**IEEE P802.15**

**Wireless Personal Area Networks**

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| Project | IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs) | |
| Title | **Comments on some notes for CfFP scenarios of TGD** | |
| Date Submitted | June 30, 2014 | |
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| Re: | [Subclause 7.1.2 of 802.15 TG10 TGD, [CfFP Scenarios](https://mentor.ieee.org/802.15/dcn/14/15-14-0319-00-0010-tgd-scenario-parameters.docx)] | |
| Abstract | [Comments on some notes for Scenario Parameters for CfFP] | |
| Purpose | [Define the communication patterns to consider in the scenario for final proposals] | |
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**Introduction**

This document has been prepared to suggest further comments on a couple of notes for CfFP scenarios specified in Subclause 7.1.2 of TG10 TGD. The first author of this document suggested the comments initially through the 802.15.10 email reflector. In this document, further comments on these comments are made.

**Comments on notes for CfFP scenarios**

**The further comments are as shown in green in the following:**

**Comment 1: PAN coord to device unicast**

[Soo-Young Chang’s initial comment]

One of the notes regarding the table in Subclause 7.1.2 of TGD, it says "4 In a PAN coord to device unicast communication, the PAN coord shall send a packet to every devices (M-1) alternately". Why do we need to mention that "the PAN coord shall send a packet to every devices (M-1) alternately", not simply "to a devise"? Does unicast mean that the PAN coord needs to send data to a device? Why did you mention "to every devices (M-1) alternately" rather than "to a device"?

[Verotiana’s comment]

This refers to applications where a coordinator needs to control all the devices in a network. It means that the coordinator will have data to transmit to every devices (not simultaneously) . Unicast means that one packet as one source and one destination. This does not restrict the number of devices to which another device sends packets. That being said, if the group agrees on using only one device as the destination in a downstream scenario, NICT does not have any strong objection against that.

**[Soo-Young Chang’s further comment]**

**A coordinator can control all devices - one by one, but simultaneously. This means that if we have successful communication between a coordinator and a device, it can control all devices through unicast one by one. Therefore the authors believe that we do not need to specify a scenario where a coordinator needs to communicate (M-1) devices through unicast. The point is that the proposers will do simulations for all (M-1) devices to analyze the performance even if they are not instructed to do that. If the coordinator needs to send the same information to all devices at the same time, it can be done through broadcast.**

**Our suggestion is to modify the note to avoid confusion with general concept of unicast and to mandate simulations all links between a PAN coordinator and each device as**

**“4 In a PAN coord to device unicast communication, for simulation purposes, the PAN coord shall send a packet to each of (M-1) devices one by one to check all links between the PAN coord and each device.”**

**Comment 2: Device to PAN coord**

[Soo-Young Chang’s initial comment]

I have the same question in another note "5 In a device to PAN coordinator communication, all the devices (M-1) shall send a packet to the PAN coordinator with the packet birth rate specified in the table". Does it mean that all (M-1) devices send a packet to the PAN coord at the same time?

[Verotiana’s comment]

Many use cases employing the upstream scenario such as Smart metering or monitoring applications require all the devices to send data to the coordinator. This is why all the devices are required to send a packet to the PAN coordinator. The devices do not necessarily send a packet at the same time. In particular, NICT has end users requiring this scenario. However, NICT does not object to including another simulation case with only one source, if it is the wish of the group. Whether this simulation case is mandatory or optional and which device should be selected as the source are subject to discussion.

**[Soo-Young Chang’s further comment]**

**The commentor does not intend to add another scenario. As mentioned in the above comment, only communication between a coordinator and a device needs to be defined in the scenario. If this communication is successfully performed, other devices can do the same. To analyze performance, the proposers will do simulations between each of devices and the coordinator even though the TGD does not mention it.**

**Our suggestion is to modify the note to avoid confusion with general concept of unicast and to mandate simulations all links between each device and the PAN coordinator as**

**“5 In a device to PAN coord communication, for simulation purposes, with the packet birth rate specified in the table each of (M-1) devices shall send a packet to the PAN coord one by one to check all links between each device and the PAN coord.”**

**Comment 3: Device to device communication**

[Soo-Young Chang’s initial comment]

In another note, it is written that "7 Unicast and broadcast PAN coordinator to device, and unicast device to PAN coordinator traffic patterns shall be simulated in a linear topology." I am wondering why they should be simulated in a linear topology? My understanding is that the routing for linear topology is fixed, which means we do not need to find the best routing for the linear topology.

[Verotiana’s comment]

The linear topology has simply been adopted from document IEEE802.15-14-0239-02-0010 where linear topology was proposed as the scenario E. NICT has no objection in removing this simulation case if it is the wish of the group.

**[Soo-Young Chang’s further comment]**

**The original intention of IEEE802.15-14-0239-02-0010 was to use a traffic pattern of Unicast PAN coordinator to device and a traffic pattern of device to Unicast PAN coordinator for traffic pattern of linear topology.**

**Our suggestion is to modify the note to avoid confusion as:**

**"7 A linear topology shall be simulated using traffic patterns of unicast PAN coordinator to device and unicast device to PAN coordinator."**