Zigbee Project Sketch

1. Introduction

- Developed by Connectivity standards alliance former known as Zigbee Alliance (Source: csa-iot.org)
- First release was in 2005 known as Zigbee 2004 (Source: Wikipedia)
- CSA is a group of companies that dedicated themselves to developing iot solutions and promoting those and especially their Zigbee standards. They have 5000+ Zigbee certified Products and consist of 500+ member companies (source: csa-iot.org, Wikipedia)

2. Zigbee standard

- IEEE802.15.4 based communication protocol used mostly in industrial applications and smart home applications.
- Zigbee uses the transport services of the IEEE802.15.4 network specification but is not the same thing. (source = 1)
- Very low power consumption (source = 1)
- Range up to 150 meters made possible by direct sequence spread spectrum (DSSS) (source = 1)
- Uses 868 MHz ISM band in Europe, 915 MHz in North America and Australia and 2,4 GHz in worldwide applications. (source = 1)
- Data rates go from 20kbps to 40 and 250 kbps (2011) (source = 1)
- Different Wave bands assure that no interference with Wi-Fi, Bluetooth or other communication protocols will occur. (source = 1)
- “Employs 64-bit and 16–bit short addresses to support theoretically more than 65,000 nodes per network.” (source = 1)
- Up to 653356 devices in one Zigbee network (source = 1)
- 50-meter distance between different Zigbee devices with ability to relay information from node to node. (source = 1)
- Zigbee Network has the capability to be used on a significantly huge area. (source = 1)
- Device types
- Deep dive in nodes

Source 1 = https://ieeexplore.ieee.org/abstract/document/5942102

3. Examples of Application

- Green city and government ecological environment management (source: https://www.sciencedirect.com/science/article/abs/pii/S235218642100359X)
- Wireless Sensor Network Solution for Precision Agriculture Based on Zigbee Technology (source: http://www.repository.embuni.ac.ke/handle/123456789/964)
- Smart home applications
- Industrial applications
- Many more

4. Challenges

5. Conclusion

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