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Target Compiler Technologies rolls tool-kit support for custom DSPs

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New Orleans - Target Compiler Technologies NV (Leuven, Belgium) last week was set to announce a service for users of its Chess/Checkers retargetable compilation DSP design tools at the Design Automation conference. The Chess/Checkers environment, which was introduced in November 1998, allows engineers to define their own application-specific DSPs. When it was introduced, users were assured that a set of retargetable development tools would also be available.

The Checkmate service added by Target creates a processor-specific tool kit, including a compiler, a linker, an instruction-set simulator and an assembler and disassembler for any DSP architecture created using the Chess/Checkers environment.

The Chess/Checkers development environment comprises a series of retargetable tools: the Chess C language compiler, the Checkers instruction-set simulator, the "Bridge" linker and the "Darts" disassembler and assembler. Users specify the architecture in nML, a high-level processor modeling language.

Target allows alternative DSP architectures to be compared and their performance evaluated using real application code prior to description in a hardware description language such as VHDL.

Building a kit

Once a DSP architecture has been developed, the processor designer supplies Target with the processor model of the DSP, and then Target creates the tool kit. The turnaround time for the service is typically a few days, the company said.

"The quick availability of a DSP tool kit is a prerequisite for the successful introduction of a new DSP into the marketplace," said Gert Goossens, general manager of Target. "Our main customers are design teams who are using the retargetable Chess/Checkers tools to develop new DSP architectures. However, the end users of a DSP typically have less need for retargetability. They require support tools that generate efficient code for their target processor and that are easily affordable."

A this stage, Target is not actively developing software-development tool kits for existing general-purpose DSP architectures, although the company did not rule that out.

"Currently, our focus is on applications-specific DSPs, which are designed by our customers with the Chess/Checkers environment," said

Johan Van Praet, product development manager at Target. "The Chess compiler favors a certain style of DSP architectures, with highly encoded instructions, a heterogeneous register set and single-cycle execution of instructions."

The processor-specific tool kit is created under a contract between the processor developer and Target. Authorized users of the processor can then purchase a license for the resulting tool kit directly from Target.