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## Forte Announces Cynthesizer Behavioral Synthesis using SystemC Three Leading Electronics Companies Adopt Cynthesizer for Behavioral Design

**San Jose, Calif. – May 10, 2004** – Forte Design Systems today announced [Cynthesizer](#), the first [behavioral synthesis](#) product to offer an implementation path from SystemC to RTL, verification, and co-simulation. Cynthesizer accelerates RTL delivery for leading-edge integrated circuits and systems-on-chip by automatically generating optimized RTL code from a C++ / SystemC algorithmic description.

Cynthesizer fills the productivity gap for hardware designers who are struggling to create increasingly complex chips using previous generation RTL methods. Designers are able to work at a higher level of abstraction with Cynthesizer, reducing the amount of code necessary to describe and implement design functionality.

“The critical enablers for the electronics industry’s move to the next design abstraction level are identical to those that enabled the transition from gate-level to RTL: a viable language, simulation, and most importantly, synthesis”, said Jacob Jacobsson, Forte’s president and chief executive officer. “Forte’s behavioral synthesis breakthrough enables the use of the next level of design abstraction and serves as an ESL catalyst by surmounting the complexity issues at 90 nm.”

“With 10-100X fewer lines of code than RTL design, more and more project teams are starting their hardware designs at the behavioral level using C/C++ algorithms and SystemC models,” said Brett Cline, Marketing Vice President at Forte. “With Cynthesizer, designers can take their existing algorithms and automatically create verified high quality RTL implementations in days rather than the months required with conventional RTL design.”

### Importance of Behavioral Synthesis

Current RTL design and refinement is time-consuming and error-prone with the decreases in device geometries. More transistors are now available but the resources required to evaluate multiple architectural choices and their respective RTL configurations manually are prohibitive. It’s becoming impossible to design effectively and meet project deadlines. As a result, designers risk locking into architectural and RTL design descriptions that cannot be implemented, or do not meet the design objectives. Additionally, inconsistent RTL coding styles and design approaches within a project team amplify issues further downstream in the design flow, such as sub-optimal logic synthesis results and timing closure problems.

Behavioral synthesis allows designers to quickly create hardware from un-timed high-level models. These models accurately describe the function but do not specifically schedule or allocate hardware resources as required when using traditional RTL logic synthesis tools. With behavioral synthesis, design teams create and verify their designs in an order of magnitude less time because it eliminates the need to fully schedule and allocate design resources with existing RTL methods.

## Cynthesizer Features

Cynthesizer is the only behavioral synthesis tool to offer designers a complete, automated path from high-level algorithms to RTL, including synthesis, verification, and co-simulation. It will allow designers to investigate and automatically validate multiple RTL implementations based on user directives without modification to the original design.

As a result, designers can use Cynthesizer to automatically produce RTL in days or weeks instead of months, with quality of results that often surpasses that of hand coded RTL. Cynthesizer is delivering the foundation for a synthesizable, routable design and ultimately silicon success.

Using un-timed high-level SystemC models, Cynthesizer is the first behavioral synthesis product to automatically build a fully timed RTL hardware implementation based on an external set of constraints created by the user. Designers can easily and quickly make tradeoffs in chip performance and area resulting in higher quality designs and superior IP reuse without modification of the design source. Cynthesizer outputs industry-standard RTL specifically targeted for a number of downstream flows and products, such as commonly used simulators and logic synthesis tools. By using Cynthesizer to control and customize the RTL results, designers eliminate many issues inherent to conventional RTL design flows, such as design intent errors, poor quality of results and timing closure problems.

Cynthesizer includes a unique combination of behavioral synthesis functions: automation of tasks such as operation scheduling, cycle timing, control and data path design, resource allocation and RTL generation. Cynthesizer also includes a complete automation and verification package which allows results to be immediately verified by reusing a test-bench with high-level design models, generated RTL, and gate-level models.

## Customer adoption

Forte is also announcing three new Cynthesizer customers: Fujitsu Laboratories Ltd, Ricoh and Sony Corporation. Cynthesizer is already being used for production designs.

"We're extremely happy to announce adoption of Cynthesizer by leading edge companies such as Fujitsu Laboratories Ltd., Ricoh and Sony Corporation," said Jacob Jacobsson. "SystemC-based design with Cynthesizer is providing these customers a path to high-quality silicon in a fraction of the time of RTL-based design."

## Pricing and Availability

Cynthesizer is available today on both Linux and Solaris platforms. Pricing starts at \$250,000 per year for a time-based license. Contact Forte sales at [sales@ForteDS.com](mailto:sales@ForteDS.com) for more information.

## About Forte Design Systems

Forte Design Systems is a leading provider of software products that enable design at a higher-level of abstraction. Forte's innovative Cynthesizer behavioral synthesis product allows design teams creating complex electronic systems from algorithmic designs using ASICs, SoCs, and FPGAs to significantly reduce their overall design and verification time. Forte is headquartered at 100 Century Center Court, San Jose, CA 95112. For more information, visit us at [www.ForteDS.com](http://www.ForteDS.com) or see us at DAC 2004 in San Diego, CA in booth 3820.