**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 regarding documents #355r0** |
| Date Submitted | [12 June, 2014] |
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| Re: | [TG10 Scenario parameters #338r5] |
| Abstract | [This documents gives comments on the current scenario description in document #338r5] |
| Purpose | [The comments herein are to be used to define the scenarios] |
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**Introduction**

This document provides responses to the comments given in 15-14-0355-00. The responses can be found inline in blue.

**Comment 1: Upstream and downstream scenario**

We would like to suggest deleting the 3rd scenario (Balanced upstream and downstream) since the upstream traffic is already addressed in the first scenario and the downstream is already addressed in the second scenario.

[OKI] We agree to delete 3rd scenario. That doesn't mean balanced use case doesn't exist. It means that 3rd use case is already covered by verifying 1st and 2nd scenario.

**Comment 2: Linear topology**

* We should define the position of the PAN coord in the line. We suggest placing the PAN coordinator at the center of the line.
* What is the traffic pattern to be used in a linear topology: Unicast, Multicast, Broadcast? PAN coord to device / device to PAN coord?

We suggest using PAN coord to device, broadcast: for the use case of street lighting of an entire road

[OKI] We agree to put a PAN coordinator at the center of the line.

Regarding traffic pattern, we suggest using scenario 1 and 2. Typical use case for the linear topology would be smart lighting but it may be used for monitoring use case.

We may use m x 1 for the linear topology but also m x 2 since we may have lighting pole on both side of street. We still suggest to use m x 1 unless anyone want to use m x 2.

I don't think we need layer 2 path establishment protocol if we just use broadcast on the linear topology. We may use flooding just with verifying sequence number to avoid duplicate.

**Comment 3: Device to device communication**

We should define the placement of the source and the destination in the D2D communication. We suggest using the case depicted below:

From the upper left corner device to the lower right corner device

 

**Open comments to the group**

**Comment 4: Link failure rates**

The group needs to assign values to the link failure rates of each link describe in figures a) and b).

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| a) | b) |

[OKI] We suggest using a) unless there is any issue since we already have simulation codes for a) which was used for the Preliminary Proposal. Even if the group decide to adopt b), it would not be a big problem for us. Regarding each link failure values, we don't have any comments. We are fine even if it is error free link.

**Comment 5: Multicast**

The group needs to decide on the placement of the devices belonging to the multicast group.

[OKI] We consider the source should be PAN coordinator and destination should be other device than PAN coordinator.

The worst case will be the members of the group are uniformly dispersed at the edge of the network. I don't have any good idea what deployment will be appropriate to cover use case but I tried.

 - Deployed evenly including mid and center of the network (random subscriber)

 - pick some nxn block from the network (control nodes at certain place)

**Comment 6: Multiple devices to device**

The group needs to decide on the placement of the multiple source devices and destination.

[OKI] No special comments on this but comments 3 from NICT with extending source nodes from 1 to 'n' may be fine.

**Comment 7: Number of PAN coordinators**

When we have 3 PAN coordinators in the P2P scenario does this mean that:

* + 1. We still have 1 grid node placement with 3 PAN coordinators and that each device will associate with the most suitable PAN?



* + 1. We have 3 grids of M nodes each and 1 PAN coordinator in each grid? However, in this case in the largest scenario, we would end up with 30000 nodes to simulate.



(M x 3) nodes

* + 1. We have 3 grids of M/3 nodes and 1 PAN coordinator in each grid?



M nodes

In the case where we have 3 grids, how is the grids’ position? E.g.: In the figures above, the PANs are lined up horizontally.

When there are multiple PANs, which devices should be the source and the destination?

We suggest to avoid multicast, broadcast and multiple devices to device traffic patterns in a multiple PAN scenario and to only focus on the D2D unicast case.

[OKI] No strong comments. Dr. Soo-Young may have actual scenario and use case. Unless all of attendee understand how to run simulation with that condition, we should remove it from the scenario. I don't think all of functionality should be verified with simulation.

**Comment 8: multiple entry/exit point**

How are we supposed to use the multiple entry/exit point?

[OKI] No comments. I'm not sure if Dr. Soo-Young considers entry and exit points as originator and destination or as connection to the backhaul. I suspect we should clarify.

**Comment 9: mobility**

How many nodes should be mobile if mobility is applied in the P2P scenario? All of them? Only the source or the destination, both? …

[OKI] A mobile node? I don't have any use case for it. We need to specify the speed by xx unit (in grid)/seconds not by xx m/seconds or we need to specify real distance of grids and real PHY to be used.

I have only use case - A user wants to let a node join the network AD-HOC basis for diagnostic purpose. It doesn't require mobility strongly. But it requires quick join and reachability comparing to slow M2M network behavior.

**References**

1. 15- 14-0338-05 TG10 Scenario parameters