FUTURE INFORMATION AND COMMUNICATION TECHNOLOGY ON THE HEALTH CARE

[1]G.Ramachandran [2]PM Murali [3] T.Sheela [4] A.Malarvizhi [5] S.Kannan

[1]Assistant Professor, Department of Electronics and Communication Engineering, Vinayaka Mission's KirupanandaVariyar Engineering College Vinayaka Mission's Research Foundation(Deemed to be University) Salem-636308,Tamilnadu, India

[2]Assistant Professor, Department of Electronics and Communication Engineering, Vinayaka Mission's KirupanandaVariyar Engineering College Vinayaka Mission's Research Foundation(Deemed to be University) Salem-636308,Tamilnadu, India

[3]Associate Professor, Department of Electronics and Communication Engineering, Vinayaka Mission's KirupanandaVariyar Engineering College Vinayaka Mission's Research Foundation(Deemed to be University) Salem-636308,Tamilnadu, India

[4]Assistant Professor, Department of Electronics and Communication Engineering, Vinayaka Mission's KirupanandaVariyar Engineering College Vinayaka Mission's Research Foundation(Deemed to be University) Salem-636308,Tamilnadu, India

[5]Assistant Professor, Department of Electronics and Communication Engineering, Vinayaka Mission's KirupanandaVariyar Engineering College Vinayaka Mission's Research Foundation(Deemed to be University) Salem-636308,Tamilnadu, India

Abstract –The role of IoT in healthcare production is gaining more and more attractiveness due to its innovations. The development of technology is providing doctors and physicians with improved ways to treat their patients.
Keywords: Internet of Things, IoT, RFID, Wi-Fi, Bluetooth,NFC, ZigBee, Sensors,

I .INTRODUCTION

Communication technologies support the networking of the infrastructure of an IoT-based healthcare subsystem, and it can be classified into short-distance and long-distance technologies. However, for the reason that long-distance technologies mainly involve regular communication means like Internet or mobile phones, this review will only focus on short-distance technologies. In most cases, short-distance communication is based on wireless technologies, including Bluetooth, RFID,Wi-Fi,Infrared Data Association,(IrDA),Ultra-wideband(UWB),ZigBee,etc

II . LITERATURE SURVEY

IoT Device: IoT device includes development boards such as microcontrollers from different vendors. It is used as a processing subsystem. The task is performed by the controller along with data processing and controlling the subsystem of other components in the sensor node. Sensor to IoT device communication is done using short range RF protocols like ZigBee, Z-wave, Bluetooth, BLE, and Wi-Fi and gateway to cloud communicates using protocols like HTTP, MQTT, CoAP, and XMPP.
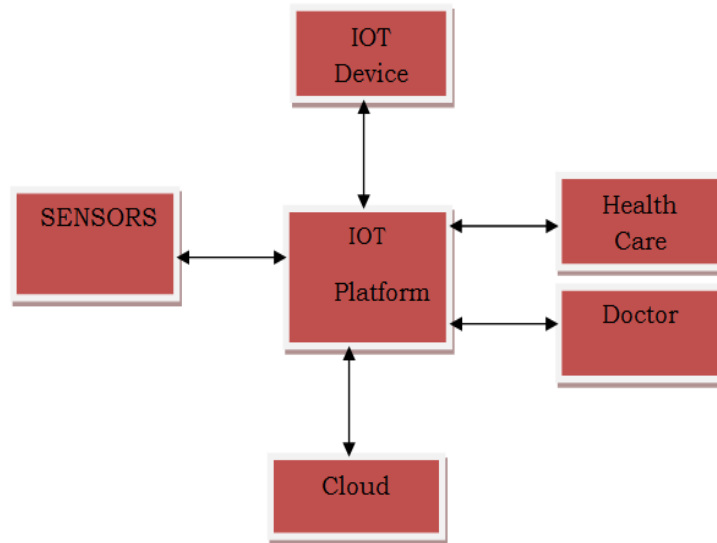

Fig 1.Peripheral Device

III . PROPOSED METHODOLOGY

IoT for Patients - Devices in the form of wearables like fitness bands and other wirelessly connected devices like blood pressure and heart rate monitoring cuffs, glucometer etc. give patients access to personalized attention. These devices can be tuned to remind calorie count, exercise check, appointments, blood pressure variations and much more.

IoT has changed people's lives, especially elderly patients, by enabling constant tracking of health conditions. This has a major impact on people living alone and their families. On any disturbance or changes in the routine activities of a person, alert mechanism sends signals to family members and concerned health providers.
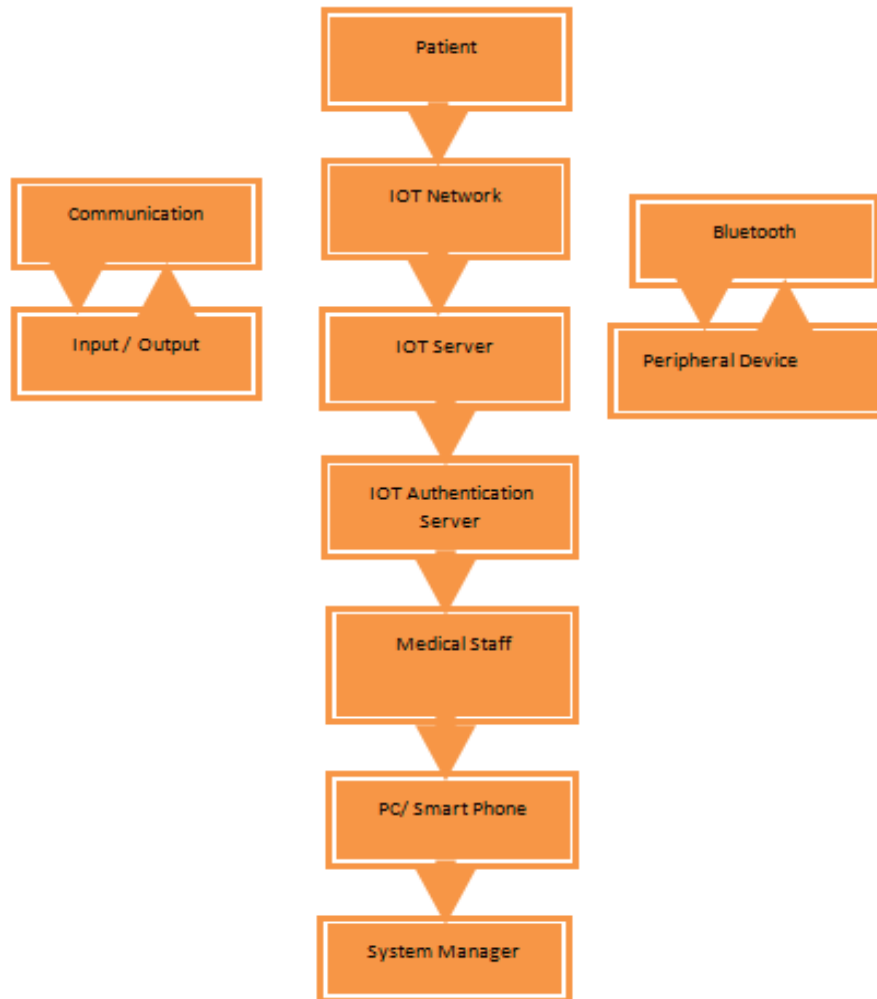
Fig1 IoT for Patients Connected device

The major advantages of IoT in healthcare include:

- Cost Reduction: IoT enables patient monitoring in real time, thus significantly cutting down unnecessary visits to doctors, hospital stays and re-admissions
- Improved Treatment: It enables physicians to make evidence-based informed decisions and brings absolute transparency
- Faster Disease Diagnosis: Continuous patient monitoring and real time data helps in diagnosing diseases at an early stage or even before the disease develops based on symptoms
- Proactive Treatment: Continuous health monitoring opens the doors for providing proactive medical treatment
- Drugs and Equipment Management: Management of drugs and medical equipment is a major challenge in a healthcare industry. Through connected devices, these are managed and utilized efficiently with reduced costs
- Error Reduction: Data generated through IoT devices not only help in effective decision making but also ensure smooth healthcare operations with reduced errors, waste and system costs

IV . Results and discussion

In hospitals, where patient's status needs to be regularly monitored, is usually done by a doctor or other paramedical staff by constantly observing some important parameters, such as body temperature, heartbeat, and blood pressure thus, this task becomes tedious after sometime. Hence it can cause problems. However, there are many researchers have attempted before to solve it in many different ways, but the earlier methods in several cases either SMS will be sent using GSM or RF module will be used to send patient's data from sender device to receiver device. Moreover, in the earlier cases the history of the patient cannot be displayed, only current data is displayed. So the purpose of this project is to maintain record of patient's data and to give emergency alert if required, using different technology which is Internet of Things (IOT); where it allows us to store patient's data on the cloud. Thus the history data of the patient will be available for doctors to access at any time from everywhere. By implementing this project we can monitor patients remotely and we can secure their lives by giving emergency alert in real-time.

The M2M payment system is going to continue to significantly disrupt the payments business, simplifying communication in emerging markets. The combination of IoT, AI and Machine Learning, and smart contracts are creating opportunities for new, different purchasing behaviors. And integrating the user experience with apps like mobile wallets will cause M2M financial performance to be even more common place in the future.

V . Conclusions

The Future work of the project is very essential in order to make the design system more advanced. In the designed system the enhancement would be connecting more sensors to internet which measures various other health parameters and would be beneficial for patient monitoring i.e. connecting all the objects to internet for quick and easy access. Establishing a Wi-Fi mesh type network to increase in the communication range.

References

[1] The Internet of Things: Enabling Technologies, Platforms, and Use Cases", by Pethuru Raj and Anupama C. Raman (CRC Press)

[2] The Internet of Things: Enabling Technologies, Platforms, and Use Cases", by Pethuru Raj and Anupama C. Raman (CRC Press)

[3] Internet of Things: A Hands-on Approach", by Arshdeep Bahga and Vijay Madisetti (Universities Press)

[4] David Hanes, Gonzalo Salgueiro, Patrick Grossetete,Robert Barton, Jerome Henry,"IoT Fundamentals: Networking Technologies, Protocols, and Use Cases for the Internet of Things", 1stEdition, Pearson Education (Cisco Press Indian Reprint). (ISBN:978-9386873743)

[5] Srinivasa K G, "Internet of Things",CENGAGE Leaning India, 2017

[6] Vijay Madisetti and ArshdeepBahga, "Internet of Things (A Hands-on-Approach)", 1stEdition, VPT, 2014. (ISBN:978-8173719547)

[7] Raj Kamal, "Internet of Things: Architecture and Design Principles",1stEdition, McGraw Hill Education, 2017. (ISBN:978-9352605224)

[8] Ahmed Abdulkadir Ibrahim ,Wang Zhuopeng College of Electronic Communication and Physics, Shandong university of Science and Technology, China" IOT Patient Health Monitoring System "Int. Journal of Engineering Research and Application "ISSN : 2248-9622, Vol. 8, Issue 1, (Part -III) January 2018, pp.77-80