An OCP Compliant Network Adapter for GALS-based SoC Design Using the MANGO Network-on-Chip

The demand for IP reuse and system level scalability in System-on-Chip (SoC) designs is growing. Network-onchip (NoC) constitutes a viable solution space to emerging SoC design challenges. In this paper we describe an OCP compliant network adapter (NA) architecture for the MANGO NoC. The NA decouples communication and computation, providing memory-mapped OCP transactions based on primitive message-passing services of the network. Also, it facilitates GALS-type systems, by adapting to the clockless network. This helps leverage a modular SoC design flow. We evaluate performance and cost of 0.13 um CMOS standard cell instantiations of the architecture.

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Authors: Bjerregaard, T. (Intern), Mahadevan, S. (Intern), Olsen, R. G. (Ekstern), Sparse, J. (Intern)
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