

# ReqTracer

## Managing requirements in your design flow

### Benefits

- Improve overall project quality with automated requirement coverage analysis across multiple engineering disciplines
- Facilitate process improvements and best practices
- Confirm that design requirements have been fully implemented and tested
- Fulfil key regulatory mandates for safety standard compliance

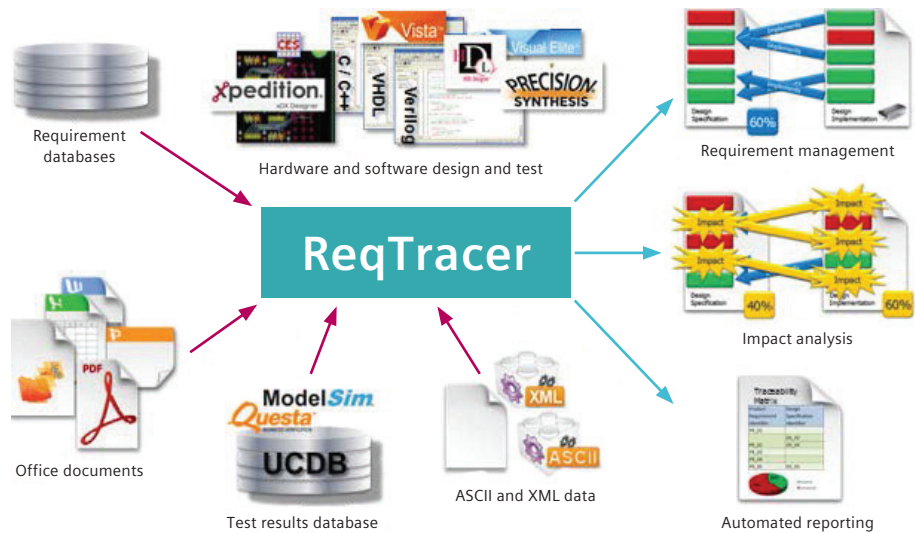
### Features

- Trace requirements throughout the design process
- Assess and manage the impact of requirement changes
- Link all project documents with design, verification, and implementation tools
- Communicate through visualization and intuitive, automated status reports

### A best practice for project management

The ability to completely trace and manage design requirements from specification through implementation and verification is simply "good project management". ReqTracer™ facilitates the deployment of a requirements-driven design flow, while allowing project teams to focus on their implementation and verification work for maximum efficiency. It is only when functionality and

verification results fully meet the requirements, that a project is complete and the project team can confidently put the product into production. This flow is beneficial to all projects, but especially needed in safety-critical applications and mandatory for DO-254 and ISO 26262 certification, where product failure could result in injuries or fatalities. ReqTracer links, manages, and tracks requirements from multiple sources throughout the design process. It also provides automated documentation and reports at any stage and manages the impact of requirement changes, resulting in better control and predictability of design schedules and improved overall product quality.



ReqTracer is an efficient solution for managing requirements traceability and impact analysis across hardware and software project lifecycles.

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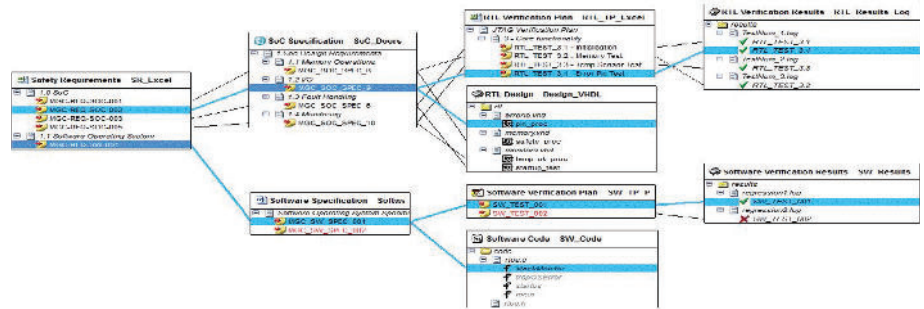
## Safety-critical design

Safety-critical design means “the design requirements exactly match the verified implementation”. ReqTracer can provide the proof needed to deliver end products that meet these requirements and automate requirement traceability for DO-254 certification or ISO 26262 compliance.

Clear, top-down and bottom-up traceability proves verified requirements, traceability of ECOs, and confirms that changes were fully implemented and validated. Associated reports ensure successful audits and reviews.

## ReqTracer in the process

Requirements tracing should be approached proactively throughout the project development process:



### Capture

- Analyze requirement sources in place without a separate database
- Automatically filter requirements. For example: only extract safety-related requirements
- Support corporate and external standards like DO-254, ISO 26262, IEC 61508 and IEC 60601
- Connect authored requirements from many databases, file sources, and formats including:
  - IBM® Rational® DOORS® and RequisitePro®
  - Microsoft® Office, Apache OpenOffice™, Adobe® Acrobat® and Framemaker®
  - ASCII, HTML, XML, XMI, CSV, MIF, and bitmap
- Add documents to the project:
  - User requirements, test, and specification documents
  - RTL, software source code, test-benches, integration tests, schematic, synthesis and constraint files
  - Results from verification and bug-tracking tools
- Integrate with version and configuration management tools plus HTTP and filelist access.

### Tag

- Link relationships and dependencies
- Prevent missing updates using dynamic links
- Reference requirements in text or graphics

### Analyze

- Use built-in checks for traceability errors and warnings
- Customize traceability and coverage checks
- Visually trace all or selected requirements across all documents, top-down and bottom up, through design, verification, and implementation
- Clearly track requirement status
- Analyze traceability across multiple documents and tool domains
- Determine completeness of requirements coverage
- Identify extraneous code
- Get immediate notification of requirement changes, additions, and deletions
- Assess risk to project schedule/cost with upstream and downstream requirement change impact analysis

### Verification closure

- 100% requirements coverage does not mean 100% functional coverage
- Ensure that your tests are actually covering the design requirements
- Link design requirements, hardware and software design, test plans, and verification results into requirements-aware relationships
- Confirm that all design requirements have been implemented and fully tested
- Report coverage levels achieved and pass/fail status
- Validate hardware verification and simulation test results from Questa®'s Unified Coverage Database (UCDB)

### Report

- Simplify design reviews with automatic documentation
- Generate customized reports automatically: traceability matrices, impact analysis, inconsistent requirements, and more
- Generate artifacts during design reviews and safety compliance audits
- Output in a wide variety of formats including: Microsoft Office, Adobe PDF, and HTML

### Change management

- Compare requirement data and traceability information at specific points or snapshots in the project life cycle and generate impact-analysis reports
- Automate change communication within a team

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