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Review of Home Based Security Mechanism Using Paired Key for Sensor to Cloud Communication

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Abstract : *Iot-related health care system are based on the vital description of the iot as a network of devices that connect directly with each other to capture and share important data through a secure service layer as ssl that connects to a central command and control server in the cloud. The major objective of the proposed model is to study the level of the security and based security model for the secure information propagation among the house panel and the cloud based monitoring system. In this project, an urgent need for research in user data privacy in the cloud is studied and the risks of not achieving it are outlined. Proposed scheme is preventive rather than detective approach. Preventive approach in the proposed model is based on key exchange model for the user data privacy, integrity and data confidentiality.*

Keywords: *IOT, GPS, AES, SNR.*

I. INTRODUCTION

There is no shortage of prediction that how the Internet of Things i.e. IoT is going to developed in healthcare by dramatically at lowering cost and improving quality. Internet of Things (IoT)-driven systems are making it possible to totally reduce costs and improving health by increasing the availability and quality of care. These include sensors that to collect patient data, microcontrollers are process, analyze and wirelessly communicate the data, microprocessors that allow rich graphical user interfaces, healthcare specific gateway through which sensor data is further analyses and sent to the cloud. As the First Thing First to Understanding the IoT that the IoT-related health care system are based on the vital description of the IoT as a network of devices that connect directly with each other to capture and share important data through a secure service layer as SSL that connects to a central command and control server in the cloud. The emergence of the IoT, in which devices connect directly to data and to each other, is important for two reasons. First is as in advance sensor and connectivity technology are allowing devices to collect the data, record and analyze. In the healthcare, this means able to collect patient data over time that can be used to help enable preventive care, allow prompt diagnosis of sensitive complications and promote understanding of how a therapy is helping improve a patient's parameters [1, 3]. Second is the ability of devices to collect data on their own and removes the limitations of human-entered data by automatically obtaining the data doctor's need; at the time and in the way they need it. The automation reduces the risk of error and as fewer errors can mean increased efficiency, lower costs and improvements in quality in just about any industry. But it is of particular interest in healthcare, where human error can literally be the difference between life and death [3]. IoT concepts have already been adopted in many areas such as energy as examples of smart lighting, smart grid and industrial automation [4]. In the clinical care as Hospitalized Patients whose physiological status requires close attention can be constantly monitored using IoT-driven, non-invasive monitoring. Thos type of solution employs sensors to collect complete physiological information and uses gateways and the cloud to analyze and store the information and then send the analyzes data wirelessly to caregivers for further analysis and review [6]. In the remote monitoring, there are many people all over the world whose health may suffer because they do not have ready access to useful health monitoring. But small and powerful wireless solutions connected through the IoT are now making it possible for monitoring to come patient health data from a variety of sensors, apply complex algorithms to analyze the data or information and then share it through wireless connectivity with medical professionals who can make appropriate health recommendations [5, 6]. In the early intervention and preventions of health that the healthy, energetic people can also benefit from IoT to driven monitoring of their daily activities. A senior living alone as may want to have a monitoring device that can detect a fail or other interruption in everyday activity and report it to emergency responders or as in family members. For that matter, an active athlete such as bikers could benefit from such a solution at any age, particularly if it is available as a piece of wearable technology [2]. Now what we are seeing the IoT building blocks of information and machine-to-

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machine communication continue to be established, with the addition of the service layer completing the infrastructure. [4] Freescale is excited to be a part of this revolution by providing end-to-end processing and connectivity solution for IoT-driven healthcare solutions, working towards establishing standards for these solutions and accelerating innovation for organizations ready to realize the benefits of the IoT in healthcare.

A. Smart Cities and IoT Integration

Smart town is that the product of accelerated development of the new generation information technology and knowledge-based economy, supported the network combination of the net, telecommunications network, broadcast network, wireless broadband network and different sensors networks wherever Internet of Things technology (IoT) as its core. The most options of a wise town embody a high degree of knowledge technology integration and a comprehensive application of knowledge resources. The essential parts of urban development for sensible town ought to embody smart technology, good trade, good services, good management and good life. The Internet of Things is concerning putting in sensors (GPS, optical device scanners, etc.) for everything, and connecting them to the net through specific protocols for info exchange and communications, so as to realize intelligent recognition, location, tracking, observation and management. With the technical support from IoT, good town got to have 3 options of being instrumented, interconnected and intelligent. Solely then a wise town are often shaped by group action of these intelligent options at its advanced stage of IOT development. The explosive growth of good town and net of Things applications creates several scientific and engineering challenges that decision for ingenious analysis efforts from each world and trade, particularly for the event of economical, scalable, and reliable good town supported IoT. The automation reduces the risk of error and as fewer errors can mean increased efficiency, lower costs and improvements in quality in just about any industry. But it is of particular interest in healthcare, where human error can literally be the difference between life and death. [3]

II. RELATED WORK

Rosenthal et al. [11] had taken efforts to provide advantage of cloud computing for biomedical informatics (BMI) community for sharing medical data and applications. Rolim et al. [10] proposed a system for automating the task of collecting patient's crucial health data through sensor network attached to legally authorized medical devices and storing this data to medical centre's "cloud" for handling, executing, and sharing. Jacob et al. [9] worked upon development of remote patient monitoring (RPM) system supporting universal serial bus plug-in. Pandey et al. [34] developed a prototype system for analysing ECG signal by collecting electrocardiogram (ECG) data in real-time from patients. Ahnn et al. [1] proposed a distributed, energy efficient electronic health platform called mHealthMon in which distributed P2P network was created among mobile patients to access patient data collected by sensor from cloud computing-based storage. Wan et al. [4] conducted a study on high packet drop and poor network performance because of environmental obstacles. Almashaqbeh et al. [3] proposed real-time remote health tracking system for non-hospitalized patients. This system divided the cloud architecture as local one that contains patients and hospital medical staff, and a global cloud that contains the outer world. Wang et al. [2] discussed that in traditional IT solutions, the IT services were hosted under complete physical and personnel controls whereas, cloud computing shifted the application and databases phase to large data centre servers on the Internet. Doukas et al. [1] discussed about the application of Cloud Computing in healthcare services to update and retrieve patient health information. Fan et al. [6] proposed a "Data Capture and Auto Identification Reference" (DACAR) platform for developing eHealth applications equipped with authentication, integrity, confidentiality, authorisation, secure data transmission.

III. CONCLUSION

The recent advancements in remote IoT systems endorsed significant concerns from IT industry (Amazon, Microsoft, Google etc.) that provide ubiquitary and conveniently deployable IoT systems. IoT monitoring sensor networks' based on cloud (IoT-MSN) is collection of number of IoT nodes attached to centralized communication node and an entrance for each node connecting through wireless connections. In this project, an urgent need for research in user data privacy in the cloud is established and the risks of not achieving it are outlined.

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