IEEE P802.11
Wireless LANs

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| TGbe CC-34 – CID 2075, 2085, 2239 |
| Date: 2021-03-30 |
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Background

This contribution proposes comment resolutions to comments received in CC34 on CIDs 2075, 2085, and 2239.

### Comment

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| **CID** | **Clause** | **Page** | **Comment** | **Proposed Change** |
| 2075 | 11 | 87.01 | There are many feature/capabilities that are specified for an 802.11 non-AP STA that are essential for that STA to be able to operate in an ESS. Most if not all of these features/capabilities will need to be modified to include the non-AP MLD and AP MLD to allow these new entities to operate in an ESS. (e.g. most of the sub-clauses in clause 11). The current draft only attempts to address sub-clauses 11.1, 11.2, 11.3, 11.13, 11.21, and 11.24. I do not believe the current approach of dealing with MLDs such that they are a combination of multiple STAs causes significant issues with these sub-clauses. In my opinion it would be much simpler to define an MLD as a STA and then most of these subclauses would be fine as they are now written. This also applies to clause 12. | Either redefine an MLD to be a STA or address all sub-clauses in clauses 11 and 12 critical to ESS operation so that MLO can be fully supported. The commentors preference is for redefining an MLD to be a STA. |
| 2239 | 7 | 50.01 | If my comment suggesting to simplify the concept of MLD to be a type/operational mode of STA/AP is not persued, then clause 7 will need updates to support the concept added in 4.5.3 that the DS is aware of "non-AP MLD to AP MLD" mappings. Also, clause 5 will need updates to explain how the DSAF function is accomplished in an AP MLD, and this likely ripples into the clause 4 discussion of the services (and entities that provide/use the services). | Either move in the direction that non-AP/AP MLD are just examples of non-AP STA/AP (respectively) per my other comment, or update clause 7 to add the concept of a non-AP MLD to MLD mapping in the DS, and the SAP support for managing this mapping. This includes explaining how the DSAF is archtecturally connected to the AP MLD structures in clause 7 and 5.1.5.3, and how the new structure maps to/provides the services in 4.5 (and probably other clause 4 subclauses). |

### Discussion:

The two comments seem to describe deficiencies in the specification of MLO regarding the definition and behaviour of MLDs. CID 2075 states that Clause 11 does not sufficiently describe an MLD and how it operates in an ESS. CID 2239 suggests that if non-AP MLD and AP MLD, and their mapping is not described as AP-STA behaviour, then clause 4.5.3, 5, and 7 will need to be updated to explain how the MLDs interface to the DS. Both comments suggest that non-AP MLD and AP MLD should be defined as a STA. However at this point, TGbe has tried to define requirements for MLD to be related, but distinct from STA behaviour.

With respect to clause 4.5.3, TGbe D0.3 updates the clause to describe MLO behaviour relates to IEEE 802.11 services. There are not specific changes to this text requested by the commenter.

With respect to clause 5.1.5.3, an AP MLD and non-AP MLD behave much the same way as an AP and STA, respectively so, changes could be made to simply extend this clause to apply to an AP MLD and non-AP MLD:

“In a non-GLK AP, the MAC data plane architecture includes distribution system access in its role-specific behavior block, as shown in Figure 5-4 (Role-specific behavior block for a non-GLK AP). This block provides access to the DS for associated non-AP STAs as described in 4.5.2.1.”

With respect to clause 7 and clause 5.1.5.3, a non-AP MLD maps to an STA and a AP MLD maps to an AP for the purpose of these requirements.

The following document, <https://mentor.ieee.org/802.11/dcn/21/11-21-0316-00-0arc-mlo-architecture-reference-model.pptx> provides a reference model for MLO.

At this point, it’s difficult to determine what the issues are and what changes need to be made to the draft to address the issues.

### Proposed Resolution:

Rejected. The comment makes general assertions that changes are required to clauses 4.5, 5.1.5.3, and 7 but does not explain in any detail exactly what changes need to be made. A reference architecture for MLO has been provided in <https://mentor.ieee.org/802.11/dcn/21/11-21-0316-00-0arc-mlo-architecture-reference-model.pptx> but its not clear what changes need to be made to the draft to improve the description and requirements for MLO. The comment fails to identify changes in sufficient detail so that the specific wording of the changes that will satisfy the commenter can be determined.

### Comment

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| **CID** | **Clause** | **Page** | **Comment** | **Proposed Change** |
| 2085 |   | 0.00 | This draft has many network, architecture, and security issues due to the introduction of MLO and the way it is being specified. 802.11 should try to align as best it can with 802 network architecture and concept. This current draft does not seem to even attempt to do so and in the process may break the base standard's ability to provide logical links in an 802 network. |   |

### Discussion:

The comment asserts that there are many network, architecture, and security issues with the draft. However the comment fails to point to any specific issues with the current specification of requirements for MLO behavior that need to be resolved.

The following document, <https://mentor.ieee.org/802.11/dcn/21/11-21-0316-00-0arc-mlo-architecture-reference-model.pptx> provides a reference model for MLO.

### Proposed Resolution:

Rejected. The comment does not provide any detail on networking, architecture, or security issues for MLO that can be addressed by changes to the draft. A document describing a reference architecture for MLO was provided in <https://mentor.ieee.org/802.11/dcn/21/11-21-0316-00-0arc-mlo-architecture-reference-model.pptx>. As a result, the comment fails to identify changes in sufficient detail so that the specific wording of the changes that will satisfy the commenter can be determined.