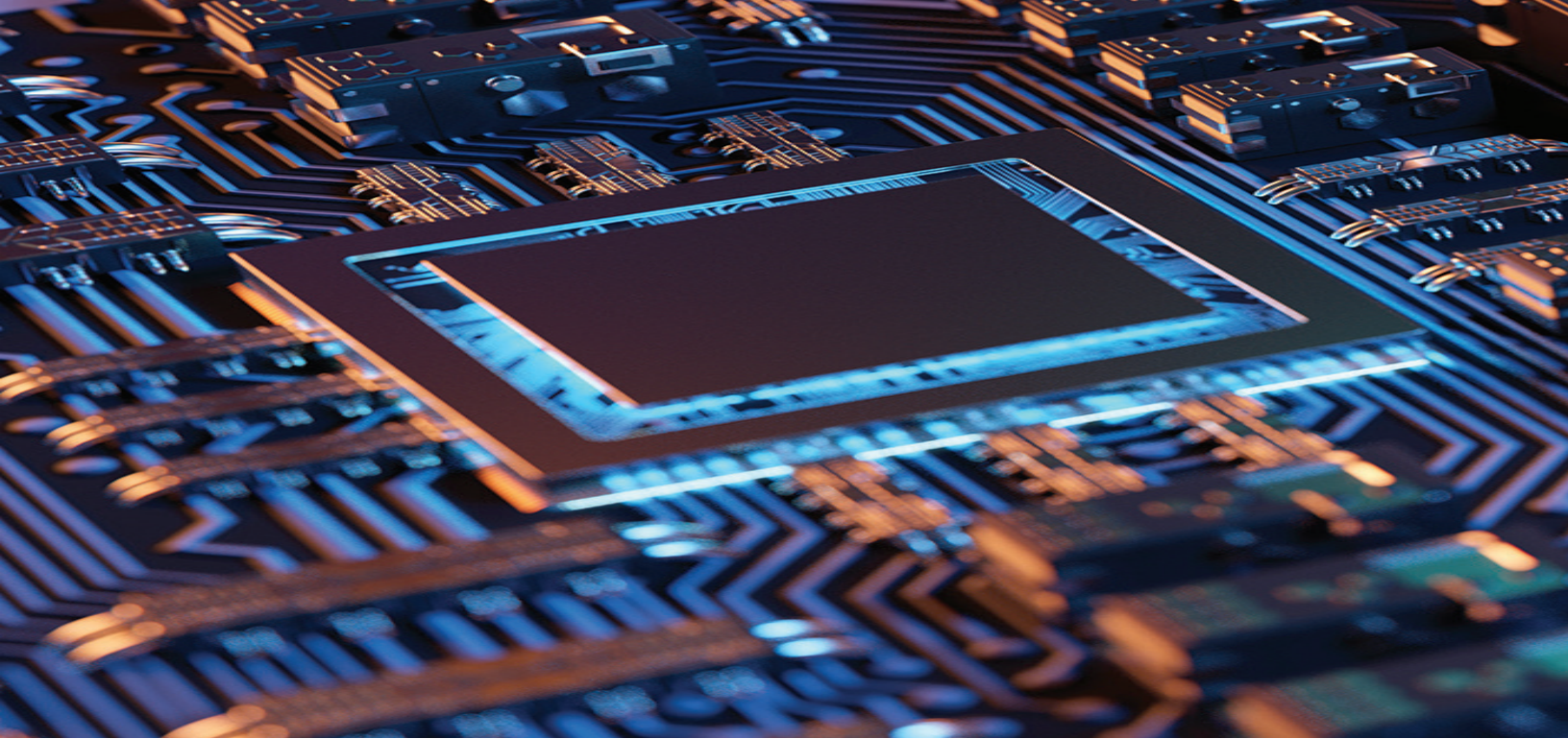




DIGITAL INDUSTRIES SOFTWARE

Precision[®] RTL Plus

Advanced FPGA Synthesis Technologies

Benefits

- All features of Precision RTL synthesis
- DO-254 certification utilities for mil-aero applications
- User-directed FPGA resource management
- On-chip debug & validation
- Advanced timing analysis
- Design space exploration
- Multi-vendor physical synthesis
- Fully automatic incremental synthesis
- Low power synthesis
- IEEE 1735 standard based encryption

Summary

With the complexity of FPGAs now approaching that of ASICs and SoCs, system houses must consider more advanced FPGA implementation flows. Precision RTL Plus provides advanced synthesis technologies as part of an integrated, FPGA vendor neutral design environment. By delivering high-quality results and offering industry-specific requirements, Precision RTL Plus offers breakthrough advantages for both commercial applications and for mil-aero and safety-critical systems.

FPGA synthesis for mil-aero and safety critical applications

Mil-aero and safety-critical applications often have unique requirements for safety and must comply with standards such as DO-254, Precision RTL Plus offers the following features and flow integration:

- Repeatability of results
- Logic Equivalence Checking with FormalPro[™] to confirm that the final FPGA implementation is equivalent to the original RTL design.
- Assured synthesis mode prevents synthesis/simulation mismatches and enables formal equivalency checking.
- Requirements tracing with ReqTracer[™] allows designers to track requirements through synthesis and place and route (P&R).

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User-directed Resource Management

FPGAs have an abundance of specialized resources such as DSPs & RAMs. Precision RTL Plus optimizes utilization of these embedded blocks with the Resource Manager - a graphical tool to manage blocks and do what-if analysis to achieve best performance and area.

On-chip Debug and Validation

Precise-Validate offers a vendor-independent FPGA validation methodology allowing users to instrument, validate, and debug designs at system speed without having to change HDL or functionality of the original design.

Design space exploration

Push-button mechanism with Precise-Explore to find optimal tool settings based on design-specific characteristics and performance, area or meet constraint goals.

Physical synthesis

Precision RTL Plus offers multi-vendor physical synthesis, enabling designers to reach their timing goals faster and with less iteration. Physical synthesis is a push-button and timing-driven technology, providing an optimized netlist to the FPGA vendors' P&R tool.

Low-power synthesis

As more FPGAs are moving into low-power applications, designers not only need to carefully select the most power efficient device but also ensure their implementation flows reduce power to the extent possible. Precision RTL Plus supports optimizations to reduce dynamic power for multiple device vendors.

Incremental synthesis

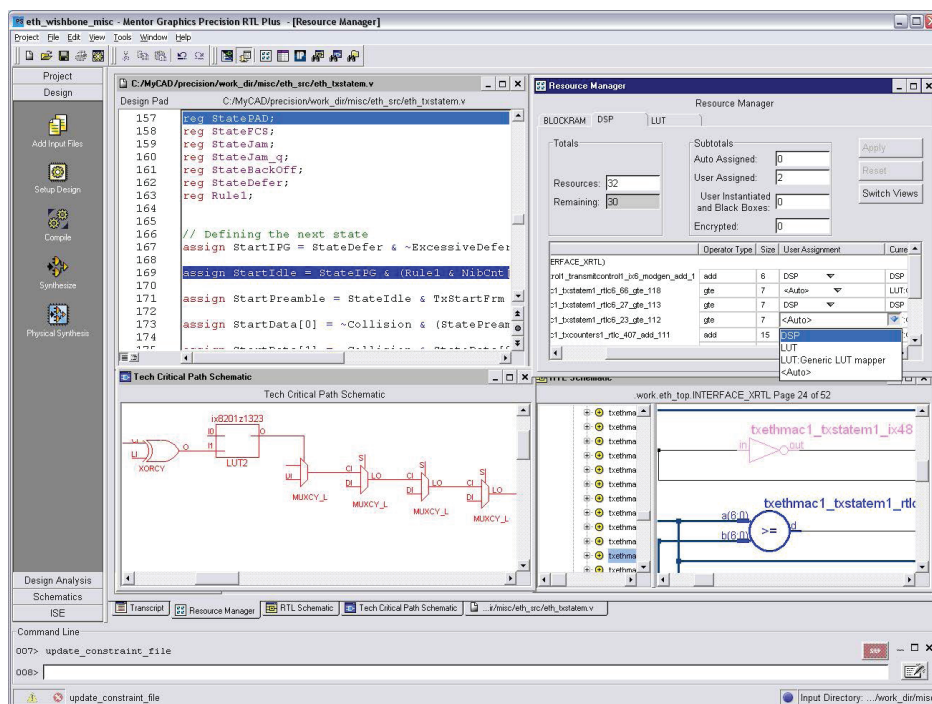
Precision RTL Plus enables designers to reduce run-time and preserve work already completed by rapidly and predictably implementing changes using either a fully automatic or partition-based incremental flow.

Precise-Encrypt™: encryption flow

Precision RTL Plus offers Precise-Encrypt™, a vendor independent HDL encryption flow based on the IEEE 1735 standard. With Precise-Encrypt, designs can be shared securely with teams and development partners, and IP vendors can securely deliver IP for any FPGA target. When used with ModelSim® or Questa®, designers can use the same encrypted HDL for both simulation and synthesis, thereby ensuring consistency between the functional verification and implementation flows.

Part of the Precision Synthesis family

Siemens offers three unique FPGA synthesis solutions. Precision RTL, Siemens' entry-level FPGA synthesis product, offers best-in-class quality of results with a vendor-independent FPGA synthesis solution. Precision RTL Plus, adds DO-254 certification utilities for mil-aero applications, on-chip debug & validation and resource optimization for DSPs & RAMs. Precision Hi-Rel, enhances Precision RTL Plus with automated mitigation of SEUs/SETs in safety-critical & high-reliability applications using TMR, safe FSM and other optimizations.



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