# Spec-TRACER™ | Requirements Traceability Management

Traceability Management for Safety Critical Projects

Spec-TRACER™ addresses the objectives defined by safety critical standards and related to traceability data and requirements coverage. Spec-TRACER captures traceability data from miscellaneous design files, verifies it, and produces traceability matrices required for the certification processes.
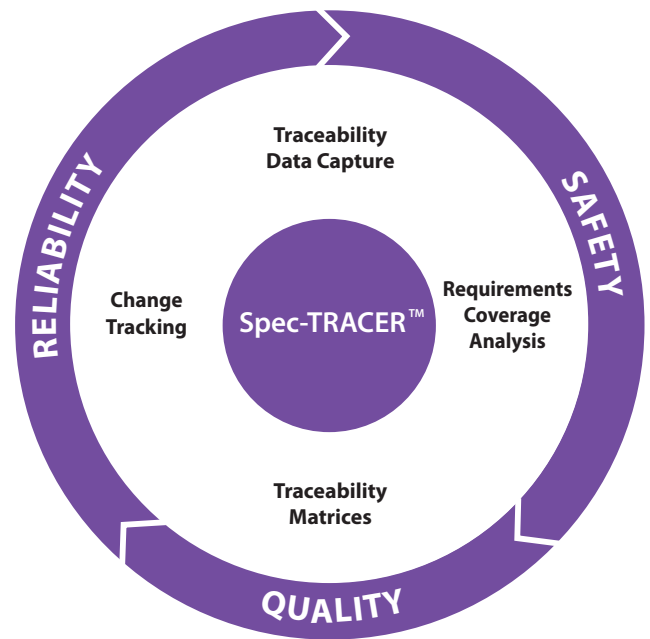
Top Features

- **Traceability capture from miscellaneous sources (Microsoft® Word documents, HDL files, simulation logs, etc.)**

- **Regular expression and document style capture criteria**

- **Plain and hierarchical structure of captured items**

- **Bidirectional traceability**

- **Upstream and downstream traceability matrix reports**

- **Version control friendly configuration file**

Take control of your project data

FPGA and ASIC designs continue to grow both in size and complexity, increasing the number of requirements that must be tracked down to all other project data and activities. Engineers are under pressure to deliver high quality products on time and within budget, yet requirements change frequently during the project lifecycle, impacting other project elements leading to more changes and rework increasing the risk of introducing errors.

Traceability management is the real part of the change management process allowing to track and control all the changes. Spec-TRACER helps companies streamline the process, optimize the development cycle, and reduce risk and costs.

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Key Benefits

DO-254 Compliance

DO-254 enforces a strict requirements-driven process for the development of commercial airborne electronic hardware. For DO-254, requirements must drive the design and verification activities and requirements traceability is an efficient way to ensure this. Spec-TRACER provides traceability reports not only for showing evidence of correlation between requirements, design, and verification activities but also to assure all requirements are implemented and verified.

Requirements Traceability
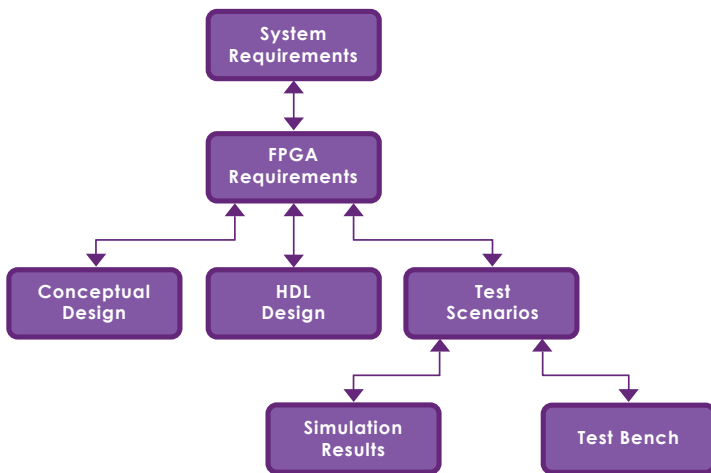
Traceability Capture

Enables several capture methods allowing users to involve Spec-TRACER with their existing flows. Regular expressions, document styles, simple and begin-end tags, plain text and hierarchical structures, upstream and downstream relationships, all these features ensure support for wide range of notations and design standards. Spec-TRACER provides the intuitive configuration with simplified use of regular expression by splitting them into subexpressions.

Project Organization

Project structure, design standards and elements crucial for traceability management may evolve during the project lifecycle, therefore Spec-TRACER does not impose any structure allowing users to define their own configuration. XML-based configuration file designated for maintenance under the version control allows tracking all modifications in the list of artifacts, documents, and files along with parser settings.

Traceability Matrices

Based on captured data the upstream and downstream traceability matrices can be generated for each pair of related project artifacts. Traceability matrices are the essential tool for requirements coverage and impact analysis.

Downstream Traceability Matrix
(FPGA Requirements -> Test Scenarios)

FPGA Requirements			Test Scenarios		
Code	Name	File	Code	Name	File
FPGA-001	Name of fpga-001	fpga requirements.doc	TST-001	Name of test1	test scenarios.doc
FPGA-002	Name of fpga-002	fpga requirements.doc	TST-003	Name of test3	test scenarios.doc
FPGA-003	Name of fpga-003	fpga requirements.doc			test scenarios.doc

Upstream Traceability Matrix
(Test Scenarios->FPGA Requirements)

Test Scenarios			FPGA Requirements		
Code	Name	File	Code	Name	File
TST-001	Name of test1	test scenarios.doc	FPGA-001	Name of fpga-001	fpga requirements.doc
TST-002	Name of test2	test scenarios.doc			
TST-003	Name of test3	test scenarios.doc	FPGA-001	Name of fpga-002	test scenarios.doc

Change Management

Requirements are changing all the time making the challenge in assurance of traceability data consistency. Spec-TRACER manages it by unveiling broken links and storing the all the changes in the database.

*Spec-TRACER™ is part of Active-HDL™ tool.

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