# ZIGBEE TECHNOLOGY

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# ABSTRACT

A wireless technological device which is popular for extremely low power, and low bit rate wireless PAN technology called “zigbee”.

Designed for

-wireless automation

-lower data tasks

ZigBee enables new opportunities for wireless sensors and control networks, zigBee is standard based.

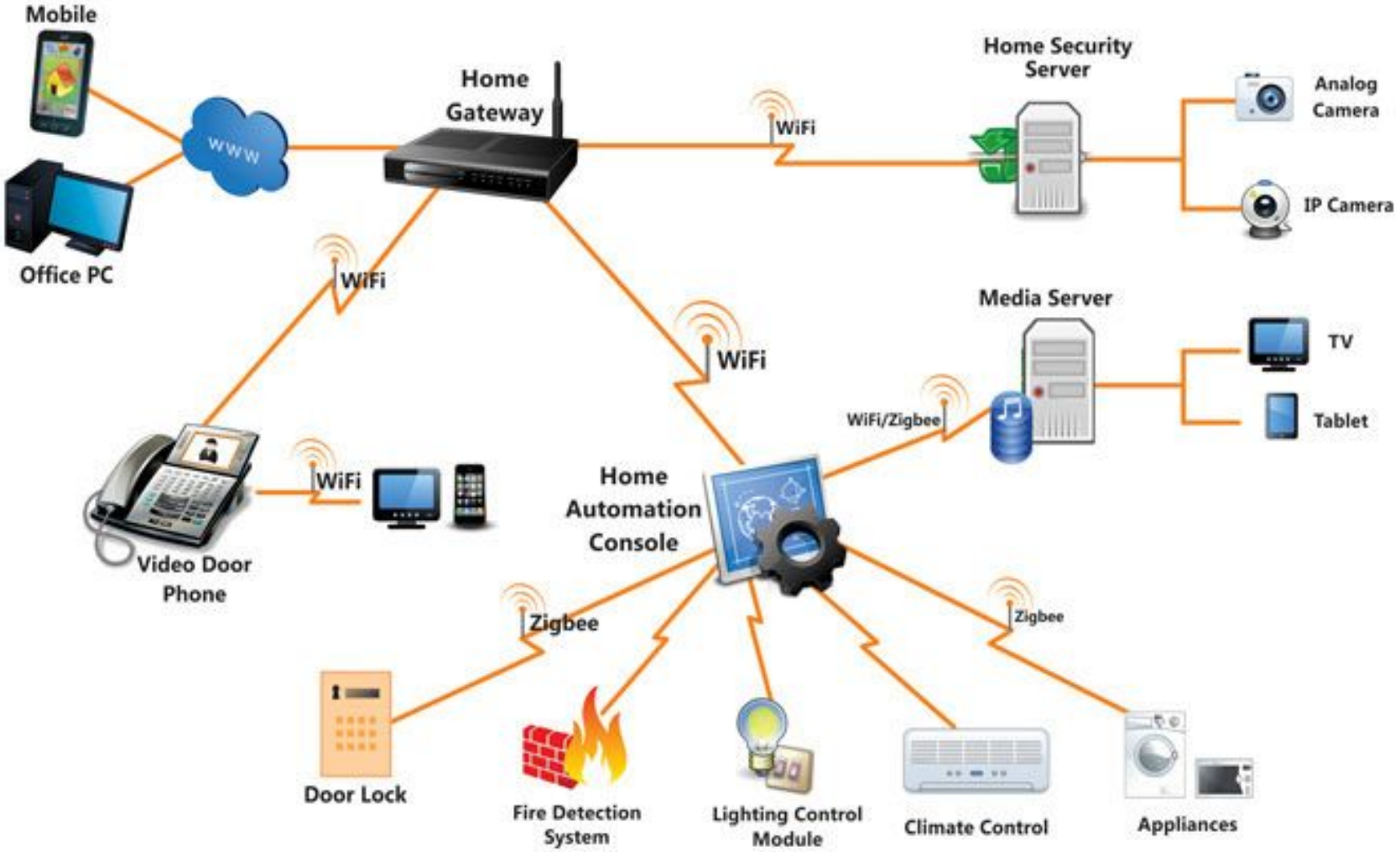
# INTRODUCTION

Technological standard created for control and sensor networks.

Based on the IEEE 802.15.4 standard.it can provide the wireless personal area network.

ZigBee specifications is to be simpler and less expensive compare with the other WPN’s such as Bluetooth.

Designed for low power consumption allowing batteries to  to essentially last forever.


Mobile
Office PC
www
Home Gateway
WiFi
Home Security Server
Analog Camera
IP Camera
WiFi
WiFi
Media Server
TV
Tablet
WiFi/Zigbee
Video Door Phone
WiFi
Home Automation Console
Zigbee
Zigbee
Door Lock
Fire Detection System
Lighting Control Module
Climate Control
Appliances

# EXISTING SYSTEM

Bluetooth is focussed on connectivity between laptops, PAD’s as well as more general cable replacement.

It can only connect two devices at once.

It can only support the less number of nodes.

Battery use increased on device.

# PROPOSED SYSTEM

Zigbee is focused on control and automation.

ZigBee uses low data rates, low cost, low power consumption and work with small packet device.

ZigBee network can support a larger number of devices and a longer range between devices than bluetooth

# ZIGBEE VS BLUETOOTH


| FEATURES | ZIGBEE | BLUETOOTH |
|---|---|---|
| Power Profile | years | days |
| Complexity | Simple | complex |
| Nodes | 64000 | 7 |
| Latency | 30 ms – 1s | 10 seconds |
| Range | 70m – 300m | 10m |
| Extendibility | Yes | no |
| Data Rate | 250 Kbps | 1 Mbps |
| Security | 128bit AES | 64bit, 128bit |
| Typical network join time | 30 milliseconds | 3 seconds |
| Application focus | Monitoring and control | Cable replacement |

# ZIGBEE DEVICES TYPES

Zigbee system structure consists of three different types of devices such as

ZigBee Coordinator(ZC)

ZigBee Router(ZR)

ZigBee End devices(ZED)

# NETWORK TOPOLOGIES

The number of routers, coordinators and end devices depends on the type of network such as

Star Topology

Mesh Topology

Cluster Tree Topology

# CONCLUSION

In future all devices and their controls will be based on this standard.

Since Wireless Personal Area networking applies not only to household devices, but also to individualized office automation application , zigBee is here stay it is more than likely the basis of future home networking solution.