

# ANALYSIS NEW LIFE FOR HEALTH CARE IN THE INTERNET OF THINGS

<sup>1</sup>MR S.KANNAN, <sup>2</sup>N. SATHISHKUMAR, <sup>3</sup>M.KUMAR, <sup>4</sup>PM MURALI <sup>5</sup>DR.R.SANKARGANESH  
<sup>6</sup>MRS S.VALARMATHY

<sup>1</sup>Assistant Professor, Department of Electronics and Communication Engineering, Vinayaka Mission's Kirupananda Variyar Engineering College, Approved by AICTE, New Delhi, Vinayaka Mission's Research Foundation (Deemed to be University) Salem-636308, Tamilnadu, India

<sup>2</sup>Assistant Professor In Mathematics, Department of Architecture, Vinayaka Mission's Kirupananda Variyar Engineering College, Approved by AICTE, New Delhi, Vinayaka Mission's Research Foundation (Deemed to be University) Salem-636308, Tamilnadu, India

<sup>3</sup>Assistant Professor, Department of Mathematics, Annapoorana Engineering College, Tamilnadu, India Salem -636308, Approved by AICTE, New Delhi, and Affiliated to Anna University, Chennai

<sup>4</sup>Assistant Professor, Department of Electronics and Communication Engineering, Vinayaka Mission's Kirupananda Variyar Engineering College, Approved by AICTE, New Delhi, Vinayaka Mission's Research Foundation (Deemed to be University) Salem-636308, Tamilnadu, India

<sup>5</sup> Professor, Department of Electrical and Electronics Engineering, Vinayaka Mission's Kirupananda Variyar Engineering College, Approved by AICTE, New Delhi, Vinayaka Mission's Research Foundation (Deemed to be University) Salem-636308, Tamilnadu, India

<sup>6</sup>Associate Professor, Department of Electronics and Communication Engineering, Vinayaka Mission's Kirupananda Variyar Engineering College, Approved by AICTE, New Delhi, Vinayaka Mission's Research Foundation (Deemed to be University) Salem-636308, Tamilnadu, India

Received: 10.07.18, Revised: 10.08.18, Accepted: 10.09.18

## ABSTRACT

The Internet of Things (IoT) is no longer a fanciful vision. It is very much with us, in everything from factory automation to on-demand entertainment. Yet by most accounts, the full potential of interconnected systems and intelligent devices for changing the way we work and live has barely been tapped. As a long-established industry leader in enabling wireless connectivity Solutions offers the industry's broadest spectrum of products and services to accelerate your product development and succeed in the market. global team of engineers, developers, and support professionals have helped countless customers bring innovative wireless products to market spanning Wi-Fi, Bluetooth, BLE, LoRa, Zigbee, 802.15.4, custom point-to-point implementations, and more Embedded for Medical Devices This Embedded technology, which is being widely accepted and proven technology in the field of Medical Device manufacture and production. The highlight some of the crucial features and application areas for Medical Instrumentation and control.

**Keywords:-** Embedded technology, Internet of Things (IoT), Wi-Fi,

## INTRODUCTION

As the Medical healthcare industry increasingly demands more intelligent and reliable systems that works seamlessly together, the Microsoft Windows Embedded family of operating systems offers a dependable architecture, industry standard support, multiple graphical interface options, comprehensive networking support, and core Windows technologies within a single toolset. Given the number of different types of medical devices and systems that are being created today, developers who focus on the healthcare industry all share at least one commonality they seek a customizable, reliable operating system on which to base their design. Developers can easily leverage and transition their existing knowledge of desktop application development straight to devices Medical devices and systems include:

Blood glucose meters

Patient monitors

Ultrasound equipment

Remote and local diagnostic equipment

Hospital station displays

Image enhancement

Multimedia training system

Embedded for Medical devices

### **Batteries for Electric Vehicles**

Hospitals present challenges to reliable Wi-Fi connectivity and many medical device applications require secure and persistent network connections. To ensure reliable functionality, a Wi-Fi radio that is embedded in a medical device must be tested thoroughly.

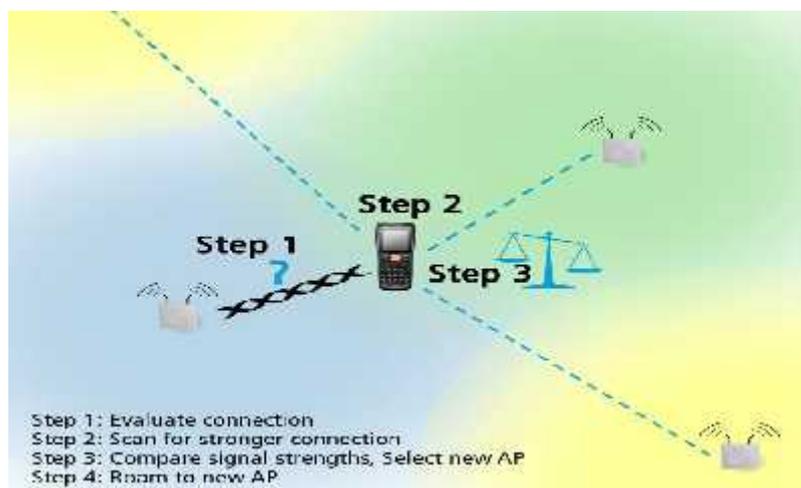
### **Wi-Fi access in a hospital serves different sets of users and applications.**

Patients and guests use Wi-Fi for convenient Internet access from smart phones, tablets, and laptops.

Clinicians and administrators use Wi-Fi to gain

access to hospital networks from personal computing devices such as smart phones or from hospital-managed computing devices such as workstations on wheels and tablet computers. And, increasingly, computing devices are sharing the hospital Wi-Fi airwaves with medical devices. Medical devices place stringent requirements on Wi-Fi connections. Many medical devices require persistent network

connections. Providing such connections over Wi-Fi in a hospital can be a challenge. When a medical device is mobile, the Wi-Fi radio in that device must switch, or roam, from one infrastructure endpoint to another. Fast and effective roaming is essential to maintaining a persistent network connection and ensuring the reliable operation of the applications that rely on such a connection



**Fig 1 WI-FI NETWORK**

## Methodology

### 802.11n and Medical Devices

With throughput much greater than that available with previous wireless local area networking (WLAN) standards, the IEEE 802.11n standard has had a significant impact on the WLAN, or Wi-Fi, industry. Most of today's WLAN infrastructure products support 802.11n, and support on client devices is growing. As technology advances, the need to place larger numbers of electrical and electronic systems into automobiles has dramatically increased. To name a few, these systems include Control Area Networks (CAN), safety systems, communications, mobile media, infotainment systems including wireless headsets, DC motors and controllers. The physical size of these systems is greatly reduced because of the size and weight constraints involved with automotive design. These systems may be small, but it does not necessarily mean their electromagnetic emissions are too. The Connected Hospital: The Healthcare Landscape is Changing With increasing hospital admissions, administrators are increasingly seeking to create models of healthcare deployment that provide value for money, are economic, scalable, secure and, above all, efficient. The vision of the connected hospital is a simple one: a place where wireless technology allows caregivers and patients to roam around the hospital freely while providing accurate and timely monitoring. The vision itself stems from a technological evolution, which has seen an increasing number of wireless medical devices in the hospital environment. In a connected hospital, caregivers can use powerful wireless medical equipment to provide the best quality care to

patients, instead of being distracted by time-consuming administrative .General body health is a priority goal for each and every person and thus the quest for advancement in the healthcare sector. The healthcare landscape is changing drastically and this creates an urgent emphasis on enhancing the quality of patient care and decreasing general cost, mainly within hospitals. With healthcare administrator, you are linked to healthcare systems, hospital networks, and public health systems. Administrators are divided into two types; the generalists and the specialists. The generalists are people who help in the management of a whole facility while specialists are people responsible for the efficient and effective operation of a certain sector like marketing, policy analysis, accounting, human resources, budgeting etc. Some of the places healthcare administrators can find employment include laboratories, doctor's offices, research institutes, medical record keeping facilities, specialized clinics and much more.

### Healthcare Analysis

Nowadays, technology has made the world to evolve at a higher pace and healthcare is one of the industries that has benefited. Today, high tech is being used to improve healthcare analysis as well as diagnosis. Also, digital and remote pharmacy solutions are now offered by savvy plan sponsors as an approach of virtualizing pharmacy and reaching patients where they are. Some of the services they have provided include remote monitoring, home delivery, telehealth, mobile application and much more. Telemedicine software has already been introduced but telehealth is still being developed and soon it will be implemented. There are several laws

and regulations that are being created and others are changed so that telehealth technology can be spread worldwide. According to statistics, about 65% of nurses, physicians, and other healthcare experts are using telehealth or are planning to use it in the future. The reason why high technology is expected to bring changes in the healthcare landscape is because it will increase availability and accessibility of services: Technology will make services be more available and this means that more patients will be treated. This will be beneficial to patients with disabilities or elderly people as they won't need to move from one place to another just because they want to see a doctor. People living in the rural will also easily get answers to any questionable side effects and be treated. Through technology, the number of patients will reduce since most of them will be treated where they are. The total quality of

care will improve: The best thing about high healthcare technology is that it will improve the quality of care because doctors will have more available time. The ease and efficiency of telehealth services will make the level of healthcare to go up. There are several people who have used telemedicine services and most of them have said that the quality of care is higher than or similar to the in-person visit. It will reduce costs: Advancement in technology in the healthcare landscape will help lower the overall cost on the entire industry. Because technology makes services be easily available, more patients will be treated in a well-organized and efficient manner that will eventually reduce the costs. According to research, if US corporations use telemedicine then it could possibly supply more than 5.5 billion a year in healthcare savings.



**Fig 2: PC-Based Resting ECG Software**

Our Hospital routinely performs electrocardiography (ECG or EKG) recordings as part of our veterinary cardiology services. An ECG is a readout of the electrical activity of the animal's heart and gives our cardiologist information on your pet's heart rate, heart rhythm and potential irregularities called arrhythmias. Although the ECG procedure requires that your pet hold very still for a few minutes to obtain the electrical data, it generally does not require sedation. Several clips (called leads) are placed onto your pet's skin at various body points in order to accurately record the information. Our veterinary cardiologist will use this information, together with other testing to determine the nature and severity of your pet's heart disease and create the best possible treatment plan for an arrhythmia.

### Conclusion

In future, it is expected that there will be the use of robotics in surgery as this will highly reduce complications. The accuracy and efficiency of technology in the healthcare landscape will help in simplifying and reducing a lot of problems. Reliable wireless communication in a hospital allows for real-time patient monitoring that can mean the difference

between life and death. In addition to the medical uses, dependable Wi-Fi in hospitals can also affect the customer rating received after a patient is discharged..In order to set up a reliable Wi-Fi network and reap the benefits that reliability brings, preparations must be performed by the IT manager.

### References

1. Guangming Song, Fei Ding, Weijuan Zhang and Aiguo Song, "A Wireless Power Outlet System for Smart Homes," IEEE Transactions on Consumer Electronics, Vol. 54, No.4, November,2008.
2. Shen Jin, Song Jingling, Han Qiuyan, Wang Shengde, Yang Yan, "A Remote Measurement and Control System for Greenhouse based on GSM-SMS" IEEE 8th International Conference on Electronic Measurement and Instrument, 2007.
3. G. K. Banerjee, Rahul Singhal, Bhubaneswar, Orissa India "Microcontroller Based Polyhouse Automation Controller", International Symposium on Electronic System Design, pp.158- 162, Dec 20 10.
4. Wen bin Huang, Guanglong Wang, Jianglei Lu, Fengqi Gao, Lianhui Chen "Research of wireless sensor networks for an intelligent measurement system based on ARM", International conference on

Mechatronics and Automation, pp. 1074 - 1079,2011,

5. G.Ramachandran "Accident Finding Identification System Using Google Map" Journal on Electronics Engineering (JELE), - ISSN Print: 2229-7286 ISSN Online: 2249-0760 3 Volume No. 3 Issue No 1 Mar-May 2013