed Response**
- 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.
- Declined - see 11-09/0503r2
- Declined - see 11-09-0503r2
- Counter - Counter: remove the sentence in question. The previous sentence in the insertion mirrors language in the base document.

**Proposed Response**
- Declined - Declined - see 11-09/0503r2
- Declined - see 11-09-0503r2
- Counter - Counter: Text to be removed but refer to 7.3.2.26 for definition of the field.
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 accommodating different length OUIs in this manner, there is now a possibility that vendor-specific action frames can collide depending on the contents of the two fields.

**Suggested Remedy**

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**

Counter - Counter. See CID 50.

---

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 accommodating different length OUIs in this manner, there is now a possibility that vendor-specific action frames can collide depending on the contents of the two fields.

**Suggested Remedy**

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**

Counter - Counter. See CID 50.

---

Delete this sentence. Organization Identifier is defined in 7.3.1.21.

**Suggested Remedy**

As per comment

**Proposed Response**

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**

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 specify 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 successfully achieved 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

**Suggested Remedy**
Remove the 5 octet OUI capability

**Proposed Response**  **Response Status** O
Declined - See response to CID 93

**Cl 09 SC 9.9.1.2**

Roy, Richard
SRA

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

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

**Suggested Remedy**
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**

Engwer, Darwin
Nortel Networks

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

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

**Suggested Remedy**
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

**Comment Type:** ER  **Comment Status:** X
"broadcast/multicast frames" is a non-standard IEEE 802 term.

**Suggested Remedy:** 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.

---

**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.

**Suggested Remedy:** 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.

---

**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.

**Suggested Remedy:** Define proper usage in IBSS operation.

**Proposed Response:**

- **Response Status:** O
- Declined - Declined. See CID 63 (regarding 7.3.2.29)

---

**Comment Type:** ER  **Comment Status:** X
The SET and INC TSF timer primitives were removed unnecessarily and should be replaced. There were no comments suggesting 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.

**Suggested Remedy:** 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.

---

**Comment Type:** TR  **Comment Status:** X
Provide the 4th row of the table.

**Suggested Remedy:**

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.
<table>
<thead>
<tr>
<th>Cl</th>
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<tr>
<td>Stephenson, Dave</td>
<td>Cisco</td>
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</table>

**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.

**Suggested Remedy**

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

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**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 condition a time constraint on a dynamic variable that has nothing to do with the implementation of the state change.

**Suggested Remedy**

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.

<table>
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<tr>
<th>Cl</th>
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<td>10.3.9.1.4</td>
<td>12</td>
<td>28</td>
<td>125283</td>
</tr>
<tr>
<td>Roy, Richard</td>
<td>SRA</td>
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</table>

**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.

**Suggested Remedy**

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.
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.

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

Proposed Response
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.

"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.

Suggested Remedy
Remove the exception throughout the draft.

Proposed Response
Counter - COUNTER 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.

"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?

Suggested Remedy
Require synchronization at MAC layer.

Proposed Response
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.

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.

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

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

Cl 11 SC 11.19 P 17 L 13 # 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

Suggested Remedy
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 P 17 L 17 # 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.

Suggested Remedy
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 P 18 L 7 # 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.

Suggested Remedy
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 P 18 L 8 # 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.

Suggested Remedy
Remove the restriction on simultaneous OCB and BSS operation since it's a valuable capability to have, there are no technical reasons why it cannot 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.
The first paragraph of 11.a contains language that prohibits functionality that should be allowed.

**Suggested Remedy**

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 5.2.2.a). 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**

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.

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

**Suggested Remedy**

Remove subclause 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 frame to allow the receiving STA 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**

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

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.

**Suggested Remedy**

Add minimum receiver sensitivity requirements.

**Proposed Response**

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 P 23 L 10 # 125399
Fischer, Matthew Broadcom

Comment Type TR Comment Status X
Adjacent channel rejection requirement seems too stringent.

Suggested Remedy
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 P 21 L 37 # 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).

Suggested Remedy
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 P 21 L 45 # 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?

Suggested Remedy
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 P 100 L 100 # 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.

Suggested Remedy
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 A SC A.4.4.1 P 21 L 45 # 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.

Suggested Remedy
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 P 25 L 51 # 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

Suggested Remedy
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

Type: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
Comment Status: D/dispatched A/accepted R/rejected Response Status: O/open W/written C/closed U/unsatisfied Z/withdrawn
Sort Order: Clause, Subclause, page, line
IEEE P802.11p D7.0 Wireless Access in Vehicular Environments (WAVE) comments

**Comment Type** TR  **Comment Status** X  **Proposed Response** O
**Adachi, Tomoko**  Toshiba Corporation

**Comment**
don11PHYType already contains "ht(7)".

**Suggested Remedy**
Add "ht(7)" in line 26. Add "HT=07" in line 33.

**Comment Type** TR  **Comment Status** X  **Proposed Response** O
**Adachi, Tomoko**  Toshiba Corporation

**Comment**
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.

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

**Comment Type** TR  **Comment Status** X  **Proposed Response** O
**Adachi, Tomoko**  Toshiba Corporation

**Comment**
Why does all the 802.11 PHY have to include dot11TempType2?

**Suggested Remedy**
Restrict it to dot11WAVEEnabled=true.

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

**Comment Type** TR  **Comment Status** X  **Proposed Response** O
**Roy, Richard**  SRA

**Comment**
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.

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

**Comment Type** TR  **Comment Status** X  **Proposed Response** O
**Roy, Richard**  SRA

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

**Suggested Remedy**
Add a 30 MHz channel set.

**Proposed Response** 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
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.

Suggested Remedy
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
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 the same Regulatory Class, the channels in use in any location shall be non-overlapping."

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.

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

Proposed Response
Declined - Reject. Same as CID #166.

Defining 5 MHz increments for 20 MHz channels in the 5.9 GHz band may create problems with channels that are partially overlapping.

Suggested Remedy
Please provide larger increments to address the partial overlap issue.

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

TYPE: TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general
COMMENT STATUS: D/dispatched  A/accepted  R/rejected  RESPONSE STATUS: O/open  W/written  C/closed  U/unsatisfied  Z/withdrawn
SORT ORDER: Clause, Subclause, page, line
IEEE P802.11p D7.0 Wireless Access in Vehicular Environments (WAVE) comments

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

(Annex J, Table J.2) Why was 40 MHz spacing removed from channel 102-138 operation?

**Suggested Remedy**
- Please justify or include 40 MHz spacing (It was present in the Draft 6.0)

**Proposed Response**  
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 OCBEnabled 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.

**Comment Status** X  
**Response Status** O  
Erceg, Vinko  
Broadcom

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

(Annex J, Table 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.

**Suggested Remedy**
- Please address partial overlap issue by choosing larger increments, for example.

**Proposed Response**  
Counter - Counter. See resolution for CID #157.

**Comment Status** X  
**Response Status** O  
Erceg, Vinko  
Broadcom

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**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 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 5.9 GHz and 3.65 GHz bands are licensed and TGj and TGy specified non-overlapping channels.

**Suggested Remedy**
- 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**  
Counter - Counter. See resolution for CID #157.

**Comment Status** X  
**Response Status** O  
Perahia, Eldad  
Intel

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**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.

**Suggested Remedy**
- Rewrite this phrase using language that is clearly restricted to operation within the scope of the 802.11p PAR.

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

**Comment Status** X  
**Response Status** O  
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.

**Proposed Response**  
Delete footnote 1 from Regulatory class 16.

**Response Status** O  
Ecclesine, Peter  
Cisco Systems

---

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

Table J.2 Regulatory class 17 should not have TPC and DFS Behaviors.

**Proposed Response**  
Delete Behaviors 3 and 4 from Regulatory class 17.

**Response Status** O  
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.

**Suggested Remedy**
- Rewrite this phrase using language that is clearly restricted to operation within the scope of the 802.11p PAR.

**Proposed Response**  
Declined - See doc: 11-09-0020 and response in CID 10.
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<th>Cl General</th>
<th>SC General</th>
<th>P 100</th>
<th>L 1</th>
<th># 144242</th>
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<td>Adachi, Tomoko</td>
<td>Toshiba Corporation</td>
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</tbody>
</table>

**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.

**Suggested Remedy**  
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.

<table>
<thead>
<tr>
<th>Cl General</th>
<th>SC General</th>
<th>P 100</th>
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<th># 125463</th>
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<tr>
<td>Amann, Keith</td>
<td>Polycom Inc.</td>
<td></td>
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**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.

**Suggested Remedy**  
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."

<table>
<thead>
<tr>
<th>Cl General</th>
<th>SC General</th>
<th>P 100</th>
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<tr>
<td>Amann, Keith</td>
<td>Polycom Inc.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Comment Type** TR  
**Comment Status** X  
There appears to be no security mechanisms for transport of data within a WAVE.

**Suggested Remedy**  
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"
<table>
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<th>Cl</th>
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<th>General P</th>
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<th># 125471</th>
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<td>Fischer, Matthew Broadcom</td>
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<tr>
<td>Comment Type TR</td>
<td>Comment Status X</td>
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<tr>
<td>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.</td>
<td></td>
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<tr>
<td>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.</td>
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<td>Proposed Response Response Status O</td>
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<tr>
<td>Counter - See updated text in latest draft.</td>
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<td>Durand, Roger RIM</td>
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<td>Comment Type TR</td>
<td>Comment Status X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The &quot;dot11OCBenabled&quot; 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.</td>
<td></td>
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<tr>
<td>SuggestedRemedy define &quot;dot11OCBenabled&quot; operation</td>
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<td>Declined - See the definition and thorough description in 5.2.11.</td>
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<td>The &quot;dot11OCBenabled&quot; operation is poorly defined thru-out the 11p draft 6.0 doc relative to operation outside of a BSS.</td>
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<td>SuggestedRemedy define &quot;dot11OCBenabled&quot; operation outside of a BSS</td>
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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 that it already is.

Suggested Remedy
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
Declined - See Document 09-0619r02

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

Suggested Remedy
Clarify.

Proposed Response
Declined - See explanation in document 08-0586r1.

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.

Suggested Remedy
Describe how BSS will cope with interference from overlapping BSSs.

Proposed Response
Declined - See explanation in document 08-0584r0.

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.

Suggested Remedy
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
Declined - See explanation in document 08-0586r1.

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.

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

Proposed Response
Declined - 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."
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.

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

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

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

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

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.

This section is informative, you can not have normative statements

Proposed Response
remove all shalls

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

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.

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

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.

"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?

Proposed Response
Clarify.

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

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

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 Remedy**
- 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.

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

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

**Proposed Response**  **Response Status**
- Intel

**Proposed Response**  **Response Status**
- Intel

**Proposed Response**  **Response Status**
- Intel

TYPE: TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general

COMMENT STATUS: D/dispatched  A/accepted  R/rejected  RESPONSE STATUS: O/open  W/written  C/closed  U/unsatisfied  Z/withdrawn

SORT ORDER: Clause, Subclause, page, line
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