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THE CASE STUDY OF SYSTEM ARCHITECTURE IN WIRELESS SENSOR NETWORKS: THE KINDERGARTEN SAFETY SYSTEM (KSS)

JUNMO YANG AND SANG-HUN JUNG
Telecommunication R&D Center
Samsung Electronics Co., LTD.
Suwon City, Korea
junmo2.yang@samsung.com and sanghun.chung@samsung.com *

ABSTRACT—In Wireless Sensor Networks (WSNs) and Wireless Personal Area Networks (WPANs), IEEE802.15.4 [1] has emerged as one of the most promising radio specifications for physical layer and medium access control, guaranteeing low rate and low power communication independent of infrastructure. To utilize the collected information under WSNs, the data typically pass through gateways or sinks. Simultaneously, the control messages for sensor networks reach each sensor node via gateways. However, practical constraints such as multiple destinations for the sensing data and multiple types of devices at each sensor node make the design of both gateways and application servers very challenging. In this paper, a practical system architecture for WSNs is proposed for gateways and service brokers. A real-world deployment of the proposed WSN system architecture is also suggested.