**IEEE P802.15**

**Wireless Personal Area Networks**

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| Project | IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs) | |
| Title | **Comment resolution for CID #19, 192, 332, R62, R174, R211 of LB104** | |
| Date Submitted | 1 June 2015 | |
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| Re: | 802.15.10 Consolidated Comment Entry Form, CID #19, 192, 332, R62, R174, R211 | |
| Abstract | Provides a proposed resolution to CID #19, 192, 332, R62, R174, R211 | |
| Purpose | To be used by the technical editor to apply the necessary changes to the draft to resolve CID #19, 192, 332, R62, R174, R211 | |
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**Comments #19, 192, 332, R62, R174, R211**

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| --- | --- | --- | --- | --- | --- | --- |
| **CID** | **Commenter** | **Page** | **Clause** | **Line** | **Comment** | **Proposed change** |
| 19 | Billy Verso | 3 | 3.1 | 44 | In the definition of "small scale PAN:" the 2nd last sentence ends with the phrase "and there is a unique entity" which does not convey anything to me, it seems something is missing but I don't know what? | add something to clarify what "and there is a unique entity" means, or delete if if it is not necessary to say this here. |
| 192 | Don Sturek | 23 | 5.2.1 | 40 | "List of reachable destinations" - For the mesh root, is this a description for every device in the network? Simiarly, for any router in the L2 mesh, isn't this every Entity ID in the network? Potentially, this is a very large list in every router. | Describe how this is not an "order n" list for every router in the network (where n is the number of routable destinations). For example, in a smart metering applications, wouldn't this be every meter in the network? |
| 332 | Don Sturek | 54 | 6.2.1.2 | 25 | The Entity ID List field only permits up to 8 values. Earlier in the document, applications like smart metering and smart cities are listed. Many of these applications will have up to 10,000 devices in a single PAN with 50 or so neighbors per device. Limiting the Entity ID List to just 8 seems confining. | Either expand the Entity ID List or explain how this allows for scaling to 10 of thousands of devices with 50 or so neighbors without limiting the route destination to just 8 devices in the network |
| R62 | Charlie Perkins | 17 | 5.1.2.2 | 28 | EntityID is undefined | define term |
| R174 | Charlie Perkins | 54 | 6.2.1.2 | 22 | identifier space needs more description and specification | Provide text about ID space. Is it a registry? |
| R211 | Charlie Perkins | 62 | 6.2.6.2 | 49 | "Entity ID field identifies an entity" | This might require a registry of EntityIDs |

**Resolution: AiP**

There seems to be confusion other the term “Entity”. Modify the draft based on the instructions below:

* ***Replace all occurrences of “Entity” or “external entity” with “Service”***
* ***Replace all occurrences of “EntityID” with “ServiceID”***
* ***Modify the “mesh root” definition as follows:***

**mesh root**: Device with the depth 0 in a L2R mesh tree providing connectivity that may enable access to a service. ~~It may act as a gateway connecting to an external entity or service.~~

* ***Modify the definition of “small scale PAN” as follows:***

**small scale PAN**: PAN where the farthest end device from the PAN coordinator is within a limited number of hops away. The limitation of the number of hops to define a small scale PAN relies on the implementer and is out of the scope of this recommended practice. The mesh root of the L2R mesh tree is located at the PAN coordinator and offers a connection to a single service. The same addressing mode is used within the PAN.

* ***Modify the first paragraph of clause 4.2 as follows:***

A L2R mesh tree operates within a PAN in a mesh tree topology. A L2R mesh tree has a mesh root which may enable access to a service such as a data collection service or a control and monitoring service. The mesh root acts as the controller of the L2R mesh tree, defines the functionalities and the metrics in use in the L2R mesh tree, and may be located in the PAN coordinator or in a full-function device (FFD).

* ***Replace Figure 31 with:***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Bits: 0-2** | **4-7** | **Octets: Variable** | **…** | **0/Variable** |
| Number of Services | Reserved | Service 1 | … | Service N |

* ***Rename 6.2.1.2 to “Service List field”***
* ***Delete the third paragraph of 6.2.1.2***
* ***Insert the following text at the end of 6.2.1.2:***

The Service field is formatted as illustrated in Figure xxx.



**Figure xxx: Format of the Service field**

The Service ID field contains the identifier of a service reachable through the L2R mesh tree. The Service ID field may take one of the values listed in Table xxx.

**Table xxx: Service identifier values**

|  |  |
| --- | --- |
| **Service ID** | **Service name** |
| 0x01 | Internet |
| 0x02 | Network Management |
| 0x03 | Data collection |
| 0x04~0x20 | Reserved |
| 0x21~0xff | Vendor specific |

If the Sub-Service field is set to 1, the Sub-Service List field is present. Otherwise, the Sub-Service List field is omitted.

The Sub-Service List field is formatted as illustrated in Figure xxx



**Figure xxx: Format of the Sub-Service List**

The Number of Sub-Services field indicates the number of Sub-Service IDs in the Sub-Service List field.

A Sub-Service ID field contains the identifier of a sub-service reachable through the L2R mesh tree.

The Sub-Service List field is provided for an implementer wishing to define sub-services under the same service (e.g.: Temperature data collection, traffic data collection etc.), and defining sub-service identifiers is out of the scope of this document.

* ***Replace the second row of Table 1 with:***

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Type** | **Valid range** | **Description** |
| Service List | List of services | - | List of the services reachable through the L2R mesh tree defined in Table xxx. |

* ***Insert the following table after Table 1:***

**Table xxx – Service Entry**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Type** | **Valid range** | **Description** |
| Service ID | Integer | 0x00 – 0x7f | List of the services reachable through the L2R mesh tree. An implementer may define sub-services as described in 6.2.1.2, however the representation of the sub-service related information is out of the scope of this document. |
| Sub-service present | Boolean | TRUE, FALSE | Indicates if the service specified by Service ID is sub-divided into sub-services. |
| List of sub-services ID | List of integers | - | List of sub-service identifiers. The definition of sub-service IDs is out of the scope of this document. |

* ***Replace the third row of Table 3 with:***

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Type** | **Valid range** | **Description** |
| Service List | As described in Table 1 | As described in Table 1 | As described in Table 1 |

* ***Insert*** ServiceList ***before*** DSRouteRequired ***in the semantics of the*** L2RLME-TREE-START.request ***primitive***
* ***Insert the following row before DSRouteRequired in Table 18:***

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Type** | **Valid range** | **Description** |
| ServiceList | Set of octets | - | Specifies the services, and sub-services if any, accessible through the device triggering the start of a L2R mesh tree. |

* ***Replace all occurrences of “EntityIDList” with “ServiceList”***
* ***Replace the first row of Table 22 with:***

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Type** | **Valid range** | **Description** |
| ServiceList | Set of octets | - | Specifies the services, and sub-services if any, accessible through the device triggering the start of a L2R mesh tree. |

(A device should be able to join a tree even if it does not provide the service it wants to access)

* ***Delete EntityID(List) from*** 
  + ***L2RLME-JOIN-TREE.request***
  + ***L2RLME-SCAN-TREE.request primitive***
  + ***Table 14***
  + ***Table 22***
* ***Delete the error code INVALID\_ENTITY from Table 23***
* ***Modify Figure 56 as follows***

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Bits: 0-10** | **11-14** | **15** | **Octets:2** | **Variable** | **2/8** | **0/Variable** | **1** | **1** | **1** | **0/1** | **0/Variable** |
| Length | Sub-ID | Type = 1 | Descriptor | Service | Mesh Root Address | Addressing Fields | L2R Sequence Number | TTL | E2E Retry Limit | Number of Intermediate Addresses | Intermediate Address List |

* ***Replace 6.2.10.2 with:***

**6.2.10.2. Service field**

The Service field identifies the service and sub-service, if any, a frame is addressed to. This field is formatted as illustrated in Figure xxx.