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Abstract

Application of wireless communication technologies in Smart Grid

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Abstract:

The Smart Grid is an advanced digital two-way power flow power system capable of self-healing, adaptive, resilient and sustainable with foresight for prediction under different uncertainties. Smart grid technology places greater demands for reliability on communications infrastructure. Due to the large number of distribution components connected to the distribution level feeders, a massively deployed wireless communication network is identified as the potential technology for this application. This paper presents a comprehensive review of wireless communications technologies for implementation of smart grid in a systematic way, a case study of Puducherry Smart Grid pilot project is also presented. Various network attributes like internet protocol (IP) support, power usage, data rate etc. are considered to compare the communications technologies in smart grid context. Techniques suitable for home area networks (HANs) like ZigBee, Bluetooth, Wi-Fi, and Z-Wave are discussed and compared in context of consumer concerns and network attributes. A similar approach in context of utilities concerns is adopted for wireless communications techniques for neighborhood area networks (NANs) which include WiMAX and GSM based cellular standards. Smart grid applications, associated network issues and challenges are elaborated at the end.

Biography:

Dileep. G received his doctorate from Indian Institute of Technology (IIT) Roorkee on maximum power point tracking of solar power using DC-DC converters, his master's degree in Power Electronics and Drives from National Institute of Technology (NIT) Warangal and bach-

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Publication of speakers:

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