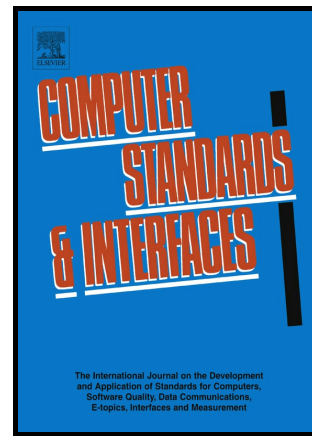


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Guilherme Mussi Toschi, Leonardo Barreto Campos, Carlos Eduardo Cugnasca



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Home Automation Networks: A Survey

Guilherme Mussi Toschi, EPUSP Leonardo Barreto Campos, EPUSP
and Carlos Eduardo Cugnasca, EPUSP

Department of Computer Engineering, University of Sao Paulo, SP, Brazil

Abstract

Home Automation Networks provide a promising opportunity in designing smart home systems and applications. In this context, Machine-to-Machine (M2M) networks are emerging as an efficient means to provide automated communication among distributed ubiquitous devices on in a standardized manner, but none have been adopted universally. In an effort to present the technologies used in the M2M and home integration environment, this paper presents the home area network elements and definitions, and reviews the standards, architectures and initiatives created to enable M2M communication and integration in several different environments, especially at the smart home domain. This paper points out differences between them and identifies trends for the future.

Keywords: Home Automation; Smart Home; Standards Review; System Integration; M2M Communication.

1. Introduction

Home automation has evolved into more than a connection between autonomous devices. It is evolving towards systems and processes that are becoming more intelligent and systems that are even capable of communicating with people. According to [1], computers will increasingly be embedded in our natural movements and interactions with our environments, both physical and social. This means we are close to having a transparent social relationship with an autonomous system. This idea is similar to the one Mark Weiser foresaw, in 1991, in which computers would increasingly enable the integration of simple objects, such as clothing labels, air conditioners, light switches, online classes and more, in unobtrusive way in the users life.

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