**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 Resolutions for i-116, i-120 and i-122** | |
| Date Submitted | 28 July 2016 | |
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| Re: | Proposed comment resolutions related to the 802.15.10 Consolidated Comment Entry Form, CID ‘unassigned’ | |
| Abstract | This document provides a proposed comment resolutions for the comments which are related to CID i-116, i-120 and i-122 of SB1 of 802.15.10 | |
| Purpose | To propose | |
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1. **Proposed resolution for CID i-116**

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| i-116 | Sato, Noriyuki | Oki Electric Industry Co., Ltd. | Technical | 13 | 4.4.1 |  | What the route estabilishment requires and what can be used in the forwarding are different. This table looks to make a confusion. Source routing can be used in any unicast routing including DS in storing mode but only DS in non-store mode depends on it. Furthermore, source routing can be used for US routing if the node knows all of intermediate addresses correctly. | No | Clarify dependency of DS establishment and US Reorder establishment function and forwarding function Use M/O/- instead of Y/O/N, N/A Add P2P establishment There seems to be network type SSPAN, non-SSPAN, TMCTP . Add a table or a list in 4.3. |

**AiP**

Replace the table with following tables.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Functions required for each path establishment | | | | | | | |
|  |  | Mesh root centralized path establishment | | P2P | Multicast | | Broadcast |
| RE1 | TC IE based US route establishment | M (5.2.3) | | - | M (5.2.3) | | - |
| RE2 | RA IE based DS route establishment (\*RE1 is required to use this function) | SM1: O (5.2.4) SM2: M (5.2.4) | | - | M (5.2.6) | | - |
| RE3 | L2R Routing IE based DS route establishment | SM1:M (5.2.4) SM2: - | | - | - | | - |
| RE4 | P2P Route Establishment | - | | M (5.2.7) | - | | - |
| SM1 | Storing mode | O.1 (5.2.4.1) | | - | - | | - |
| SM2 | Non-storing mode | O.1 (5.2.4.2) | | - | - | | - |
|  |  |  |  |  |  | |  |
| Functions can be used for each data forwarding | | | | | | | |
|  |  | Unicast US | Unicast DS | P2P | | Multicast | Broadcast |
| R1 | Source routing | O (5.4.1.1) | SM1: O (5.4.1.1) SM2: M (5.4.1.1) | SM1:O SM2:M | | - | - |
| R2 | Hop-by-hop routing | M (5.4.1.2) | SM1:M (5.4.1.2) SM2:- | SM1:M (5.4.1.2) SM2:O | | - | - |
| R3 | Multicast routing | - | - | - | | M (5.4.2) | - |
| R4 | Flooding | - | - | - | | - | M (5.4.3.1, 5.4.3.2) |
| RvS | Routing via a sibling | R2, R3:O (5.4.1.2) R1, R4: - | R2: O (only when used in US) | - | | - | - |
| HR | Hop-by-hop retransmission | O (5.4.1.2) | O (5.4.1.2) | O (5.4.1.2) | | - | - |
| E2EA | End to end acknowledgment | O (5.4.1.5) | O (5.4.1.5) | O (5.4.1.5) | | - | - |
| Dcat | Data concatenation | O (5.4.1.6) | O (5.4.1.6) | O (5.4.1.5) | | - | - |
| MPO | Multi PAN operation (TMCTP) | O (5.4.1.3) | | | |  | O (5.4.3.3) |

Add following table.

|  |  |  |
| --- | --- | --- |
| PAN Type | | |
| PT1 | Regular PAN | O.3 |
| PT2 | Small Scale PAN | O.3 |
| PT3 | Multi PAN operation (TMCTP) | O.3 |

Legends:

M: Mandatory

O.n: One of alternatives with same number (n) should be used.

‘-‘: Not applicable or not necessary

1. **Proposed resolution for CID i-120**

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| i-120 | Sato, Noriyuki | Oki Electric Industry Co., Ltd. | Technical | 14 |  |  | L2RD IE always need to be placed in the beacon at the scan phase for the device to avoid trying to associate to a device which doesn't talk L2R protocol. And it also avoids racing issue where MAC layer is up but L2R layer is not ready. A mesh root needs to know what PAN type is running before it starts mesh. Putting L2R IE in beacon also tells which PAN type (SSPAN, TMCTP etc.) is used to solve that issue. (0xffff can be used for mesh root ID when no mesh is available.) | No | Add following description after the second paragraph in 5.1.1.1 "Device other than the PAN coordinator needs to know what PAN type is running in the PAN to which it associates before starrting mesh. The PAN type is exchanged by L2R-D IE at discovery phase as described in 5.1.2.1."  Add following description after the last paragraph in 5.1.2.1: "If the coordinator that doesn't belong to any L2R mesh yet receives the EBR with the empty L2R-D IE, it replies with an EB with an L2R-D IE containing the information as well but mesh root ID field is filled with 0xffff or 0xffff ffff ffff ffff." |

**AiP**

All the device that associates to the PAN can propagate PAN information in EB. Accept this comment and update related part in the other part of the document.

1. Accept suggestion as is except that the text to be added in 5.1.1.1 should be added in last paragraph of 5.1
2. Apply following updates:

Add following sentence following the sentence in clause 6.1.1.3 (Mesh Root Address field)

If a coordinator in a PAN which receives L2R-D IE in EBR is not a part of any mesh yet, it sends one EB at least with L2R-D IE with address field as 0xffff or 0xffff ffff ffff ffff to announce the information related to the PAN in the descriptor filed (Bits for ‘Small scale PAN’ and ‘MPO’).

PAN coordinator should support L2R to exchange L2RD IE in after the last paragraph of 5.1

1. **Proposed resolution for CID i-122**

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| i-122 | Sato, Noriyuki | Oki Electric Industry Co., Ltd. | Technical | 117 | 7.2.1 | 6 | Data reuqest needs to have intermediate address list for source routing Route Advertise indication is required for the mesh root in non-storing mode to know path information. | No | Update and add following pritimives to enable the next higher layer at mesh root to manage source routing in non-storing mode: Add intermediate address list into L2R-Data.reuqest Add a new primitive to indicate route advertise information to the next higher layer at mesh root. |

**AiP**

Insert ‘Intermediate address list’ at the line 16 on the page 117 in clause 7.2.1.

Add a new primitive ‘L2RLME-ROUTE-ANNOUNCEMENT.indication on the table 19.

Add a new clause for the new primitive as follows:

7.1.1.18 L2RLME-INTERMEDATE-ADDRESS-LIST.indication

The L2RLME-INTERMEDATE-ADDRESS-LIST.indicaion primitive is invoked by the L2R layer to notify the next higher layer the Source Address and the Intermediate Address List in RA IE which the device received in non-storing mode.

The semantics of this primitive are:

L2RLME-INTERMEDATE-ADDRESS-LIST.inidication (

Source Address,

Number of intermediate addresses,

Intermediate address list

)

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| --- | --- | --- | --- |
| Name | Type | Valid Range | Description |
| Source Address | Address | Short address or EUI-64 | The address of sender of RA IE |
| Number of intermediate addresses | Integer | 1-255 | Number of intermediate devices |
| Intermediate Address list | List of Address | - | List of intermediate devices’ addresses |

Clause 5.2.4.2

DS routes are stored only by the mesh root

s/b

When RA IE or SRA IE is received by the mesh root and intermediate list is included in it, L2R sublayer of the mesh root invokes L2RLME-INTERMEDATE-ADDRESS-LIST.inidication to inform intermediate address list to the next higher layer.