
A VIEW OF SMART WORLD BY USING GREEN IOT

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Abstract: Smart world is planned to a chronicle achievement in which objects can efficiently and intellectually serves to human kind. Internet of things is the one which links up everything in the smart world. Though each systems are different by the way it works, its embedded computing but it can interconnect with each other in the internet infrastructure. The current situation of our beloved earth encloses a smart reminder that the Iot can be made green- and green technology can be maximized with smart use of IoT. IoT implements the collection of data to its finer levels of details, and core analysis of that data, business as well as each individuals can corroborate bigger results from smaller changes to their immediate environment. This authorizes humans and objects to be interconnected Anytime, Every time, Anyplace, Everywhere with anything and anyone, preferably using any path/network and any service. Green IoT forecast to familiarize changes in our day to day life and would help accomplishing the vision of “Green ambient intelligence”.

Keywords: Internet of Things, Smart World, Green IoT, ICT technology.

1 INTRODUCTION

When people talk about “**the next big thing**”, they’re never thinking big enough. It’s not a lack of imagination; it’s a lack of observation. Generally speaking, IoT refers to the network paired of everyday objects, which are prepared with global intelligence. It is opening tremendous opportunities for a large set of novel application that promise the quality of our lives. In recent years, IoT has gained much attention from researchers and practitioners from around the world. Living in such a smart world people will be collaboratively and immediately served by the smart devices (e.g., mobile phones, laptops), Smart environments (e.g., apartments, malls), Smart transportation (e.g., cars, trains), etc. For e.g., GPS helps a person’s locations can continuously transmitted to a server that tells us the best routes for the travellers destination, keeping the person stuck in traffic. All devices in the smart world are supposed to be equipped with additional sensory and communication add-ons so that they can sense the word and communicate with each other, they will require more energy. The energy efficient produces(hardware or software) adopted by IoT either to facilitate reducing the greenhouse effect of existing applications and services or to reduce the impact of greenhouse effect of IoT itself. In human history, smart world is receiving various attention from government, academic, industry, etc [1]. It is therefore expected that the IoT will become a reality over the next 20 years.

II. OVERVIEW OF IoT AND GREEN IoT

A. IoT

The Internet of Things is the network of physical objects, devices, vehicles, buildings and other items which are embedded with electronics, software, sensors and network connectivity, which enables these objects to gather and replace data. It allows objects to identify and organize remotely across existing network infrastructure, creating chances for mode-direct incorporation between the physical world and computer-based systems, and resulting in improved efficiency, accuracy, and economic benefits; when IOT is accelerated with sensors and actuators, the technology becomes an instance of the more general class of cyber-physical systems, which also includes technologies such as smart grids, smart homes, intelligent transportation and smart cities.

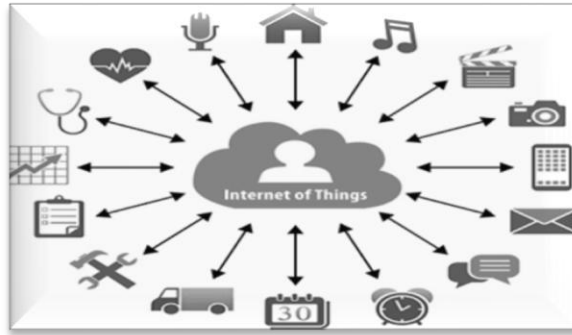


Fig:1 Elements of Iot

B. GREEN IoT

Green IoT is predictable that any object will have a unique way of identification in the upcoming years. That is commonly known in the networking field of computer science as “**Unique address**”, creating an addressable continuum of computers, sensors, actuators, mobile phone. In future we will be surrounded by a huge amount of sensors, devices and “**things**”, which will be able to be in contact via IP, act “**intelligently**”, and provide green support for users in managing and maintenance of everyone’s tasks. These new smart objects will be able to perform certain functions autonomously such as calling for new forms of green communication between people and things and between things themselves, where power consumption is optimized and bandwidth utilization is maximized. These developments would not only be relevant to researchers, but also to corporations and individuals alike.

III. APPLICATION OF IoT AND GREEN IoT

With honor to IoT and green IoT, there are a lot of applications. We list some application scenarios as follows.

- **SMART HOMES:** Personal life-style of every people is going on improvers, at homes by making it more time-saving and simpler to monitor and operate home appliances and systems (e.g., microwave, oven, air-conditioned etc.) remotely



Fig:2 Smart home

- **INDUSTRIAL AUTOMATION:** This IoT and Green IoT technology plays a vital role in the industrial automation. Human participation, robotic devices are computerized to finish completion tasks sooner. The machines operations, functionalities and productivity rates are spontaneously coordinated and monitored.



Fig:3 Smart industry

- **SMART HEALTHCARE:** Healthcare applications are improved in many countries and paying more attention for every citizens, by embedding sensors and actuators in patients and their medicine for monitoring and tracking the patient's details.

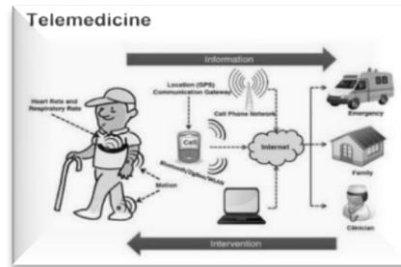


Fig:4 Smart healthcare

- **SMART GRID:** Smart grid mainly help in Power suppliers which are assisted to control and manage resources so that power be offered proportionally to the population growth.

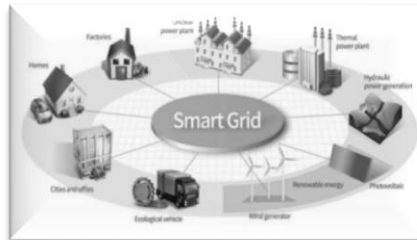


Fig:5 Smart grid

- **SMART CITY:** Smart city gives the Quality of life in the city improvement by making it more convenient and easier for the residents to obtain details of interest.



Fig:6 Smart city

- **SMART AGRICULTURE:** Smart agriculture will enable the farmers to contend with the enormous challenges they face. The industry must overcome increasing water shortages, limited availability of lands, difficult to manage costs, while meeting the increasing consumption needs of a global population that is expected to grow by 70% in 2050.



Fig:7 Smart agriculture

IV. ICT ENABLING GREEN IoT

ICT scheme	Techniques
Green M2M	a) Adjust the transmission power b) Efficiency communication protocol design c) Mechanism of joint energy-saving d) Advantages of employing energy harvesting
Green RFID	a) Reduce the non degradable material used in manufacturing; b) Adjusting transmission power c) Protocol for optimizing tag estimation
Green CC	a) Decrease energy consumption by adoption of hardware and software b) Green CC scheme based on cloud supporting technologies. c) Virtual machine techniques for power saving
Green DC	a) Green source of energy b) Novel energy-efficiency data center architecture design c) Accurate and effective data center power models construction
Green WSN	a) Data reduction mechanisms b) Radio optimization techniques
General green ICT	a) Data path length minimization b) Needed data are to be sent. c) Green power sources renewable

Information and Communications Technology (ICT) is an extended term for information technology (IT) which stresses the role of unified communications and the integration of telecommunications (telephone lines and wireless signals), computers as well as necessary enterprise software, middleware, storage, and audio-visual systems, which enable users to access, store, transmit, and manipulate information.

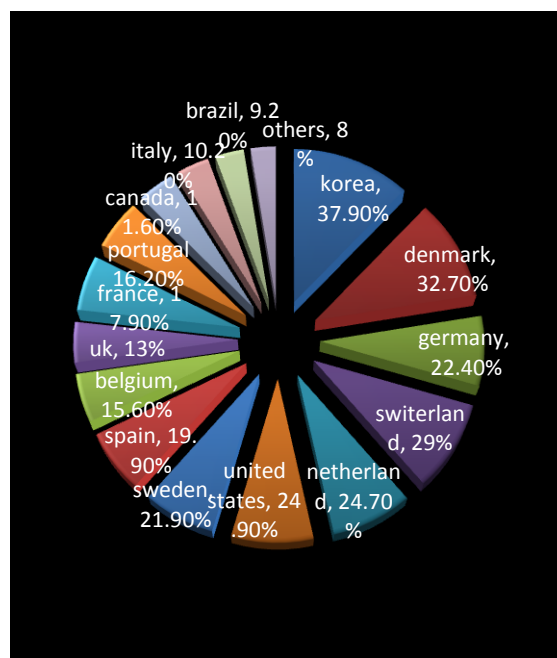
The term ICT that relates to any technology, application such as hardware, software, satellite systems, radio, television, cell phones etc., about its details and communication information of users' access, transmit and manipulate various information's.

ICT mainly describes about five hot green technologies (i.e., Green dc, green RFID, green M2M, green CC, green WSN).

V. SURVEY OF IoT DEVICES AROUND THE WORLD

The following is a list of countries uses IoT devices around the world:

Korea is the first ranking country around the world for IoT devices online with 37.9. They mainly involves in remote health monitoring of country peoples, helps in the integration of sensing and actuation systems, in the manufacturing of the material and so on. Other countries IoT devices are given in Fig. 8.



VI. CONCLUSION AND FUTURE RESEARCH DIRECTIONS

As an result of latest researches for the development of smart world. Various technologies like ICT helps us to overcome the issues with respect to green IoT. Green IoT mainly helps for the development of the sustainable and as well as smart world, with its smart sensors. The sensors with AI works intelligently and serves human kind. The troublesome with the green Iot can be overcome by concentrating more on the following: **(1)Design of green Iot , (2)Characteristics of different Iot applications and their service requirements, (3) Realistic energy consumption models of different parts of Iot system, (4) with pervasive development of sensors, (5) within the context of SNaAS. So the use their virtually private Iot.**

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