IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Beam tracking clarification CID 5010 | | | | |
| Date: | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Solomon Trainin | Intel |  | +972547885738 | [solomon.trainin@intel.com](mailto:solomon.trainin@intel.com) |
| Assaf Kasher | Intel |  |  | [assaf.kasher@intel.com](mailto:assaf.kasher@intel.com) |
| Carlos Cordeiro | Intel |  |  | [carlos.cordeiro@intel.com](mailto:carlos.cordeiro@intel.com) |
| Gaius Yao Huang Wee | Panasonic |  |  | [yaohuang.wee@sg.panasonic.com](mailto:yaohuang.wee@sg.panasonic.com) |
| Joe Andonieh | Peraso |  |  | [joe@perasotech.com](mailto:joe@perasotech.com) |

Abstract

Clarifications to sub clause 9.38.7 Beam tracking to resolve CID 5010

*Discussion:*

*9.38.7 Beam tracking*

*P1515L48*

*Current definition does not address specifically a BRP response sent by separate link access. This case is different from the BRP response inside a channel access sequence in that the time of the BRP response is unpredictable due to separate link access. Late BRP response may be inadequate due to link conditions, thus leading to wrong antenna configuration and performance loss.*

**9.38.7 Beam tracking**

*Editor add new paragraph at end of the sub clause*

A beam tracking initiator shall not transmit to the beam tracking responder a PPDU that has the BEAM\_TRACKING\_REQUEST parameter in the TXVECTOR set to Beam Tracking Requested and Packet Type set parameter to TRN-T-PACKET if the time duration since the last PPDU it transmitted to the beam tracking responder using the same parameter setting is less or equal to dot11BeamTrackingTimeLimit, unless it has received a BRP frame with the channel measurement feedback from the beam tracking responder.

If the beam tracking initiator does not receive the expected feedback from the beam tracking responder within a time period that is less than dot11BeamTrackingTimeLimit of the last request, the beam tracking initiator may consider the beam tracking request as failed. If the initiator receives the expected feedback from the responder within time that is greater than or equal to dot11BeamTrackingTimeLimit of the last request, the beam tracking initiator should consider the feedback as outdated and should ignore it.

Time of arrival of the beam tracking responder’s feedback is indicated by PHY\_RXEND.ind primitive of PPDU that contains the BRP MMPDU.

Time of transmit completion of the beam tracking initiator’s PPDU is indicated by PHY\_TXEND.confirm primitive

The beam tracking responder shall not transmit a BRP frame with feedback to the beam tracking initiator if the time period between PHY\_RXEND.ind primitive of the PPDU that contains the beam tracking request and of PHY\_TXEND.confirm primitive of the response BRP frame is longer than dot11BeamTrackingTimeLimit*.*

P1516L14

*Editor modify the text as follows:*

If the responder has never received a BRP frame from the initiator with TX-TRN-REQ equal to 1, the responder shall respond with all subfields of the FBCK-TYPE field equal to 0 and set the BS-FBCK field to the index of the TRN-T subfield that was received with the best quality.

**8.4.2.128 DMG Operation element**

P1005L52

*Editor modify the Figure 8-504—DMG Operation element format as follows*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Element ID | Length | DMG Operation Information | DMG BSS Parameter Configuration | BeamTrackingTimeLimit |
| Octets | 1 | 1 | 2 | 8 | 2 |

Figure 8-504 – DMG Operation element format

*Editor add new paragraph at end of the sub clause:*

The BeamTrackingTimeLimit subfield contains the value of dot11BeamTrackingTimeLimit. While associated with an AP or PCP, a STA overrides the value of dot11BeamTrackingTimeLimit with the value of this subfield when it receives this element from its AP or PCP.

*Editor append to the sequence at* Dot11DMGBeamformingConfigEntry:

dot11BeamTrackingTimeLimit

dot11BeamTrackingTimeLimit

OBJECT-TYPE

SYNTAX Unsigned32 (1..65535)

UNITS 50us

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"This is a control variable.

It is written by the MAC or SME.

Changes take effect as soon as practical in the implementation.

BRP tracking Initiator Time Limit (in units of 50us)."

DEFVAL { 200 }

::= { dot11DMGBeamformingConfigEntry 11 }

**References:**

1. IEEE P802.11-REVmc/D4.0