Machine –to- Machine Talk for Home Automation Applliances

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Abstract—**This paper aims to present a Machine-To-Machine communication for home automation based on the user appliances using Raspberry Pi as a Central Processing Unit. The proposed system will take the input as s alarm time from a user and makes a communication establishment between a home appliances using microcontroller and Bluetooth. The reason why a Raspberry Pi as a Central Processing Unit because of its cost effective can be allotted. The proposed system can be developed in hardware and software platform. The M2M talk for home automation appliances is used to make a day processing of users more efficient, less complex, in time processing and less user work consumption.**

Keywords—*M2M, Raspberry Pi (CPU), Microcontrollers, Bluetooth, Speech Processing.*

I. INTRODUCTION

Automatic smart controlling have gained a lot of importance in present scenario. Nowadays a user will do multiple works as of their commitments. If the basic regular works are maintained by a Machine-To-Machine,user could be able to maintain their time and can do other works. Thus there is a need of intelligent Machine-To-MachineTalk. Machine-To-Machine talk for home automation appliances is an advanced technology useful in an efficient way of user's time consumption reduction given example such as working women's.

In this system CPU will take a input from a user for their next day startup. Based on the user input and environment, CPU will communicate with the corresponding machines in homes.

II M2MTALK FOR HOME AUTOMATION APPLIANCES

There will be a microcontrollers which is fitted into the home appliances and Bluetooth is attached for individual microcontroller in order to communicate with the CPU in a wireless environment to do their work in an efficient way. Raspberry Pi is placed inside a home environment [2]. At first user sets his/her alarm time using a Raspberry Pi for his nextday startup schedule. When RTC time reaches the alarm time which is predefined, it send a signal to a buzzer in order to wake upthe user. Now it checks the RTC time whether it s

between 6am to 6pm, if it happens means Raspberry Pi sends a signal to a machine which is placed on a curtains. Based on the signal input curtains will be opened. After a few minutes Raspberry Pi will get an acknowledgement from a user to ensure that they are woke up or not. Raspberry Pi will ask the user whether they want to use hot water or cold water, based on the user response it sends a signal to water heater to switch it on/off. And also from the environment conditions lights and fans are controlled using LDR and temperature sensor respectively.

III EXISTING SYSTEM

There is a huge advancement in a smart home automation system these days. Many developed countries have made advancement in smart home automation using IOT which enables the users to control their home appliances at anytime from anywhere [3]. Considering a cities in our country, financial statements and busy scheduled cities taking into consideration like Bangalore. This proposed system is useful for the people who could not able to offer a huge amount to deploy a smart home automation using IOT and on the same way it is useful for the people who considers time is the most important.

IV ARCHITECTURE OF THE SYSTEM

A system architecture is a conceptual model that defines the structure, behavior and more views of the systems. System architecture serves as the blueprint for both the system and project developing kit. As shown in the fig 4.1 Raspberry Pi is used as a Central Processing Unit which controls and process the data which is received from the user and machine. It is configured with the Bluetooth for wireless communication between machines [4][5]. Here we are proposing some machines to achieve a machine to machine communication [6]. Each machine is made up of Microcontroller (8pin μc), Bluetooth and Relay.

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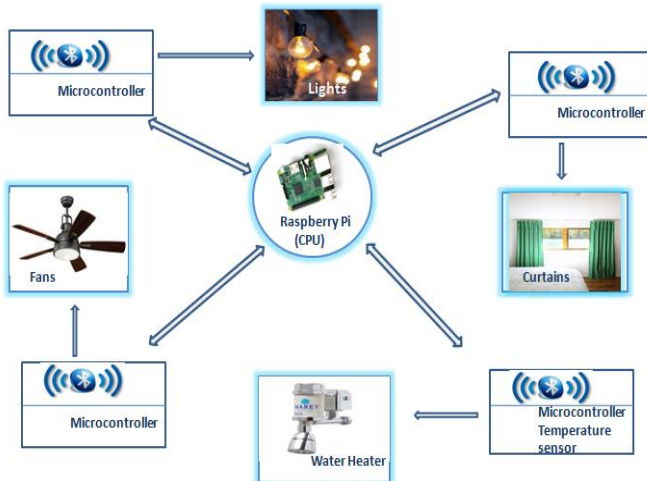**NCETEIT - 2017 Conference Proceedings**

Figure 4.1 Architecture Diagram

First appliance deals with curtain which is mounted by a machine. It opens and close according to the signal received through Bluetooth from the Raspberry Pi. Second appliance is water heater which is mounted by a machine and a temperature sensor. Upon receiving the signal from the Raspberry Pi and water temperature information from the temperature sensor it performs the ON/OFF operation. Third appliances is fans and lights which is operated based on the LDR and temperature sensors reading.

V CONCLUSION

This work defines the concept of the smart home automation. Home Automation system provides efficient ways for machine-to-machine communication using a Bluetooth which is less in cost. It will find an application of users less interaction so that work pressure and time consumption will be reduced.

VI FUTURE WORK

Following consideration can be implemented for the futureenhancement of theM2M Talk for Home Automation:

- Instead of using Raspberry Pi, one can use orange pi which is of very low cost and serves the same features as of raspberry pi.
- Bluetooth can be replaced by a Wi-Fi module ESP8266 so user can give a command over an internet from anywhere to a raspberry pi.
- The system can be developed using an IOT technology for better results.

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