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UNFOLDING THE CLOUDIOTPARADIGM

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ABSTRACT

CloudIoT is the integration of the two technologies- Cloud computing and Internet of Things.The CloudIoT devices are proliferating in the last few years because of the rocketing demand of smart homesand buildings. The IoT cum Cloud computing devices are grabbing lofty currency in multifarious countries. Myriad of enterprises deal in the way to create smart homes with a future goal to create smart cities by providing services to control and automate lighting, music, video, security and energy in a single room or throughout the entire home while staying in the home or even from outside using an authorized smart phone or Tablet.

Keywords: Cloudiot, Cloud Computing, Iot (Internet Of Things), Smart Home, Wisdom Home, Cloud Camera

I. INTRODUCTION

Let us know the epoch of Smart home! As shown in Fig. 1,Smart home or Wisdom homeallows one to control the entire home or business area while comfortably lying on a sofa and launching or controlling lights, curtains, air-conditioned, audio-visual systems and so forth.Versatile devices designed with IoT, Cloud computing, wireless technology, fiber-optics and so forth, making the busy life of professionals, business persons, politicians, artists and etcetera more comfortable than ever[1,2,3]. The various products like- Wireless smoke detectors and IoT wireless flammable gas detectors are contributing towards home security by triggering alarms in jeopardous situations [10,18,19].Old members and children of the family are being served and taken care of by the technology aficionados by the use much coveted products like IoT wireless air quality detector,Wireless smart lock (Finger print and password), Wireless smart socket, Wireless Dimmer Switch, Wireless temperature humidity sensor, Wireless parking sensor, Wireless IR motion detector which is making the obscure technology to emerge. The first "intelligent building" in City-Place-Building in Hartford, Connecticut, USA has presented before the general public, a concept of effective home and business management. The set-up of retail market of IoT products has immensely influenced the lifestyle of public belonging to upper class. The prominent industries promoting CloudIoT devices are Comcast, Philips, LG, Samsung, Logitech, Osram, Bosch, GE and many more.

1.1 Features of 'CloudIoT' Devices

CloudIoT devices are Reliable- CloudIoT devices harnesses the power of the mesh to connect every product to every other product. So if one of your products fails, the others will continue to communicate without interruption.

CloudIoT devices areInteroperable- CloudIoT has standardized everything from basic communication to how a product operates. CloudIoT Products with the standardized certification work together seamlessly, even if they're from different companies.

CloudIoT devices are Low Power- Most standardized CloudIoT technology allows devices to last for years on a single battery. With the Green Power Feature, one doesn't even need any batteries!

1.2 'CloudIoT' Devices and Home Automation

Home security system- Security is an issue with everyone. The IoT wireless Home security system ensure the security of the entire home which include various factors like- if one forgot to lock the door of room, the monitoring sensors and IP camera would send you alarming signals to the authorized phone. In such a condition, just log in to the home system and lock the door sitting at a place away from home.What's more, the system can tell the whereabouts of children when the parents are out of home.

Intelligent lighting control- The quintessential thing one just requireto create the mood to welcome home to entertain the guests and enter night mode is just by pressing a button. It's very simple. And each touch panel can have multiple lighting scene, such as 'romantic dinner', 'cooking', 'cinema mode', 'sports time' and so forth. The intelligent lighting system would mitigate the power consumption cost by saving energy and maintaining home ambience.

Smart curtain- Wireless Curtain Controller is based on SmartRoom protocol. It is mainly used to turn on/off the curtain. Except for manual operation, users can also control the curtain remotely through mobile terminals anytime and anywhere.

Smart socket- Wireless Wall Socket is a product based on ZigBee/SmartRoom protocol. It enables users to switch on/off power in real time or at fixed-time via mobile terminals. By adopting national standard, the device can replace original house-hold socket directly and bring safety and smartness to users' life [15,16].

Smart scene switch- Wireless Scene Switch is a new smart device based on ZigBee/SmartRoom protocol. This device uses battery and it's removable. It can be placed at the sofa or bedside. You can change the scene you want just with a click rather than approach to the switches or take out your phones to control. It realizes "One Key to Achieve Smart Life".

Cloud Camera- IoTWireless High Definition Camera is not the device with conventional capabilities and functions but it can be the part of the smart home or wisdom home which can produce high definition pictures of your smart home [11,12].

Smart door and parking locks- Smart doors and parking locks are increasingly gathering momentum in the market to create secure intelligent buildings, wisdom hotels and smart homes. One just require a confidential password to unlock one's room [13, 14].

Emergency button and doorbell-A message would be sent to the authorized smart phones when the door bell is triggered, so that no visitors can be missed.

Smart Energy- It is the leading standard for interoperable products that monitor, control, inform, and automate the delivery and use of energy and water. It is used to provide innovative solutions for smart meters and the home area network (HAN) that allow consumers to cognize and control energy use by connecting them to the

smart grid and assist create greener homes by giving consumers the information and automation needed to easily mitigate consumption and save money.

III. ISSUES AND CHALLENGES

Integration of IoT and cloud computing has faced various challenges which are in terms of relationship extension, implementation and deployment [9,12,14].Moreover, testing of products is a troublesome task involving focused grueling work [7,8]. Due to complex design of CloudIoT devices, each wiring and wireless component becomes obligatory to be checked against several parameters, initially by the production unit and further by architects, developers and elite researchers to generate more applicative technological appliances using integration of the duo. Researchers' requisite pecuniary resources from government and concerned organizations for exploring more about the technology.The effective utilization of available cloud resourcesby the IoT devices is one of the major aspect that can contribute to enhance the capabilities [4,5,6].In addition to it, data integrity and privacyis another challenge being faced by the CloudIoT due to vulnerability of internet to malicious users and hacker [1,17].Therefore, gross 360 degree data security is indispensable to be implementedin order to fortify the concept of CloudIoT. Heterogeneous computing environment is another obstacle in the success of CloudIoT. The interconnection of complex IoT devices is subtle even now and it is quintessential to accentuate the heterogeneity aspect of computing environment.

IV. FUTURE GOALS

Techno-savvy persons can foresee the threat to the security of the CloutIoT system. Due to the increase in the figure of devices entering the cloud, there taking place the trouble of naming, addressing and identifying internet-of-things. Accurate location detection and mobility of portable devices is requisite to be identified within the cloud or even after the removal of any object from the cloud. A sound CloudIoT enabled networking system is envisaged in very recent times. As the CloudIoT technology is facing its incipient stage many other aspects like multi-homing, multi-path and multi-cast computing environment are ideated.Last but not least, the CloudIoT based API's would enhance business opportunities, social and legal aspects as well.

V. FIGURES AND TABLES

Fig 1

VI. CONCLUSION

The CloudIoT is a novice technology which came into existence after the birth of Cloud computing and IoT devices. The collaboration of the duo technologies engender CloudIoT which has brought incredible results in the field of engineering by satiating the demands of multifarious categories of people. This paradigm is yet to be explored more as the researchers and industrialists are working endlessly to yield tremendous applications out of it. The usage of CloudIoT in home automation is enumerated clearly in the paragraphs cited previously.

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