**IEEE P802.15**

**Wireless Personal Area Networks**

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| Project | IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs) | |
| Title | **Proposed comment resolution for CID 2294 from LB113** | |
| Date Submitted | 18 January 2016 | |
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| Re: | 802.15.10 Consolidated Comment Entry Form, CID 2294 | |
| Abstract | Provides a proposed resolution to CID 2294 | |
| Purpose | To be used by the technical editor to apply the necessary changes to the draft to resolve CID 2294 | |
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**Comments**

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| **Commenter** | **Page** | **Clause** | **Line** | **Comment** | **Proposed change** |
| Noriyuki Sato | 74 | 6.2.2 | 32 | If the service ID is indicated but no mesh root is indicated when the data is sent by the device other than the mesh root, the destination will be always the mesh root that provides indicated service, since that indication means, "This data frame should be sent to any mesh root which provides indicated service". Since the device automatically selects mesh if there are multiple services that provides the indicated service, the destination unnecessarily belong to the mesh which the L2R layer selects to join. Though it may belong to the same mesh at some time, the L2R layer may switch to another mesh that provides same service. In this case, the destination will not be in same mesh anymore. | "If the service ID is indicated but the mesh root is not indicated by the primitive, the destination address should not be indicated and can be ommitted for the US. |

**Resolution: Revise**

In the current draft, a device belongs to only one mesh at a time for one service. As per 5.1.2.2.1 and 5.1.2.2.2, if a device finds a mesh with a better PQM, it disconnects with the first mesh, then joins the second one.

The way the MT, the NT and the global NT are recorded, a device only knows the PQM of the neighbors in the same mesh.

If no destination address is indicated, the frame should be transmitted to the current mesh root even if the mesh root ID in the primitive is 0xffff, but we can omit the destination address in the L2R in this case.

* ***Insert a new flag in L2R-DATA.request as follows***

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Type** | **Valid Range** | **Description** |
| MeshRootData | Boolean | TRUE, FALSE | Indicates whether the data frame is to be sent to the mesh root. |

* ***Insert the following at the end of the description of "FnlDestAddr":***

Ignored if MeshRootData is TRUE.

* ***Modify the 3rd and 4th paragraph on p.75 as follows:***

If the Source Address Present field is set to 0, the Source Address field is omitted from the Addressing fields. The Source Address field is omitted when it is the same as the MAC source address. When the Source Address Present field is set to 1, the Source Address field is present.

If the Destination Address Present field is set to 0, the Destination Address field is omitted from the Addressing fields. The Destination Address is omitted when it is the same as the MAC destination address or when the data frame is to be sent to the mesh root. When the Destination Address Present field set to 1, the Destination Address field is present.

* ***Insert the following text after the fourth paragraph on p.42***

If a data frame is received from a neighbor that does not belong to the local NT of the current mesh, the frame is dropped. An OUT\_OF\_NT\_DATA notification is sent to the next higher layer with the L2R-NOTIFY.indication primitive.

* ***Rename “Neighbor Table” in the MT to “Local Neighbor Table (Local NT)” to avoid confusion. Replace NT with “local NT” where applicable.***
* ***Modify 5.3.1 as follows:***

A device uses the information present in a TC IE from its neighbors to maintain US routes. A device may also use the information present in an NLM IE from its neighbors to do update the mutual link metrics and thus, the PQM of its neighbors. The TC IE and the NLM IE are defined in 6.1.2 and 6.1.3 respectively.

A device transmits EBs including a TC IE periodically every *l2rTcIeInterval* and may transmit EBs including a NLM IE periodically every *l2rNlmIeInterval*. It is possible to transmit a TC IE and an NLM IE in the same EB.

Upon reception of the TC IE, a device browses the local NT in the MT of the L2R mesh to which it belongs. If the transmitting address (TxA) of the TC IE is already present in the NT, the receiving device compares the information contained in the TC IE with the respective fields corresponding to TxA in the NT. If the MSN of the TC IE is newer than the MSN of the last TC IE, the received values in the local NT are replaced with the values retrieved from the new TC IE. The MSN rolls over as described in 5.2.1.

If the TxA of a TC IE is not recorded in the NT yet, the receiving device creates a new entry for the new neighbor in its local NT with the information retrieved.

If a device receives a TC IE from a neighbor with a depth *D'* providing a PQM better than that of its current parent(s), the current device concludes that it has found a better parent. It updates its depth to *D'+1* and informs its neighbors of its new depth in the next scheduled TC IE.

If a device misses l2rMaxMissedTcIe TC IEs from a neighbor, the corresponding entry in the NT is erased.

Upon reception of an NLM IE, if the TxA of the NLM IE is already present in the global NT and the NLM IE contains the link metrics of the receiving device, the device updates the outgoing metric and the mutual link metric corresponding to the TxA in the global NT. If the neighbor with the address TxA is also present in a local MT, the corresponding PQM value is also updated.

If the NLM IE is received from a device that is not recorded in the global NT yet, and if the neighbor is allowed be recorded based on *l2rMeshRecordMode*, and *l2rMeshNeighborMode* if *l2rMeshRecordMode* is set to ALL\_MESH, the device creates a new entry for the neighbor with the address TxA in its global NT. Otherwise, the NLM IE is discarded.

A device should have at least one parent in its NT. If all the parents have been erased from the NT, the device searches its NT to reinitialize its depth as described in 5.2.1. Then the device transmits a TC IE with an updated depth. This may trigger migration of its children to a new parent. If the device does not have any parent or sibling left in the NT, it should clear its NT, even if children are present, and rejoin an L2R mesh according to the procedure described in 5.1.2.3.

* ***Modify Figure 21 as follows:***



* ***Insert a new field “Mesh Root Data” in Figure 59 after Mesh Address Mode***
* ***Insert the following text after the second paragraph of 6.2.2.1***

If the Mesh Root Data field is set to 1, the current data frame is to be sent to the mesh root. The Destination Address Present is set to 0 and the Destination PAN ID and Destination Address fields are omitted. Otherwise, when the Destination Address Present is set to 1, the current data frame is to be sent to the address indicated in the Destination Address field; when the Destination Address Present is set to 0, the current data frame is to be sent to the address indicated in the Destination Address field of the MHR.