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Title: M2M Communications

Abstract:

Machine to Machine communications (M2M, also known as Internet of Things (IoT)) aims to enable interactions between smart objects ranging from sensors to actuators and robots and smart meters…, with or without human intervention. It has its origin in control and data acquisition systems. Recent developments in areas such as wireless communications, sensing and actuation have given it a new impetus. Furthermore, the number of connected devices is poised to grow exponentially in the coming years. As a results, IoT will usher a wide range of smart applications and services to cope with many of the challenges and the needs that we face in our daily lives. It represents intelligent end-to-end systems that enable smart solutions and as such it covers a diverse range of technologies, including sensing, communications, networking, computing, information processing, and intelligent control technologies, and so on. To make IoT a reality, significant research needs to be conducted within and across these technological aspects. In this talk, an overview of M2M communication architecture with the focus on applications is first given. Then some of standardization activities in the world are introduced. In the third part, the major communications and networking technologies ((IEEE 802.15.4, Zigbee, 6LoWPAN) for M2M are discussed. It also includes the new applications layer protocols being developed (e.g, IETF CoAP). In the final part, some research directions and concerns are listed.