**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 #257, R201, R225, R212, R19, R20, R116, R156 of LB104** |
| Date Submitted | 2 June 2015 |
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| Re: | 802.15.10 Consolidated Comment Entry Form, CID #257, R201, R225, R212, R19, R20, R116, R156 |
| Abstract | Provides a proposed resolution to CID #257, R201, R225, R212, R19, R20, R116, R156 |
| Purpose | To be used by the technical editor to apply the necessary changes to the draft to resolve CID #257, R201, R225, R212, R19, R20, R116, R156 |
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1. **Kinds of SN : CID R19, R20, R116, R156, R201, R212, R225**

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| **CID** | **Commenter** | **Page** | **Clause** | **Line** | **Comment** | **Proposed change** |
| R19 | Charlie Perkins | 4 | 3.2 | 47 | SN | Clarify relation to DSN, MSN, L2RSN, etc. |
| R20 | Charlie Perkins | 4 | 3.2 | 47 | SN | Is it per node? Per tree? Per MAC address? |
| R116 | Charlie Perkins | 40 | 5.4.2 | 54 | Is L2R SN per mesh root? | Should be specified somewhere if not already |
| R156 | Charlie Perkins | 52 | 6.2.1 | 46 | There is no SN field in the IE | Insert if needed |
| R201 | Charlie Perkins | 59 | 6.2.3 | 52 | Which sequence number is this? | Insert clarifying text |
| R212 | Charlie Perkins | 63 | 6.2.6.5 | 8 | "the sequence identifier of the RA IE" | Is this the same as the L2R Sequence Number? |
| R225 | Charlie Perkins | 68 | 6.2.10 | 7 | "L2R Sequence Number" is explicit; are all other SNs like this? | Insert clarifying text |

**Resolution: AiP**

* There should be a MSN (Mesh SN) for the TC IE per mesh tree, set by the mesh root.
* The L2R-D does not require a SN since it is sent only once at the time of discovery.
* And:
* Option 1: A L2R SN for all other L2R IEs per device. If multiple nested IE are present in the same frame (E.g.: L2R routing IE and DAgg IE), they should use the same SN.
* Option 2: A SN for each L2R per device. I.e. RA IE/SRA IE SN, Data SN, DAgg SN, etc.

FYI: In [15.4], there is the BSN for beacons and a DSN for data, commands and ACKs.

1. **SN incrementation definition : CID 257**

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| 257 | Tero Kivinien | 33 | 5.3.1 | 16 | I would have assumed the SN here would use some kind of sequence number arithmetics, to detect whether it wraps around, From this it seems that when SN reaches 0xff, then no more updates can be done, and devices needs to be reset and L2R mesh needs to be recreated (or do you need to throw the devices away, and buy new ones :-) | Define how SN is incremented, and how it can wrap around (i.e. most likely if new SN < old SN, and old SN > 0x80, then you accept new SN even when it is lower. |

**Resolution: AiP**

From 6.7.1 in [15.4-REVc]:

Each device shall generate exactly one data sequence number (DSN) regardless of the number of unique devices with which it wishes to communicate. The value of *macDSN* shall be permitted to roll over.

Each coordinator shall store its current beacon sequence number (BSN) value in the MAC PIB attribute *macBSN* and initialize it to a random value; the algorithm for choosing a random number is outside the scope of this standard. …The value of *macBSN* shall be permitted to roll over.

From 7.4.2.2 (DA IE) in [15.4-REVc]

The Sequence Number field shall be set to a value identifying the set of addresses to be announced. An increment in the Sequence Number indicates that a new set of neighbor addresses is being announced. The Sequence Number shall be incremented when any address in the set of neighbor addresses has been changed.