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Suchismita Satpathy, Bibhudatta Sahoo, Ashok Kumar Turuk

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Sensing and Actuation as a Service Delivery Model in Cloud Edge centric Internet of Things

Suchismita Satpathy*, Bibhudatta Sahoo, and Ashok Kumar Turuk

Department of Computer Science and Engineering

National Institute of Technology, Rourkela, INDIA -769 008

Abstract

Internet of Things (IoT) is an advanced innovation of the Internet which allows communications among all living or non-living things. The smart devices have become powerful and intelligent that they can sense, communicate, compute and actuate among themselves to provide a smart environment. So, in short, it could be possibly known as the Internet of Everything (IoE). However, with the current architecture, the contributors are not motivated to share the sensed data or provide their actuators to others as a service. The security and various node managements are some of the main issues to be addressed for motivating the contributors. Therefore, we introduce "Sensing and Actuation as a Service Delivery Model (SAaaSDM)", which is a cloud edge-centric service delivery model. It authorizes access to the IoT Architecture (IoT-A), where sensed, actuated, and computed data from various existing mobile devices can be used by the end user through SAaaSDM on a pay as you go fashion. Participatory node management, virtual node management, and quality review management are the emerging components of this architecture. Participatory nodes along with device owners claim for various challenges like cost, reliability, trustworthiness, quality, utility etc. Similarly, the expectations of the end users also appear as a big challenge. In this paper, we present the SAaaSDM system model which can deal with open issues and also discuss the future directions for the researchers in this field.

Keywords: Internet of Things, Cloud Computing, Cloud Edge centric IoT, S^2aaS, Sensing and Actuation, Virtualization.

*Corresponding author

Email address: satpathy.suchi@gmail.com (Suchismita Satpathy*, Bibhudatta Sahoo, and Ashok Kumar Turuk)