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*Editorial*

# Ubiquitous Context-Awareness and Wireless Sensor Networks

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In 1991, Mark Weiser proposed ubiquitous computing that is based on the network environment [1]. It is to create a user centric computing and its environment that is different from the traditional ways and computing models [2]. Ubiquitous computing service aims to develop the various ranges of sensors and networks available to provide timeless services and user's location. A main issue of ubiquitous computing can be context awareness that it is able to provide various services to end users not only based on information but also based on potential contextual information [3].

In this content, wireless sensor network (WSN) is a hot issue and new trend of ubiquitous computing technologies to implement the ubiquitous society. WSNs are expected to be applied in many long-term applications such as scientific exploration, preventive maintenance, disaster management, emergency management, security and surveillance, environmental monitoring, monitoring in domestic situations, civil, biological, a wide range of military, and health-care applications, and infrastructure protection. These applications require efficient and flexible sensor networks [4]. So WSNs are composed of a collection of many sensor nodes that are deployed in a sensor field, each of which collects data and relays them to the base station (called a sink node) where data can be analyzed, applied, and used efficiently. Generally, a sensor node is made of a sensing device, a processing unit, a transceiver, and a power unit. The main task can be summarized by three keys: sensing, computing, and communicating [5].

A common architecture of WSNs is sink and sensor pair. The sensors deal with measuring the environmental status, which may change with time and space, collaborating with each sensor, and forwarding the measured data from the sensor to the sink. The sink is responsible for integrating, analyzing data received from sensors, and responding to users and applications [6].

Many Researchers study and propose their manuscripts and system using WSNs.

Hung et al. [7] propose a mechanism to maintain temporal coverage for the quality of monitoring (QoM) using WSNs. Generally, in WSN environment that can require many sensors with powerful energy, they suggest a method to improve energy efficiency.

Adhikari [8] reviews designing a good MAC (medium access control) protocol for a WSN. That is, he highlights the importance of MAC in WSN when we implement energy efficient medium access rules among the low capacity sensor nodes.

In this technical trend, a context-aware system and application can be hot issue in ubiquitous computing environment. That is, context-awareness techniques can provide both functional and nonfunctional system requirements. Aqeel-ur-Rehman et al. [9] review importance of context awareness in sensor network and ubiquitous computing. And they present an example that context-aware sensor grid framework should be composed of three layers, sensor network layer, grid computing layer, and context-aware application

layer. Soldatos et al. [3] highlight that context awareness is a core characteristic of ubiquitous computing systems. Ramesh et al. [10] propose an application for context-aware computing (CAC) for WSN (CAC-WSN). Pignaton de Freitas et al. [11] develop a service using vehicular sensor network (VSN) and vehicular ad hoc network (VANET) considered context awareness.

By getting many researches, we can see that ubiquitous context-awareness and wireless sensor networks are new technical trend and key words, nowadays. And we hope that many researchers and readers are interested in this area.

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