Theory and Terminology

Time Division **Multiple** Access (TDMA)

Time Division Multiple Access (TDMA) is a communications access method that provides a specific communication time slot for each device on the network, ensuring devices do not conflict with each other.

In contrast, a contention-based architecture allows all devices on a network access to the communications channel at once, leading to transmission/data collisions. When a collision occurs, both nodes' messages are lost and both nodes must attempt to send their data again.

A TDMA architecture also lends itself to efficient power management procedures. When each device knows the time period to receive or send, the radio doesn't have to 'listen' all the time. Power usage can be managed efficiently, allowing radio devices to operate from 3.6 V lithium batteries when necessary.

- 8 Nodes per network results in a 0.0625 sec update cycle
- 16 Nodes per network results in a 0.125 sec update cycle
- 32 Nodes per network results in a 0.250 sec update cycle
- 47 Nodes per network results in a 0.500 sec update cycle