

SISTEME ȘI REȚELE DIGITALE INTEGRATE SoC ȘI NoC: CONCEPȚIE, PERFORMANȚE, CALITATE

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Abstract

System on a chip (SoC) is an idea of integrating all components of a computer or other electronic system into a single chip. It may contain digital, analogue, mixed-signal and often radio-frequency functions – all on a chip. A typical application is in the area of embedded systems.

The Network on chip (NoC), represents the future integrated telecommunication systems. NoC template provides vertical integration of physical and architectural levels in system design. In the NoC template, a chip consists of contiguous areas called regions, which are physically isolated from each other but have special mechanism for communication among each other. A region of NoC will be composed of computing resources in the form of processor cores and field programmable logic blocks, distributed storage resources, programmable I/O and all these resources interconnected by a switching fabric, allowing any resource to communicate with any other resource.

This is the first paper in a series of articles which will analyse problems related to the technology, design, performance evaluation, quality, reliability and safety of SoCs and NoCs.

In this paper, some problems related to the design, cost, performance evaluation and quality of SoCs and NoCs will critically analysed.