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Smart City and IoT

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ABSTRACT

The new Internet of Things (IoT) applications are enabling Smart City initiatives worldwide. It provides the ability to remotely monitor, manage and control devices, and to create new insights and actionable information from massive streams of real-time data. The main features of a smart city include a high degree of information technology integration and a comprehensive application of information resources. The essential components of urban development for a smart city should include smart technology, smart industry, smart services, smart management and smart life. The Internet of Things is about installing sensors (RFID, IR, GPS, laser scanners, etc.) for everything, and connecting them to the internet through specific protocols for information exchange and communications, in order to achieve intelligent recognition, location, tracking, monitoring and management. With the technical support from IoT, smart city need to have three features of being instrumented, interconnected and intelligent. Only then a Smart City can be formed by integrating all these intelligent features at its advanced stage of IOT development. The explosive growth of Smart City and Internet of Things applications creates many scientific and engineering challenges that call for ingenious research efforts from both academia and industry, especially for the development of efficient, scalable, and reliable Smart City based on IoT. New protocols, architectures, and services are in dire needs to respond for these challenges. The goal of the special issue is to bring together scholars, professors, researchers, engineers and administrators resorting to the state-of-the-art technologies and ideas to significantly improve the field of Smart City based on IoT.

1. Introduction

We are very happy to publish this special issue of a Future Generation Computer Systems published by Elsevier. This issue contains 29 articles come from various countries, among which we mention Malaysia, Taiwan, Spain, France, Kingdom of Saudi Arabia, India, USA, United Kingdom, Korea and Austria. Achieving such a high quality of papers would have been impossible without the huge work that was undertaken by the Editorial Board members and External Reviewers. We take this opportunity to thank them for their great support and cooperation. Smart City and Internet of Things (IoT) special issue is focused on the various aspects of advances in Smart City and IoT. The IoT general architecture provide the media to be everywhere incorporating transparently and seamlessly a large number of different and heterogeneous end systems and sensors to provide services that employ very complex tasks. Thus it is has become one of the most widely applicable technology of the digital age, driving major changes across industries from smart grids to connected health. However, the market analysis[1] indicates clearly that Smart Cities and Smart Home stand out as the most prominent IoT applications. Obviously this driven by the decline of sensors cost and the cities management will to transition towards the real-time data-driven management across urban systems, including efficiently managing water, energy, waste, and transportation among other city-wide and home based services. There are many examples that we can spot on such applications that was the result of careful research (e.g. Padova, Italy Smart City system [1], City of Tokyo [2]). Cities continue to attract new people and by 2030 the UN estimates that than 60 percent of the global population is expected to live in large cities[2]. With nearly 38 million people, Tokyo tops UN's ranking of most populous cities followed by Delhi, Shanghai, Mexico City, São Paulo and Mumbai. The consequences and challenges for such vast increase in population on the city resources and services are more than obvious.

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