Wireless Technologies

BLE (Bluetooth Low Energy)	ZigBee	LoraWAN (Long range Area wide network)
• BLE is low power • It is cheap • Data rate is 1 mb/s • Range 50-150 metres • BLE does not officially offer mesh network* * Few BLE solutions do offer mesh network (Nordic, Qualcomm) BLE supported hardware on Mbed • Nordic development board • Seeed Arch BLE	• Used in mesh network designed to carry small amounts of data across medium distances • Low power (more than BLE) • Data rate is 250 kb/s • Range 10-100 metres • Official Mbed library	• Data rate is 0.3 - 50 kb/s • Range 2-3km (urban environment) • Power consumption lower than ZigBee

Conclusion:

BLE is a radio protocol meant for PAN. Good for devices that stay in close proximity to each other. It is no ideal for devices that are separated by more than a few meters. Zigbee is a better option for our needs. Considering ZigBee's almost instant network join time it is more suitable for our project needs as well as its support for large-scale automation purposes. The trade-off that had to be considered was ZigBee's higher power consumption than BLE, however, given our project scenario, this trade-off can be afforded.