IEEE P802.11  
Wireless LANs

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| Proposed changes on 11.32 Spatial sharing and interference mitigation in Candidate Draft D0.2 | | | | |
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Abstract

This document proposes changes on 11.32 Spatial sharing and interference mitigation in Candidate Draft D0.2 to fix some mistakes (both technical and editorial) and address the “Editor Note”.

11.32 Spatial sharing and interference mitigation for DMG STAs

* + 1. General

*Change the first and second paragraphs as follows*

This subclause describes mechanisms to enable spatial sharing and interference mitigation within a PBSS/infrastructure BSS and in an uncoordinated OBSS environment. The mechanisms specified can operate on one or more channels.

Spatial sharing mechanisms allow SPs belonging to different STAs in the same spatial vicinity to be scheduled concurrently over ~~the same~~ one or more channels, and for interference mitigation. Alternatively, the AP or PCP can use CBAPs to mitigate interference.

* + 1. Spatial sharing and interference assessment

*Change the second paragraph as follows*

The AP or PCP should use the directional channel quality described in 9.4.2.21.16 (Directional Channel Quality request) and 9.4.2.22.15 (Directional Channel Quality report) to assess the possibility for spatial sharing of SPs over one or more channels.

*Change the fifth, sixth and seventh paragraphs as follows*

For the purpose of spatial sharing with one or more existing SPs allocated on the same channel, ~~T~~the AP or PCP should request the source DMG STA and the destination DMG STA involved in a candidate SP to perform measurements ~~for the purpose of spatial sharing with an existing SP~~ only after the STAs have beamforming trained with each other. For the purpose of spatial sharing with one or more existing SPs allocated in different channels, the EDMG AP or EDMG PCP should request each source DMG STA and each destination DMG STA involved in each candidate SP to perform measurements only after the STAs have beamforming trained with each other. The AP or PCP can infer that the STAs in a candidate SP have a beamformed link with each other if the Beamforming Training field within the DMG TSPEC used to set up the candidate SP was set to 1 and at least one beacon interval has elapsed since the candidate SP was first scheduled.

***Editor Note: the text above is not written as spec text. Need to specify which fields to use, what values to set in them, etc., to achieve the above.***

If the AP or PCP transmits a Directional Channel Quality request to a STA involved in a candidate SP to assess the possibility for spatial sharing with ~~another~~ one or more existing SPs, it shall set the Target STA to the corresponding peer STA’s MAC address involved in the candidate SP and shall set the Measurement Method field to indicate ANIPI. Additionally, it may include a Measurement Configuration subelement in the Directional Channel Quality request where the Measurement Channel Bitmap subfield indicates one or more 2.16GHz channels for which this measurement request applies, the Channel Measurement Report Method subfield sets to 0 to indicate the results of measurements over all the requested 2.16 GHz channels during each measurement time block are reported per 2.16 GHz channel and sets to 1 to indicate the averaged results of concurrent measurements over all the requested 2.16 GHz channels during each measurement time block are reported, and the Antenna Measurement Report Method subfield sets to 0 to indicate the results of concurrent measurements over each requested 2.16 GHz channel using multiple RX DMG antennas during a measurement time block are reported per DMG antenna and sets to 1 to indicate the averaged results of concurrent measurements over each requested 2.16 GHz channel using multiple RX DMG antennas during a measurement time block are reported.

If the candidate SP has already been allocated channel time, the AP or PCP should additionally transmit a Directional Channel Quality request to the STAs involved in each of the one or more existing SPs to assess the possibility for spatial sharing with the candidate SP. In the Directional Channel Quality request, the AP or PCP shall set the Target STA to the corresponding peer STA involved in the existing SP and shall set the Measurement Method field to indicate ANIPI. Additionally, it may include a Measurement Configuration subelement in the Directional Channel Quality request where the Measurement Channel Bitmap subfield indicates one or more 2.16GHz channels for which this measurement request applies, the Channel Measurement Report Method subfield sets to 0 to indicate the results of measurements over all the requested 2.16 GHz channels during each measurement time block are reported per 2.16 GHz channel and sets to 1 to indicate the averaged results of concurrent measurements over all the requested 2.16 GHz channels during each measurement time block are reported, and the Antenna Measurement Report Method subfield sets to 0 to indicate the results of concurrent measurements over each requested 2.16 GHz channel using multiple RX DMG antennas during a measurement time block are reported per DMG antenna and sets to 1 to indicate the averaged results of concurrent measurements over each requested 2.16 GHz channel using multiple RX DMG antennas during a measurement time block are reported.

*Change the ninth paragraph as follows*

If a recipient STA that receives a Directional Channel Quality request frame is already SISO beamformed trained with the target STA specified by the AID field within the frame, then the recipient STA shall carry out the measurement employing the same receive antenna configuration as is used by the recipient STA when receiving frames from the target STA. If a recipient STA that receives a Directional Channel Quality request frame is already SU-MIMO beamformed trained with the target STA specified by the AID field within the frame, then the recipient STA shall carry out the measurements concurrently employing the same multiple receive antenna configurations as are used by the recipient STA when receiving frames from the target STA based on the same measurement configuration. If the AID field is set to the broadcast AID or an unknown AID, then the recipient STA shall perform the measurements using a quasi-omni antenna pattern.

**Straw Poll:**

* Do you agree to incorporate the proposed changes on Spatial Sharing and Interference Mitigation as shown in IEEE 802.11-17/0217r2 into the next draft 11ay specification?
  + Y
  + N
  + A

**Reference:**

[1] Candidate Draft P802.11ay\_D0.2