**IEEE P802.15**

**Wireless Personal Area Networks**

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| Project | IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs) |
| Title | **TG10 Scenario Parameters** |
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| Re: | [[TGD Scenario Parameters #319r0](https://mentor.ieee.org/802.15/dcn/14/15-14-0319-00-0010-tgd-scenario-parameters.docx)] |
| Abstract | [Scenario Parameters for CfFP - Working Document.] |
| Purpose | [Define the parameters to consider in the scenario for final proposals] |
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|  | **Scenarios** |
| **Parameter** | **Mostly Upstream:****Smart metering, infrastructure monitoring, Irrigation Optimization** | **Mostly Downstream:****Street lighting, smart lighting** | **Balanced upstream and downstream:****CEMS, BEMS, HEMS** |
| Packet size |  |  |  |
| Data rate |  |  |  |
| Packet birth rate |  |  |  |
| Duty cycle |  |  |  |
| Node density |  |  |  |
| Mobile devices (Y/N) - speed |  |  |  |
| PAN Coord to Device | Unicast (Y/N) |  |  |  |
| Multicast (Y/N) |  |  |  |
| Broadcast (Y/N) |  |  |  |
| Device to PAN Coord |  |  |  |
| Device to device | Unicast (Y/N) |  |  |  |
| Multicast (Y/N) |  |  |  |
| Broadcast (Y/N) |  |  |  |
| Linear Topology (Y/N) |  |  |  |

**Definitions**:

Data rate: data rate at the physical layer

Packet birth rate: rate at which packets are being generated

Duty cycle: ratio of active/non-active state of device

Device: node other than the PAN coordinator

N: Number of nodes in the PAN

N = 121 (11x11), 999 (33x33), 10,000 (100x100)

For Linear Topology N = 999 (33x33), where the middle row or column has N=100

Unicast: transmission from 1 source to 1 destination

Multicast: transmission from 1 source to n destinations (n < N-1)

Broadcast: transmission from 1 source to N-1 destinations