The Use of Microelectronics for Future Telecom and Multimedia Systems

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Abstract

As a world-leader in telecommunication and multimedia system developments, Alcatel-Bell will present the main trends and challenges for the coming years for microelectronic system design in these domains.

Political objectives stimulate competition today: privatization and liberalization are currently changing the world telecom market. The continuous evolution in silicon processing and optical fiber technologies are enablers for next-generation systems and applications. Broadband Networks (ATM, SONET, SDH, etc.), Full Service Networks (ADSL, VDSL, HFC, etc.), and Wireless Personal Communication Systems (GSM, DECT, etc.) are only a few examples.

Microelectronic system design will evolve together with the silicon and fiber technologies, in order to keep system development manageable during the next decades. Future microelectronic developments consist of complete systems-on-chip, containing a growing amount of software in combination with dedicated hardware functions. Reduction of power will be a key issue for many applications. Co-development of hardware and software will be necessary, and system design methodologies will start from an abstract design-entry level.