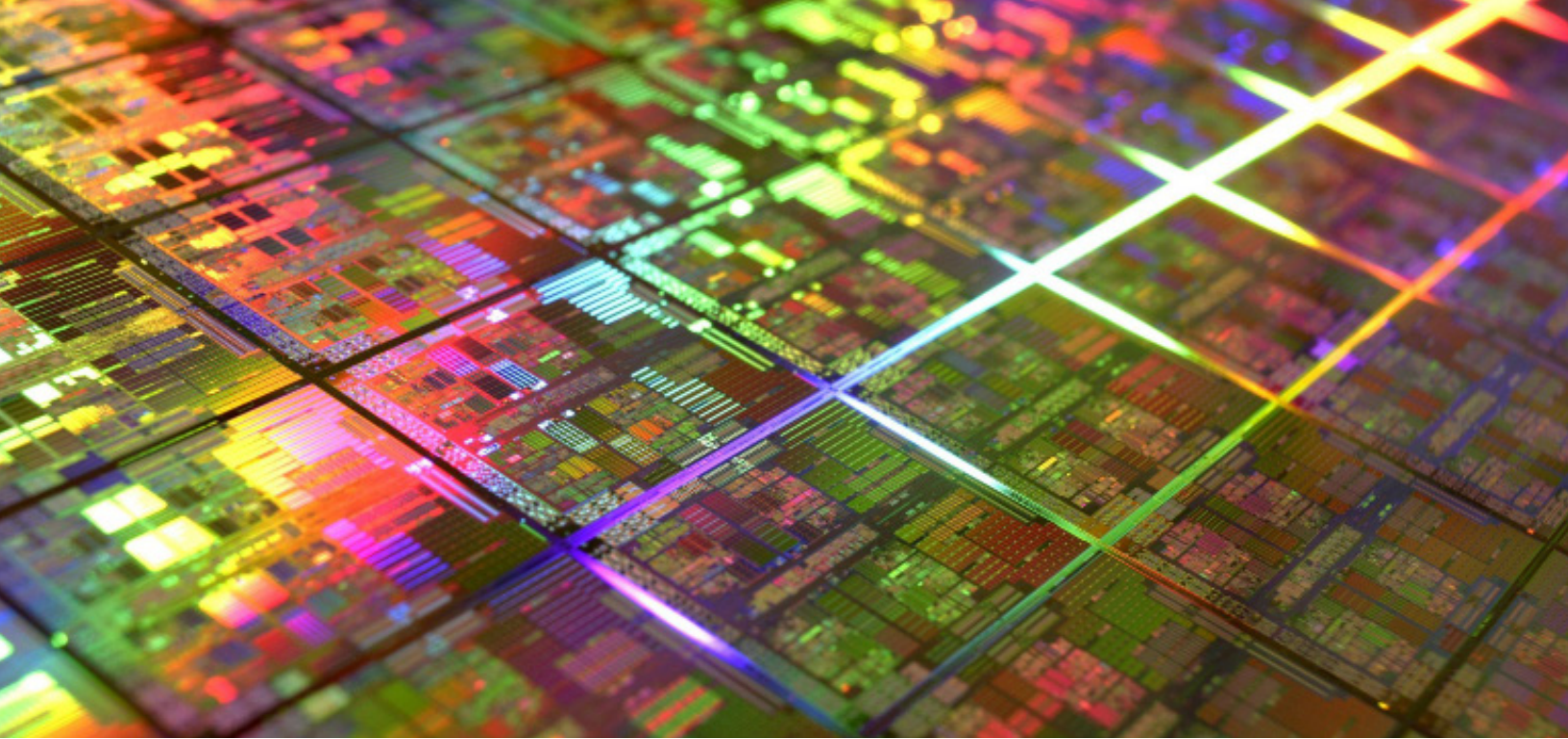




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Questa Lint

Features and Benefits

Adaptive insight

- Collation of similar results to accelerate find-and-fix cycles
- Change-only reporting to identify new issues caused by a recent change
- Issue visualization via text, FSM, or schematic views to identify issues intuitively

Value through integration

- Complete LRM support through Questa to ensure code portability throughout the use of Questa tools and beyond
- Pre-verified and compiled FPGA libraries for rapid bring-up of FPGA designs

The high impact of design issues on projects

Mistakes happen, but finding and fixing issues late in programs increases overall program scope, as well as schedule and resource requirements. Competitive pressures push teams constantly to do more. Functional verification teams face significant challenges to build testbenches quickly, uncover design issues, and enable rapid debug. Incomplete or incorrect bug fixes (or even new bugs introduced in the rush to meet immovable deadlines) compound the problem.

Actionable intent-focused insight for designers

Questa Lint provides a fast check of your RTL, without waiting for a testbench, looking for completeness and consistency issues. Using syntactic, semantic, stylistic, and structural analyses, Questa Lint identifies issues at the time of introduction, preventing these issues from becoming expensive to fix later. Only issues that need to be fixed are reported, and the results are prioritized and collated such that the first issues addressed will provide the biggest return. Results are presented in intuitive visualizations, with metrics and quality scores summarizing detailed information in an easy-to-use dashboard.

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Features and Benefits (cont.)

- Common issue status flows and user interfaces with other Questa Design Solutions tools to ensure minimal learning curve throughout the solution

Design scoring

- Results-based quality score to determine quality of internal and external IP

Collaborative team-based debug

- Team member-assignable issues to enable teams to work collaboratively in parallel to clean the design

Traceability and metrics

- Association of issues with requirements for standards compliance
- Instant metrics and trend analyses to ensure consistency

Continuous integration support

- Support for common continuous integration flows to ensure a clean design stays clean

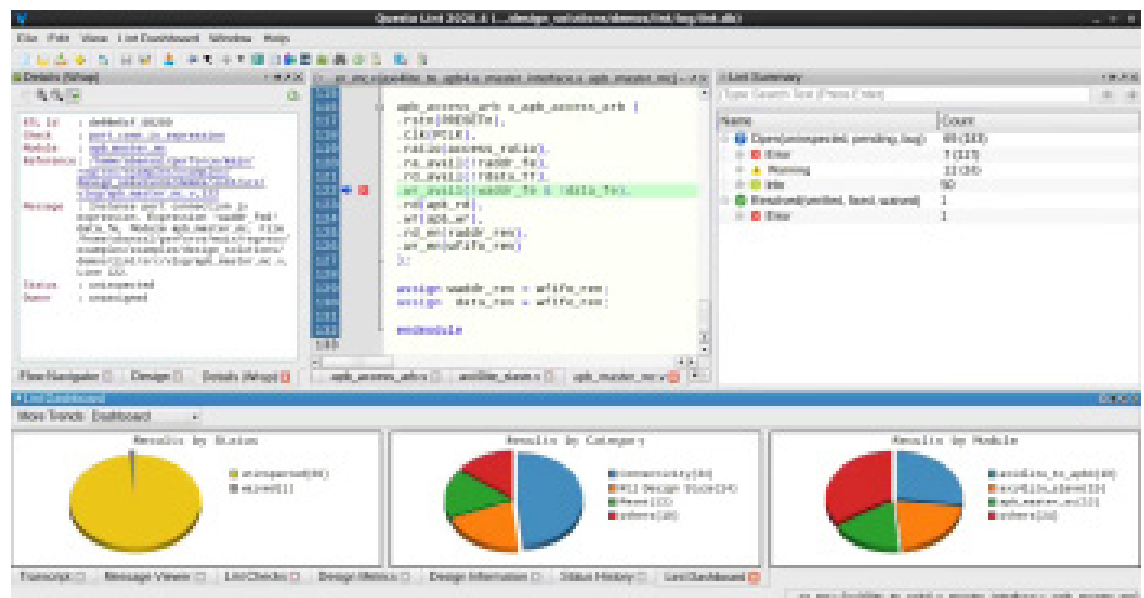
From immediate results to custom methodologies

Architected to provide immediate out-of-the-box results, Questa Lint implements pre-configured methodologies for IP, FPGA, or SoC development. Each of these methodologies offers an array of pre-defined readiness goals, such as floor-planning or synthesis readiness. In addition, there are pre-built checksets supporting industry standards such as DO-254, ISO-26262, or STARC. Once familiar with the tool, you can configure your own methodologies and checks to enable Questa Lint to enforce your development methodology, either through release-focused reviews or through continuous integration flows.

Benefits and Highlights

Immediate productivity — Questa Lint provides pre-defined configurations for specific methodologies and—within those methodologies—pre-defined, development-flow-aligned goals to provide out-of-the-box results. With the addition of intelligent inference capabilities, identifying and applying attributes to your design, Questa Lint provides a fast path to finding issues without any set up or configuration.

Data analysis-based assistance — Using proprietary data-analysis techniques, Questa Lint provides actionable results with low noise. Questa Lint reviews reported issues, then uses its deep understanding of every issue known to provide results different than the inferred intent (as well as those known to cause false violations) to adapt the results. This results in Questa Lint reporting only the issues that need to be fixed, in the order of those that matter most, resulting in actionable results and faster fix cycles.



Using only your RTL, Questa Lint provides intent and quality-focused insight from the first line of code. Questa Lint's metrics and quality scores can be captured over time with trend analysis to ensure that a design that was once clean stays clean. No testbench is required.

Familiar visualization and foundations —

Questa Lint shares the same issue status flow with other Questa Design Solutions tools, providing efficient transitions throughout the analyses in the various solutions. Questa Lint's user interfaces are built on the Visualizer UI capabilities, and the analyses are built upon a common foundation across Design Solutions tools, providing familiarity and commonality within the solution, then beyond to other Siemens products, including simulation, formal verification, and emulation.

Design scoring — Today's development flows require the integration of a great deal of IP, whether it's developed internally or acquired externally. The task of the integrator is challenging, pulling together many pieces that may not have been built to work together. Questa Lint provides a design quality scoring mechanism to enable you to quickly understand which IP blocks are likely to cause issues later. These scores are generated with proprietary algorithms that result in identifications of the blocks that need attention sooner.

Traceability support — Standards-compliant development flows must exhibit both traceability to requirements and a prescribed level of quality. Some standards require the ability to show the progression of quality metrics over time. Questa Design Solutions products leverage Siemens' long running support of these requirements to deliver these features.

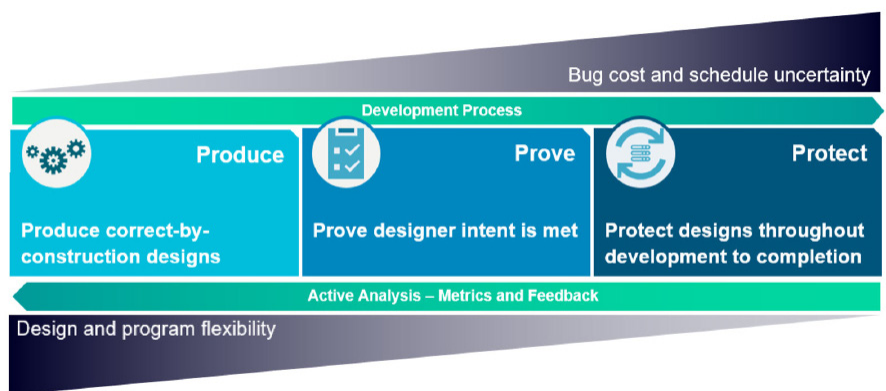
Change-only reporting — With the goal of accelerating fixes, Questa Lint can report only new issues introduced with the latest fix. A change to the design to fix an issue could result in other, new issues. By focusing on only the new issues since the last change, you can quickly identify if your fix is complete.

Team-based collaborative fixes —

Depending on your development flow, you may find yourself with many issues to fix and little time to do so. Questa Lint supports a

collaborative mechanism that allows issues to be assigned to individuals, then tracks the progress of fixes as not just you, but your entire team work together to clean the design.

Continuous integration — Questa Lint integrates into popular Continuous Integration management tools, ensuring that throughout the development process, a design, once proven clean, remains that way.

**Part of Questa Design Solutions**

Questa Lint is part of Questa Design Solutions, an integrated and complementary solution that increases team agility and development consistency by optimizing and automating verification for designers. Questa Design Solutions delivers integrated intent-focused insight from creation to completion. Using only RTL (and UPF and constraints where necessary), Questa Design Solutions find and fix bugs early in the design process when the design and program is still flexible, then preserves the design from unnecessary issues when the cost to address the issue, and the resulting schedule impact, is greater. The solution functions by producing correct-by-construction designs, then proving that the design intent is met, and finally protecting the design throughout the implementation process.

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