Editorial

Internet of Things (IoT) and Cyber Physical Systems (CPS) for Smart Applications

The current era is evolving with the synergy between the physical systems, components and the computational technologies. A Cyber-Physical System is a collection of physical world systems or devices interacting and communicating with each other for their operations. CPS integrates the concepts of computation, communication and control for operations and monitoring of physical systems. The cyber-physical systems can have dynamic and distributed subsystems that have the auto-connection and self-operating capability. Engineered cyber-physical systems are booming and have been studied in robotic networks, power grids, communication networks, and sensor networks. Those systems have proven their excellence and are encouraged for its use in industrial automation, rescue mission, robotic surgeries, robotic surveillance, environmental monitoring and sensing, etc. The CPS integrates physical systems in applications used in almost all the areas such as industrial manufacturing systems, transportation systems, medical devices, military networks, home area networks, smart grid, smart buildings, etc. The thematic issue on “Internet of Things (IoT) and Cyber Physical Systems (CPS) for Smart Applications” discusses on the recent advances and literature survey of various designing, modeling, specification, analysis and verification of IoT and CPS applications.

The technical aspects in the thematic issue cover the interdisciplinary fields of science covering wide range of topics and applications. The first article titled “Detection of Obstructive Sleep Apnea using Internet of Things: A Review” authored by MK Sandhya, S Sathya Priya and S. Prasidh demonstrates the various non-invasive schemes using sensors and Internet-of-Things to detect Obstructive Sleep Apnea [1]. Further, the open research issues and challenges in detecting Obstructive Sleep Apnea are also presented in the paper. The second article is authored by M. Durga Rao and I. Srinivasa Rao entitled “Design and Development of Wide Beam width Antenna for Ionosphere Wireless Remote Sensing Applications” in the issue puts forward the study of a designed wide beam width antenna for ionosphere wireless remote sensing applications. The article also discusses the new approach devised for the first time to design the two element, wide beam width tilted Yagi antenna, where folded dipole acts as active driver element and reflector as parasitic element [2]. The peak power handling capability of up to 1kW by the system shows the reliable system design can be used continuously for long term use. The third article authored by T.S Pradeep Kumar, and P. Venkata Krishna entitled “A Survey of Energy Modeling and Efficiency Techniques of Sensors for IoT Systems” discusses on a survey of the power modeling techniques of sensors in IoT systems. Some of the techniques that are studied and surveyed in the paper are transmission power modeling, power modeling of the sensor for sensor subsystems and IoT systems, clustered approach, energy harvesting models and transmission distance modeling [3].

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REFERENCES


Reshmi TR
(Guest Editor)
Society for Electronic Transactions & Security (SETS)
MGR Knowledge City, CIT Campus, Taramani,
Chennai, Tamilnadu
India
E-mail: reshmi@setsindia.net