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# Imperas donation forms open-source virtual platform initiative

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LONDON — Imperas Ltd., a young company developing multiprocessing development tools, has announced that it has donated technology for an open-source infrastructure to support developers who want to simulate software running on system-on-chip designs.

Imperas (Thame, England) is providing some high-level processor models, APIs for building platform verification infrastructure and developing behavioral and processor models, and OVPSim, a reference simulator. These will be downloadable for free from an OVP website or from SourceForge, an open-source code repository. The company has also been pitching its approach around the semiconductor and EDA industries and an initial list of about 20 supporters includes Carbon Design Systems Inc., CriticalBlue Ltd., Denali Software Inc., MIPS Technologies Inc. and Tensilica Inc.

OVP is offering models for some ARM and MIPS processor cores and the OpenRISC 1000 royalty-free processor core.

Simon Davidmann, CEO and founder of Imperas, said his company would make its money by providing verification, debug and analysis tools that would work with the open-source infrastructure. "We saw a very fragmented market with point tools that address parts of the problem. Proprietary platform technologies that limit interoperability, or that are too slow for adequate software verification, have dramatically limited the progress of this entire industry," said Davidmann.

The donation is worth $4 million, by Imperas reckoning, and the company will support and manage the OVP website, and will continue to contribute innovation to keep the infrastructure evolving. However, Davidmann predicted that an open-source movement would develop around OVP leading to the donation of more and improved models.

Davidmann is not new to making technology donations to stimulate markets. His previous company, CoDesign Automation Inc., created the Superlog language. It was intended to provide a design language at a level of abstraction above, but compatible with, Verilog. The language was eventually standardized as SystemVerilog and CoDesign Automation was bought by Synopsys Inc. for $36 million in 2002.

OVP is intended to address problems embedded software developers have when modeling the SoC that hosts their software. These range from modeling environment complexity, lack of open resources for building platforms, to insufficient simulation speed for software verification. "Much of the System C modeling operates at a million instructions per second. The software developers need 200 million instructions per second," said Davidmann to illustrate the problem.

The OVP technology has been used in design projects with multiple end-users, including Azul Systems Inc. (Mountain View, Calif.), a provider of servers based on its own multiprocessing silicon. John Brennan, Azul s vice president of hardware engineering, said the Azul operating system boots just as fast on the OVP platform as it does on the SoC."

Software complexity is set to increase as system developers turn to multiprocessing hardware. That complexity as well as additional inter-processor conflicts, ambiguities and challenges will require that software is tested comprehensively early in the development process, according to Imperas.

The OVP donation allows end users, tool and intellectual property (IP) developers and service providers all to contribute to the platform development infrastructure.

"OVP provides another channel for MIPS to expose SoC architects and embedded software developers to our processor IP, and makes it easier for our customers to port applications to our processors," said Jack Browne, vice president of marketing for MIPS Technologies Inc. (Mountain View, Calif.), in a statement. "With software now a major part of overall SoC development costs, OVP models and associated tools will enable our customers to accelerate their SoC deliveries."

"The fundamental excitement around the OVP launch is due to the ability for the industry to coalesce on an open infrastructure and enable real software development earlier in the design process," said Mark Gogolewski, chief technology officer with Denali Software (Sunnyvale, Calif.).

Davidmann of Imperas said that for the now OVP would remain under the control of Imperas and would be administered by the company on a voluntary basis. As the approach becomes popular it would be only natural that it would acquire a momentum of its own and would, one day, pass into the hands of some sort of independent forum and secretariat, Davidmann said.

The OVP website is found at www.OVPworld.org. It will serve as the portal for OVP, with details about the technology, a discussion forum for the OVP community, and links to download all the OVP components. **Related articles:**

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