# PROTOTYPING EMBEDDED DSP SYSTEMS – FROM SPECIFICATION TO IMPLEMENTATION (ThuPmOR3)

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**Abstract:** When embedding DSP systems, a designer must meet not only functional but also many other requirements, such as low resource requirements, real-time constraints and low power consumption. The design flow used in prototyping such systems usually includes high-level languages for specification capture and then involves a number of traditional steps until the system is synthesized. Those steps often require manual interventions, as they lack coherence and integration. New technologies, such as reconfigurable systems based on FPGA technology and novel application specific tools offer a path towards rapid prototyping of such applications in Systems on Programmable Chip. In this paper we explore the features of those technologies and discuss their weaknesses, and present an approach to embedded systems implementation based on a new multi-ple-processing element computing architecture.