Emerging Trends and Recent Development in Embedded System

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Abstract

In fast moving consumer electronics markets where product lifetimes may be measured in months rather than years, fast time-to-market development of the system-on chip solutions that lie at the heart of these products has become critical to commercial success. New semiconductor process technologies have the potential to integrate ever greater functional complexity onto realistically priced silicon chips. Yet there still remains a significant design gap between what can theoretically be integrated onto silicon and what can be efficiently designed onto it. Today, though still relatively stable, the roles of carmakers and their suppliers are undergoing a period of stress caused by the increased importance and added value of electronics. Most of today's embedded systems are required to work where the characteristics of the computational load cannot always be predicted in advance. The embedded systems are, by nature, inherently real-time. Moreover, most of embedded systems work under several resource constraints, due to space, weight, energy, and cost limitations imposed by the specific application. Still timely responses to events have to be provided within precise timing constraints in order to guarantee a desired level of performance. Over recent years, embedded systems have gained an enormous amount of processing power and functionality. Embedded computing is seeing a definite trend in migrating to 32-bit, 64-bit and from single to multicore processors. Embedded systems meet their performance goals, including real-time constraints, through a combination of special-purpose hardware and software components tailored to the system requirements.This paper describes the various technological revolutions and pinpoints the embedded systems revolution as the most recent and quietest of all. Being a revolution within another, it is seen as embedded into digital revolution.It also provides an overview of the emerging trends and the related implications in the design and development of systems

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