IEEE P802.11
Wireless LANs

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| CRs for subclause 38.3.21 |
| Date: 2025-04-21 |
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Abstract

This submission contains proposed comment resolutions to comments on P802.11bn D0.1. The changes are based on P802.11bn D0.2.

The submission provides resolutions to the following CIDs:

71, 369, 908, 1836, 2444, 1837, 1939, 1940, 1941, 1942, 2336, 3552, 3748, 3903, 3904, 3905, 3906, 3907, 3968

Revisions:

* Rev 0: Initial version of the document.

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| **CID** | **Commenter** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 71 | Jialing Li | 208 | It's not clear whether each AP needs to know the global CSI (both its channels to all recipients and the other AP's channels to all recipients) in first sentence of "all the APs participating in a Co-BF transmission need to have the channel state information to all the recipients to make this calculation possible." If each AP needs to know the global CSI, it needs to monitor the in-BSS sounding section of the other AP in a sequential sounding and record the CSI. Could you clarify? | Refer to the comment. | RejectedThis entire section is informal and the actual precoder design is outside the spec |
| 369 | Sigurd Schelstraete | 207 | "the steering matrices used by all the APs may ensure a minimal signal strength of ...". This needs better quantification. Without clear targets, the value of COBF is doubtful. | See comment | RejectedThis entire section is informal and the actual precoder design is outside the spec |
| 908 | Anand Jee | 208 | Xk instead of Xk,u and in Nuser-1, "-1" is wronlgy placed as subscript | As in comment | AcceptedEditor please apply changes as in this document  |
| 1836 | Qisheng Huang | 208 | About the line 4 in page 208 it should be bold(x)\_k=[...] instead of bold(x)\_(k,u) | please refer to the comment | AcceptedEditor please apply changes as in this document  |
| 2444 | Thomas Handte | 208 | It should be x\_k and not x\_k,u in line 4 | as in comment | AcceptedEditor please apply changes as in this document  |
| 1837 | Qisheng Huang | 208 | Missing the defination of bold(H)\_(k,u) | please add the defination of bold(H)\_{k,.u}or change the formula (38-55) to :[H\_{k,0}Q\_{k,0},H\_{k,1}Q\_{k,1}.....] | RejectedDefinition exists in wording below formula 38-55 |
| 1939 | Okan Mutgan | 208 | Subscript 'u' should be removed | x\_k | AcceptedEditor please apply changes as in this document |
| 1940 | Okan Mutgan | 207 | Definition of Coordinated Beamforming should be improved | Coordinated Beamforming (...) reduce latency as well as mitigate inteference from OBSS AP transmissions | RejectedDescription seems good to me |
| 1941 | Okan Mutgan | 208 | Need for CSI needs to be improved | NOTE - all the APs participating in a Co-BF transmission need to have the channel state information to all the recipients to mitigate interference from OBSS AP transmissions, and make this calculation possible | RejectedThis entire section is informal and the actual precoder design is outside the spec |
| 1942 | Okan Mutgan | 209 | Clarification on which NDP Announcement | In UHR sounding, the tone grouping and codebook size to be used in the compressed beamforming report of the beamforming feedback matrix V are defined by the AP transmiting the most recent UHR NDP Announcement frame ... | AcceptedEditor please apply changes as in this document |
| 2336 | Yan Zhang | 208 | Add subclause name after "section 27.3.16.2". | As in comment | Accepted modifiedEditor please apply changes as in this document |
|  |  |  |  |  |  |
| 3552 | ron porat | 208 | Ambigous wordings | "The Co-BF steering matrix is composed of sections (disjoint sets of rows)" is ambiguousShould it be more appropriate to call it block diagonal? | RejectedThis entire section is informal and the actual precoder design is outside the spec |
| 3748 | Leonardo Lanante | 207 | Depending on the beamforming weights applied by a beamformer, the degree of nulling to target STAs may vary. The beamforming weights being an implementaiton dependent algorithm, a mechanism should be defined to allow one AP to know the degree of nulling another AP is providing during the CoBF transmission. | Allow an AP triggering a CoBF transmission to indicate a minimum interference level by another AP to the AP's target STA. | RejectedThe author should bring a contribution explaining how this can be done.  |
| 3903 | Dong Wei | 207 | If SU-MIMO and DL MU-MIMO will be specified for UHR (similar to HE and EHT), they need to be placed together with Co-BF. | Restructure clause 38.3.21 to include specifitions for SU-MIMO and DL MU-MIMO | RejectedThis section is solely for the new feature of CoBF in 11bn |
| 3904 | Dong Wei | 207 | The phrase "subspace of the eigen-modes" is not defined in either the baseline or this document. | Add a definition for subspace of eigen-modes | RejectedThis section is non normative, terminology known to engineers in this space |
| 3905 | Dong Wei | 208 | The term transmit chain should be used instead of the term antenna. | Replace "antennas" with "transmit chains" | AcceptedEditor please replace as in comment |
| 3906 | Dong Wei | 208 | Since Co-BF is used to mitigate interference, more specific description is needed for interference. | Add "which is not mitigated" after "interference" | Accepted modifiedEditor please apply changes as in this document |
| 3907 | Dong Wei | 208 | The note seems not consistent with clause 37.7. For example, clause 37.7 does not describe that AP2 collects the CSI of AP1's in-BSS channels. | Fix this inconsistent statement | RejectThe note is correct and section 37.7 will be update |
| 3968 | Bilal Sadiq | 207 | "...APs may ensure a minimal signal strength of an APs spatial streams at" can be interpreted as meaning that the AP will ensure signal strength is sufficient/higher than some (unspecified) minimum level. But what we intend to say is that APs ensure the interference (signal?) is rather weak. | Strike out "a" and qualify the signal as "interfering" so the meaning of "minimal" can be correctly inferred, e.g., "...APs may ensure that only minimal interference is caused by an APs spatial streams at..."  | Accepted modifiedEditor please apply changes as in this document |
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Proposed change for comments 908, 1836, 2444, 1939

***TGbn Editor: Update section 38.3.21.1 as follows:***

On page 218 in D0.2 please replace the current formula on line 7 with:



Proposed change for comments 1942

***TGbn Editor: Update section 38.3.21.2 as follows:***

On page 219 in D0.2 please add to the current text on line 11

“…are defined by the the AP transmiting the most recent UHR NDP Announcement”

Proposed change for comments 3906

***TGbn Editor: Update section 38.3.21.1 as follows:***

On page 218 in D0.2 please update the current text on line 36

**n** is a vector of additive noise and ~~may include~~ unmitigated interference

Proposed change for comments 3968

***TGbn Editor: Update section 38.3.21.1 as follows:***

On page 217 in D0.2 please update the current text on lines 61-63:

Depending on the channel knowledge available and the number of antennas available at the APs, the

steering matrices used by all the APs ~~may ensure a minimal signal strength of an AP’s spatial streams at~~ are designed to minimize the interference level measured at either all the receive antennas of all the OBSS AP’s recipients or, ….

Proposed change for comments 2336

***TGbn Editor: Update section 38.3.21.2 as follows:***

On page 218 in D0.2 please update the current text on line 63:

CSD removal guidelines, quantization requirements, tone grouping options and codebook sizes shall also follow the description in ~~section~~ 27.3.16.2 (Beamforming feedback matrix V).