IEEE P802.11
Wireless LANs

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| Resolution for CID259,260 related to NSTR Update procedure |
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Abstract

This submission proposes resolutions for the following CIDs:

259, 260

Related to the letter ballot LB289 of REVmf,

Changes relative to REVmf D1.0.

Revisions:

* Rev 0. Initial version of the document.
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**CIDs:**

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| **CID** | **Page/Line** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 259 | 1734 / 29 | 9.4.2.323.4 | Firstly (p1734), it is written that NSTR Indication Bitmap Present subfield is set to 1 if at least 1 NSTR link pair is present.Secondly (p5313), for NSTR update procedure, it is written that the NSTR Indication Bitmap Present subfield shall be set to 1.So, as written currently in the draft, the NSTR update procedure only allows allSTR-to-NSTR and NSTR-to-NSTR changes to be signalled by a non-AP MLD, but not NSTR-to-allSTR changes.The current draft lacks to provide appropriate signalling of such updated NSTR statuses when all the link pairs become STR pairs.Note: This inconsistency is also is present in 802.11be-2024. | The commenter will bring a contribution with a solution to solve the inconsistency raised in the comment. | Revised – Agree in principle with the commenter. Text updates are proposed in doc 11-25/1714r0 to solve the inconsistency. Instruction to TGmf Editor: Incorporate the proposed text updates corresponding to CID259 in document 11-25/1714r0 |
| 260 | 5313 / 17 | 35.3.16.2 | Firstly (p1734), it is written that NSTR Indication Bitmap Present subfield is set to 1 if at least 1 NSTR link pair is present.Secondly (p5313), for NSTR update procedure, it is written that the NSTR Indication Bitmap Present subfield shall be set to 1.So, as written currently in the draft, the NSTR update procedure only allows allSTR-to-NSTR and NSTR-to-NSTR changes to be signalled by a non-AP MLD, but not NSTR-to-allSTR changes.The current draft lacks to provide appropriate signalling of such updated NSTR statuses when all the link pairs become STR pairs.Note: This inconsistency is also is present in 802.11be-2024. | The commenter will bring a contribution with a solution to solve the inconsistency raised in the comment. | Revised – Agree in principle with the commenter. Text updates are proposed in doc 11-25/1714r0 to solve the inconsistency. Instruction to TGmf Editor: See resolution of CID259 |
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**Discussion:**

This document proposes 2 options to solve an inconsistency in the REVmf D1.0 related to the NSTR update procedure. This inconsistency is explained below:

1. In the section 9.4.2.323.4 describing the Reconfiguration Multi-Link element, the NSTR Indication Bitmap Present subfield is specified as follow:

*The NSTR Indication Bitmap Present subfield in the STA Control field is set to 1 if at least one NSTR link pair is present for the non-AP MLD that contains the link corresponding to the Link ID, otherwise, this subfield is set to 0.*

*If the NSTR Indication Bitmap Present subfield is equal to 1 in the STA Control field, then the STA Info field contains an NSTR Indication Bitmap subfield whose size is indicated in the NSTR Bitmap Size subfield; otherwise, the NSTR Indication Bitmap subfield is not present in the STA Info field. The NSTR Bitmap Size subfield indicates the size of the NSTR Indication Bitmap subfield (if present) in the STA Info field and is set to 1 if the length of the corresponding NSTR Indication Bitmap subfield is equal to 2 octets and is set to 0 if the length of the corresponding NSTR Indication Bitmap subfield is equal to 1 octet. The NSTR Bitmap Size subfield in the STA Control field is reserved if the NSTR Indication Bitmap Present subfield is equal to 0.*

1. In the section 35.3.16.2 describing the MLD capability and operation signaling, the paragraph related to the NSTR update procedure specifies that:

*A non-AP MLD that transmits a Multi-Link Operation Update Request frame that contains a Reconfiguration Multi-Link element with Operation Type subfield equal to 4 shall include in the Reconfiguration Multi-Link element one Per-STA Profile subelement for each link, identified by the link ID, that is setup between the non-AP MLD and the AP MLD. The Reconfiguration Multi-Link element shall additionally have:*

* *All subfields in the Presence Bitmap subfield of the Multi-Link Control field set to 0.*
* *All subfields of the STA Control field except for the Link ID, the NSTR Indication Bitmap Present, and the NSTR Bitmap Size subfields, set to 0.*
* *The Link ID subfield shall be set to the identifier of the setup link for which the NSTR status is reported in the Per-STA Profile subelement.*
* *The NSTR Indication Bitmap Present subfield shall be set to 1.*
* *The NSTR Bitmap Size subfield shall be set to indicate the size of the NSTR Indication Bitmap subfield.*

*The NSTR Indication Bitmap subfield shall be included and shall be set to indicate STR or NSTR for each pair of links formed between the link corresponding to the link ID and other setup links for the non-AP MLD.*

So, as written currently in the draft, the NSTR update procedure only allows allSTR-to-NSTR and NSTR-to-NSTR changes to be signalled by a non-AP MLD, but not NSTR-to-allSTR changes. Here, “allSTR” means that all link pairs are STR, while “NSTR” means that at least one link pair is NSTR.

Indeed, according to the current draft for the NSTR update procedure, Multi-Link Operation Update Request frame has to have the NSTR Indication Bitmap Present subfield set to 1, which is authorized only if at least one NSTR link pair is present, but which cannot be the case when all link pairs are STR…

The current draft lacks to provide appropriate signalling of such updated NSTR statuses when all the link pairs become STR pairs.

Note: This inconsistency is also is present in 802.11be-2024.

The 2 options proposed to solve this inconsistency are summarized below:

Opt1: Add, for the NSTR update procedure, the possibility to set the NSTR Indication Bitmap Present subfield to 0 to report that all link pairs are STR (i.e., that no NSTR link pair is present).

Opt2: Add, for the description of the NSTR Indication Bitmap Present subfield, the condition that it is set to 1 if the Operation Type subfield is set to the value 4 corresponding to the NSTR Status Update. In addition, for the NSTR update procedure, it is clarified that all bits of the bitmap are set to 0 to indicate that all link pairs are STR.

**Option#1**

***TGmf Editor: Please make the following changes in section 35.3.16.2 (REVmf D1.0 P5313L4-24):***

* MLD capability and operation signaling

A non-AP MLD that transmits a Multi-Link Operation Update Request frame that contains a Reconfiguration Multi-Link element with Operation Type subfield equal to 4 shall include in the Reconfiguration Multi-Link element one Per-STA Profile subelement for each link, identified by the link ID, that is setup between the non-AP MLD and the AP MLD. The Reconfiguration Multi-Link element shall additionally have:

* All subfields in the Presence Bitmap subfield of the Multi-Link Control field set to 0.
* (#259)All subfields of the STA Control field set to 0, except for the Link ID, the NSTR Indication Bitmap Present, and the NSTR Bitmap Size subfields that are set as indicated below:
* The Link ID subfield shall be set to the identifier of the setup link for which the NSTR status is reported in the Per-STA Profile subelement.
* (#259)The NSTR Indication Bitmap Present subfield shall be set to 1 if at least one NSTR link pair is present for the non-AP MLD; otherwise, the NSTR Indication Bitmap Present subfield shall be set to 0 if no NSTR link pair is present for the non-AP MLD.
* The NSTR Bitmap Size subfield shall be set to indicate the size of the NSTR Indication Bitmap subfield.
* (#259)When the NSTR Indication Bitmap subfield is included, it shall be set to indicate STR or NSTR for each pair of links formed between the link corresponding to the link ID and other setup links for the non-AP MLD.

**Option#2**

***TGmf Editor: Please make the following changes in section 9.4.2.323.4 (REVmf D1.0 P1734L29-43):***

* Reconfiguration Multi-Link element(#11be)

(#259)The NSTR Indication Bitmap Present subfield in the STA Control field is set to 1 if at least one NSTR link pair is present for the non-AP MLD that contains the link corresponding to the Link ID or if the Reconfiguration Operation Type subfield is set to the value 4 corresponding to the NSTR Status Update; otherwise, this subfield is set to 0.

If the NSTR Indication Bitmap Present subfield is equal to 1 in the STA Control field, then the STA Info field contains an NSTR Indication Bitmap subfield whose size is indicated in the NSTR Bitmap Size subfield; otherwise, the NSTR Indication Bitmap subfield is not present in the STA Info field. The NSTR Bitmap Size subfield indicates the size of the NSTR Indication Bitmap subfield (if present) in the STA Info field and is set to 1 if the length of the corresponding NSTR Indication Bitmap subfield is equal to 2 octets and is set to 0 if the length of the corresponding NSTR Indication Bitmap subfield is equal to 1 octet. The NSTR Bitmap Size subfield in the STA Control field is reserved if the NSTR Indication Bitmap Present subfield is equal to 0.

***TGmf Editor: Please make the following changes in section 35.3.16.2 (REVmf D1.0 P5313L4-24):***

* MLD capability and operation signaling

A non-AP MLD that transmits a Multi-Link Operation Update Request frame that contains a Reconfiguration Multi-Link element with Operation Type subfield equal to 4 shall include in the Reconfiguration Multi-Link element one Per-STA Profile subelement for each link, identified by the link ID, that is setup between the non-AP MLD and the AP MLD. The Reconfiguration Multi-Link element shall additionally have:

* All subfields in the Presence Bitmap subfield of the Multi-Link Control field set to 0.
* All subfields of the STA Control field except for the Link ID, the NSTR Indication Bitmap Present, and the NSTR Bitmap Size subfields, set to 0.
* The Link ID subfield shall be set to the identifier of the setup link for which the NSTR status is reported in the Per-STA Profile subelement.
* The NSTR Indication Bitmap Present subfield shall be set to 1.
* The NSTR Bitmap Size subfield shall be set to indicate the size of the NSTR Indication Bitmap subfield.
* (#259)The NSTR Indication Bitmap subfield shall be included and shall be set to indicate STR or NSTR for each pair of links formed between the link corresponding to the link ID and other setup links for the non-AP MLD. All bits of the NSTR Indication Bitmap subfield shall be set to 0 to indicate the STR status for each pair of links formed between the link corresponding to the link ID and other setup links for the non-AP MLD.