**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 2346** | |
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| Re: | Proposed comment resolutions related to the 802.15.10 Consolidated Comment Entry Form, CID #2346 | |
| Abstract | This document provides a proposed comment resolutions for the comments which are related to indirect transmission forwarding of D3 of 802.15.10 | |
| Purpose | To propose | |
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1. **CID#2346**

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| 2346 | Noriyuki Sato | OKI |  |  |  | Clarify indirect tranmission when the broadcast or the multicast is used with non beacon enabled mode in 5.4. In many implementation, the parent performs multiple unicast transmissions for RFD using indirect transmission when it forwards MC or BC frame. | Add a sub clause to explain how the indirect transmission for the non beacon enabled mode is managed by the L2R layer. |

**AiP**

In the IEEE Std 802.15.4-2015, a broadcast transmission with indirect transmission for non-beacon enabled PAN is not specified, therefore L2R broadcast transmission should be diverted to multi-unicast indirect transmission to send an L2R broadcast frame to each RFD. An L2R broadcast frame contains broadcast short address or 64-bit broadcast address as the destination address in MHR However, in the indirect transmission from FFD to RFD a unicast address of RFD is used as a destination address in MHR. That may cause mismatch of address modes between MHR and Routing IE and it requires to change a destination address when SLR IE specified in 6.1.7 is used since SLR IE doesn’t contain address mode and addresses in SLR IE are assumed to use same address modes with ones in MHR (e.g. it happens when EUI64 is used in the mesh routing and broadcast short address is used in MAC layer.). To avoid mismatch of address modes, L2R layer of FFD which performs indirect transmission to RFD should change the address mode of the destination address in SLR IE to match it to the one in MHR by using same broadcast address in MHR. It may be performed by using unicast address of RFD in same address mode in MHR (same destination addresses in MHR and SLR IE) if the NHL has a functionality to know that frame is intended to broadcast even with that change in SLR IE.

* ***Add a new section 5.4.3.1 ‘Broadcast routing with indirect mode transmission in non-beacon enabled PAN with following description.***

When indirect transmission is enabled in a non-beacon enabled PAN, the transmission of a broadcast frame is performed through multiple unicast transmissions. Therefore the destination address in the MHR is set to the unicast address instead of the broadcast address.

During an L2R broadcast frame transmission using indirect transmission, the addressing mode of the addressing fields in the L2R Routing IE or the SLR IE should be set as follows:

* The Source Address and the Destination Address fields in the MHR, and the Original Source Address and the Final Destination Address fields in the L2R Routing IE or the SLR IE should use the same addressing mode, as a unique addressing mode is used in an L2R mesh.
* The Source Address field in the MHR should contain the address of the transmitting device
* The Destination Address field in the MHR should contain the address of the next hop
* The Original Source Address field should contain the address of the device originating the broadcast frame.
* In IEEE Std 802.15.4-2015 devices:
  + If the MHR uses short addresses, the Final Destination Address field in the L2R Routing IE or the SLR IE should contain the short broadcast address 0xffff.
  + If the MHR uses EUI-64s, the Final Destination Address field in the L2R Routing IE or the SLR IE should contain the 64-bit broadcast address as defined in IEEE Std 802-2014.

The Final Destination Address field may contain the unicast address of the next hop if a higher layer is able to determine whether a frame is a broadcast frame.

* In devices developed prior to the release of IEEE 802.15.4-2015 in which the 64-bit broadcast address in not supported:
  + The Destination Address field in the MHR always contains the short broadcast address, regardless of the addressing mode of the Source Address field.
  + The Original Source Address field in the L2R Routing IE or the SLR IE should use the same addressing mode as the Source Address field in the MHR.