Journal of The Gujarat Research Society
ISSN: 0374-8588
Volume 21 Issue 10, October 2019

IOT BASED ADVANCE ELECTRIC VEHICLES CHARGING SYSTEM

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Abstract

Electric vehicle (EV) is an emerging type of mobile intelligent power consumption device and energy storage terminal in Smart Grid. To make full use of technology to solve automation and intelligence support issues for wide-area charging-swap services for electric vehicles. In this paper, we examine functional specifications for electric vehicle charging-swap network operation service scenarios and describe the Internet of Things (IoT) architecture for electric vehicles for centralized wide-area operations and monitoring management. Then, in mobile scenes, we create a perception integration model for battery packs to collect real-time information. There are three different modes of Wireless charging. Static charging, quasi-dynamic charging & dynamic charging. Compared to inductive power transfer, WPT is a more convenient, effective way to charge as well as electric shock protected. The WPT is a system without any wires & transfers energy through the air gap. WPT is safest and considered as a convenient method for charging electric vehicles. This paper is also covering various aspects of wireless charging of electric vehicles, fundamental operation of wireless charging systems including inductive wireless charging technique.

Keywords: *Air pollution, Battery, Charging, Environment, Electric Vehicles*

I. INTRODUCTION

Due to the increase in carbon dioxide (CO2) produced by the transportation & various industries, the Kyoto treaty was signed. The main purpose of the kyoto treaty was to decrease carbon dioxide levels from the environment & has upgraded the findings for a solution of new cleaner energy. As a finding, Electrical Vehicles appeared as a solution to decrease CO2 emissions. Electric Vehicles are increasing day by day all over the world. When the number of Electric vehicles is increasing, there is a need to develop Electric Vehicles Charging systems in grid as well as in parking systems. Present days batteries have become popular for storing electrical energy. The changing transportation of cities has improved over the past few decades which increased the development of various industries & societies. Since batteries are a widely

used device for energy storage, Status of Charge calculation plays an important role in the future. Nowadays, for industrial use vehicles are essential as well for transportation in the day to day life. Various efforts are being done to overcome the fuel engines by electric motors[1]. Batteries have become the popular form of electrical energy storage in EVs. Over the last few decades, the evolution of urban transport has changed, which in turn has increased the growth of communities and industry. Since the battery is a widely used energy storage unit, the measurement of the charge status will play a crucial role in the future[2]. Nowadays, cars are important in everyday life and for industrial use as well. Sufficient effort is being made to remove electric motors from the combustion engines. Because of the rise in carbon dioxide (CO2) caused by industry and transport. The Kyoto treaty was signed due to the rise in carbon dioxide (CO2) caused by industry and transport. The purpose of this treaty was to reduce CO2 amount and the results of new cleaner energy technologies have been improved. As a result, electric vehicles (EVs) have emerged as a way to minimize CO2 emissions. Day by day, electric vehicles are rising across the globe. As the number of electric vehicles grows, there is a need to incorporate a charging mechanism for electric vehicles in parking systems or grids[3].

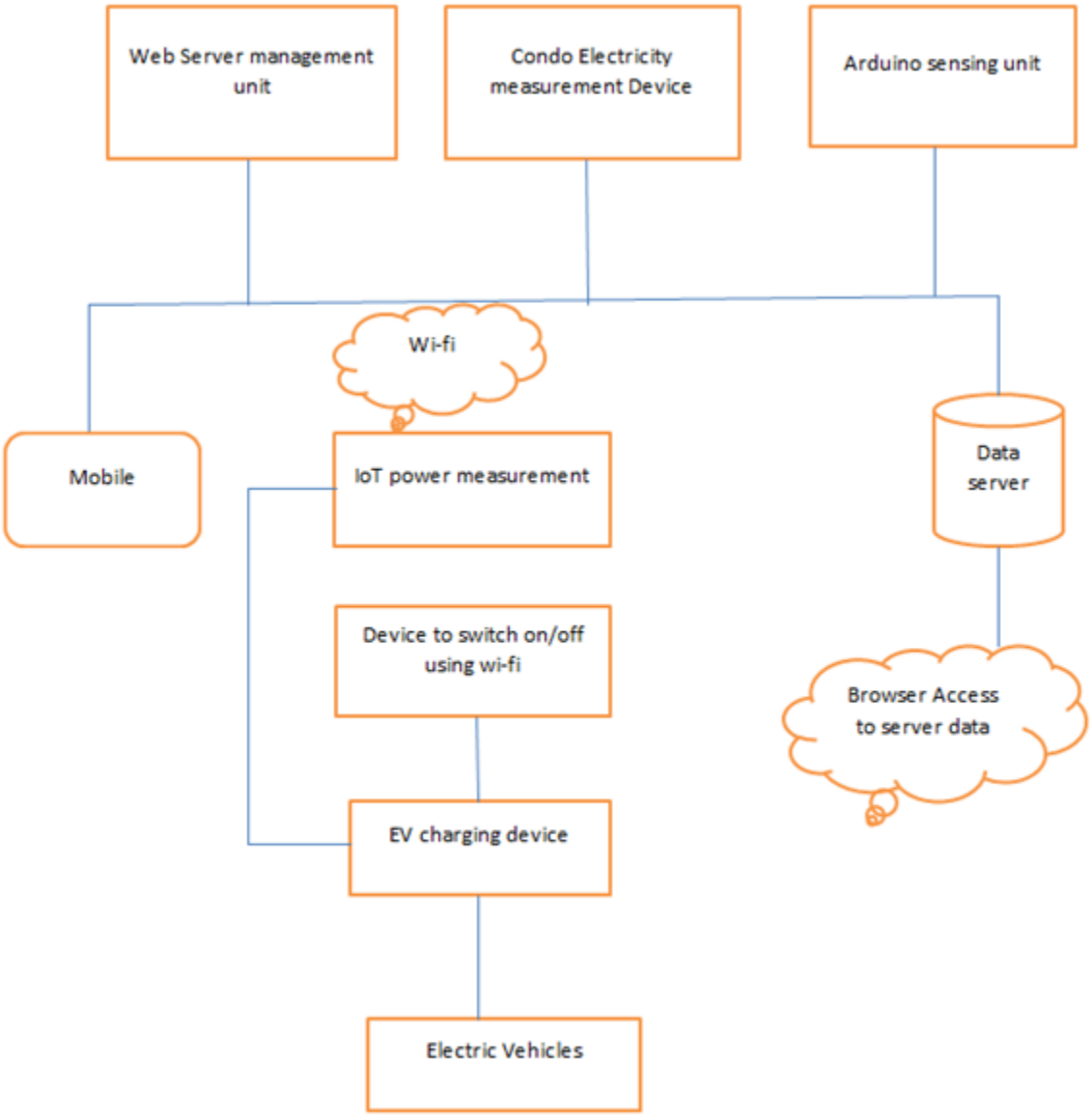

Fig. 1 Electric vehicles charging platform

Fig. 1 shows the electric vehicles charging platform, the development trend of the automobile industry worldwide is energy-saving, green & intelligent when it is undertaking great energy challenges & environmental crises. A battery of electric vehicles will get rid of emissions inside the smart cities as well as reduce dependency on oil. Which improved the performance of electric vehicles & made it suitable for domestic as well as for commercial use during the last decades? Electric vehicles will automatically be the main transport system in the future. Nowadays, electric vehicles are acutely regarded as an emerging type of mobile intelligent power consumption device & energy storage terminal in Smart Grid[4]. Therefore, the construction of a unified, wide-area and large-scale charging-swap network is the basic premise to ensure wide electric vehicle propulsion. Electric vehicle charging-swap network

management businesses mainly consist of battery distribution, charging, swap, metering, discharging & billing of financial settlement, scheduling and many more[5].

Generally, electric vehicles charge-swap services, which need highly automated, intelligent and interactive characters and high-level reliable information communication technology support for perception of information, aggregation, visualization & interaction. Yet, the domain of electric vehicles is complex and not only affects the driver, but also opens new business opportunities & perspectives. The Internet of Things technology can provide pervasive perception abilities & a real-time, interactive view of the physical world by different sensors & various radio devices. Hence physical antiquity becomes interconnected and accessible through existing networks and IT systems.

The Internet of Things will be readily accessible to a wide range of applications, for smart home, smart community, but its application level is considerably lagging behind. In this paper we focus on the objectives of providing efficient and interactive electric vehicles smart charging-swap service to carry out applications study in critical intelligence charging-swap network operations management with the Internet of Things technology[6]. The advantages of IoT spread across every area of lifestyle and economy. The major advantages of IoT are as discussed below.

Customer Engagement: To reduce the flaws and blind spots that affect the system's accuracy, IoT fully transforms to achieve more and more effective and better interaction with audiences[7].

Optimization: The same technology that enhances and sharpens the participation of consumers also improves the use of devices and allows automation technology to grow more robustly. The IoT has a complicated practical and data space, where multiple users are able to participate at the same time. Minimal Waste - existing data analytics provide us with external insight, but IoT offers real knowledge that contributes to secure and perfect resource management. In this way, the waste of money is minimized. Present accumulation of information and data is subject to passive use due to its disadvantages and its design and shape.

II. CONCLUSION & DISCUSSION

The condition of the environment is going worse every year because of the development of civilization and increasing pollutant emissions from vehicles and industries. Air pollution is one of the major problems which lead to global warming, leading to global climate change which has caused an increase of the surface temperature of earth and also leads to many health problems. To solve the air pollution, electric vehicles (EV) is an advanced mobile intelligent energy storage terminal & power consumption device in Smart Grid. To solve automation & intelligence support problems for wide area electric vehicles charging-swap services. This paper analyzes practical demands of electric vehicle charging-swap networks operation service

scenarios & defines the Internet of Things (IoT) design for electric vehicles for wide area consolidate working & monitoring management in this paper. Then, develop a perception integration model for battery packs real-time information collection in mobile scenes. There are three different modes of Wireless charging. Static charging, quasi- dynamic charging & dynamic charging. Compared to inductive power transfer, WPT is a more convenient, effective way to charge as well as electric shock protected. The WPT is a system without any wires & transfers energy through the air gap. WPT is safest and considered as a convenient method for charging electric vehicles. This paper is also covering various aspects of wireless charging of electric vehicles, fundamental operation of wireless charging systems including inductive wireless charging technique.

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