

# Intelligent Device TO Device Communication Using IoT

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**Abstract:** - Internet of Things is an emerging technology and is being developing nowadays. Therefore the communication between the devices is an important factor in IoT. Devices will communicate with each other intelligently, without any centralized control and gather, share and forward the information in a multihop manner, ultimately, the quality of gathered information depends on the achieving device to device communication. In device to device communication, the devices can communicate with each other by using the Bluetooth controller which can be used for establishment of the communication between the devices. The devices interact with physical world using internet protocols and standards in order to collect data from the environment. Thus we are going to present an overview of how intelligent device to deice communication can be achieved in the IoT system.

**Keywords** - *IoT, Intelligent Device, Device to Device Communication, Bluetooth, WIFI, Sensor.*

## I. INTRODUCTION

With the approach of the internet, people are connected in a large number. However, due to the proliferation of short range networks and the prevalence of devices connected to these networks, a seamless interconnection between devices is gradually being created. These short range networks consist of wireless sensor network (WSN), Bluetooth, ZigBee. By using such technologies the communication can be done in the network. It helps in the data gathering, sharing, etc. For information sharing, gathering will involve certain series of communication between the devices. The communication between the devices is done by the using the concept of IoT. IoT is the technology where everything is connected to the Internet. The devices interact with the physical world using Internet protocols and standards in order to collect data from the environment. For the complete IoT concept, cloud computing offers a dynamic way of accumulating and storing data. Using IoT the communication between the devices is automated, which reduces the human effort and time. These automated devices can transfer the required information among the devices and thus the work can be done with perfection and without human interference.

## II. ABBREVIATIONS

D2D: Device to Device Communication

IoT: Internet of Things

WSN: Wireless Sensor Network

OTP: One Time Password

## III. LITERATURE SURVEY

IoT offer advanced connectivity of devices and systems that goes beyond device to device communication. The communication between devices with or without human intervention can be done by the process of sharing, gathering, and creating information. As people have become largely interconnected to the internet however due to short-range network and the devices connected to these network, interconnection between devices is gradually being created. The short-range networks include wireless sensor networks (WSNs), wireless fidelity (Wifi) Bluetooth, radio-frequency identification (RFID) networks, and ZigBee. Thus current Market examples include smart thermostat systems and washer/dryers that use Wi-Fi for remote monitoring.

In 1982, with modified Coke machine at Carnegie Mellon University becoming the first internet-connected appliance. The concept in IEEE Spectrum as "[moving] small packets of data to a large set of nodes, so as to integrate and automate everything from home appliances to entire factories" was described by Reza Raji in 1994. In 1999, Bill Joy visualized Device to Device communication. Therefore in 1999 the concept of IoT becomes popular through the Auto-ID center at MIT and related market-analysis publication. Present system include Manual Intervention required system and Manually ON/OFF or controlling system.

## IV. PROPOSED SYSTEM ARCHITECTURE

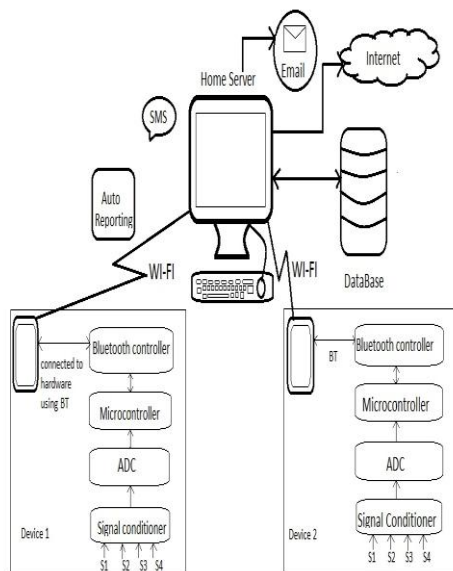


Figure 1. System Architecture

In this system we will be using the hardware devices, the central server which will consist of all the information of the devices. The WIFI connection will be used to connect the central server to the Android application and the Bluetooth will be used for connecting the device with the android application.

The android application will be deciding the threshold values of the devices and the sensors will be used to detect or sense the particular thing to the device. The sensor can be generalized or it can be specified. The android application can be used to display the threshold values on the devices. The android application and the central server is connected by wifi. The central server consists of the information of all the devices and the notification is given to the user and the SMS, Email etc. The hardware and the android and the devices are connected by the Bluetooth.

The sensor detects the values and grabs them to the display screen. The alert notification will be generated to the user and threshold will be shown. For e.g. the coffee beans machine can be set with threshold value and the sensor will detect the level and this information can be sent to the user by SMS and the Email. These values can be stored in the databases and the devices are stored in logs.

## V. PRESENT SYSTEM

The present system needs the manual intervention and it need to be handled manually. For eg. The Home Automation system. The system gives an alarm and the owner controls the system.

## VI. METHODOLOGY

### 1). SENSOR

Sensors are used to detect the particular thing in the device.

### 2). BLUETOOTH

It is wireless technology standard for interchange of information for the limited distances. The distance of the devices in which it can be operated is 10 meters. The IEEE Standards for Bluetooth is 802.15.1.

### 3). WIFI

It is an local area wireless computer networking technology. It uses the 2.4 gigahertz. It is a product based on the Institute of Electrical and Electronics Engineer's and the IEEE standard for Wi-Fi is 802.11.

## VII. CONCLUSION

Thus by using the above methodology we can implement this system. These technologies can be used for the communication of the devices in D2D communication.

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