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IoT: A smart gateway for smart grid technology

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Efficient energy saving and energy distribution and utilization in a real time environment is the prime area under research. Smart grids offer huge potential in this research area and efficient way to rely on multiple renewable energy sources. Flexible and efficient combination of energy sources, optimal distribution paths and data storage are the features of smart grids. The proposed paper elevates the possible advantages upon developing a network where utilization, distribution and storage of data of multiple smart grids are controlled by central system over the internet as gateway (IoT). In order to achieve the above, smart meter systems and intelligent control systems will be developed with embedded technology. Arduino will be used for the smart meter system development and Raspberry-Pi to develop the intelligent systems which controls the multiple smart meter systems. Through these intelligent systems, the data is analyzed and communicated to the central systems over internet. IoT (Internet of Things) is the technology which connects people to the systems and to the things over internet. Gateway architecture will be designed and developed using embedded communication protocols, which enables the intelligent systems to communicate with the internet over cloud computing. World forum of IoT declared the 7 layered open architecture model for gateway design. With this gateway, the application specific edge software will be developed and later the web user interface is developed for end user. Mobile application can also be developed over the application layer. Thus interoperability between the grids and central distribution, utilization and control systems would be achieved.

Biography

Sowjanya Dundhigal has completed BE in Electrical & Electronics Engineering as major, MS in Real Time Embedded Systems from Coventry University and Masters of Research (MRes) in 2011 at Glyndwr University, UK with Electrical Engineering as specialization. She has worked as Business Analyst and Research Embedded Engineer in UK. She is currently working as an Associate Professor and EPICS Program Manager at CMR College of Engineering & Technology, Hyderabad, India. She has published more than 5 papers in reputed journals and has been serving as an Editorial Board Member of *CMRJET* (*CMR Journal of Engineering & Technology*).

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