# PTC Requirements and Validation Solution

The PTC Requirements and Validation solution helps manufacturing organizations meet customer-specific needs for smarter, more innovative, high-quality products and systems. Powered by the PTC Integrity™ product family, it enables teams to specify, define, verify, and validate requirements across the product engineering lifecycle. This solution is available as a convenient, cost-saving subscription that bundles software and support.

## Capture, manage, and validate requirements over a product's life

Effective requirements and validation practices are more than just an integral part of developing and engineering complex products and systems; they are vital to mitigating risk and ensuring customer satisfaction. Yet many manufacturing organizations struggle to keep pace with the velocity of change, ever-growing number of product variants, and added rigor of overlapping regulatory requirements. All too often, the result is wasteful product rework that increases costs and undermines the predictability of product release cycles.

To address these challenges, organizations in the automobile, aerospace, medical, transportation, and energy sectors rely on the PTC Requirements and Validation solution to deliver compliant, innovative products that meet critical cost, quality, and time-to-market goals.

## Requirements and validation advantages

The Requirements and Validation solution combines requirements and test management with requirements interchange capabilities in a flexible, cost-effective subscription that directly aligns budgets to results.

It offers end-to-end traceability to reduce risk and comprehensive change and audit management to protect strategic assets while simplifying regulatory reporting. Through rich data synchronization, this solution supports safe and flexible collaboration across teams and complex supply chains to speed product delivery and maximize customer satisfaction.

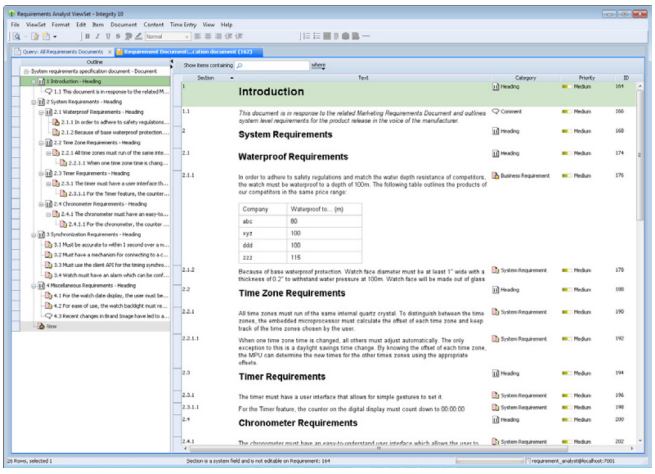



Figure 1: Document view, context-based authoring, rich text, tables, and in-line images.

## What teams accomplish with requirements and validation

- Safeguard strategic assets with complete audit trails of changing, branching, and evolving requirements
- Speed time-to-market with fast access to data content and by optimizing parallel development and the reuse of requirements groups
- Improve product quality and compliance by managing test sessions, assessing the impact of change proposals, and verifying results against requirements to reduce costly errors and rework
- Empower safe, cross-functional collaboration spanning teams and complex supply chains with rich requirements exchange capabilities and comprehensive change management including advanced versioning and baselining
- Simplify requirements interchange between disparate and remote repositories with a secure and repeatable, standards-based ReqIF approach that enables exchanges of large amounts of requirements information on an ongoing and managed basis
- Deploy quickly and seamlessly while maximizing technology investments by integrating with existing requirements engineering tools
- Reduce cost of ownership and align budget to immediate benefits with convenient subscription that prevents the waste of costly software licenses that sit unused on the shelf
- Scale to growth with an enterprise-proven solution used by thousands
- Enable company-wide stakeholders to quickly visualize real-time product and software requirements using PTC Navigate's intuitive role-based apps

## World-class functionality optimizes team performance to drive immediate and future results

### Customer and supply chain integration

The Requirements and Validation solution enables teams to easily share and synchronize rich requirements information across team, product, and vendor boundaries. Rich, bidirectional integration is available with the PTC® Windchill® product lifecycle management solution. Robust support for the Requirements Interchange Format (ReqIF) enables efficient data exchange across teams, divisions, and supply chain partners.

### Advanced configuration management

Fine-grained versioning, branching, and baselining provide advanced support for requirements engineering and variant management. Powerful visual differencing allows authors to easily analyze changes at key points in the lifecycle. Branching of individual and groups of requirements with user-controlled trace propagation resolves the challenges of data duplication in "clone-and-own" approaches. Auditable versioning enables groups of requirements and test assets to be safely associated and reused across product variants and product lines.

### Powerful lifecycle traceability

Easily establish and manage traceability between requirements at all levels, including those located in different documents using traceability matrices and drag-and-drop operations. Trace and navigate from requirements to downstream assets like product information, design features, specifications, models, test plans, test results, and assigned tasks. Quickly view related requirements or product information from either end of the relationship using Requirements and Validation's tight integration with PTC Windchill. Fine-grained, auditable traceability is the foundation for streamlined validation and verification, change impact assessment, and compliance reporting.

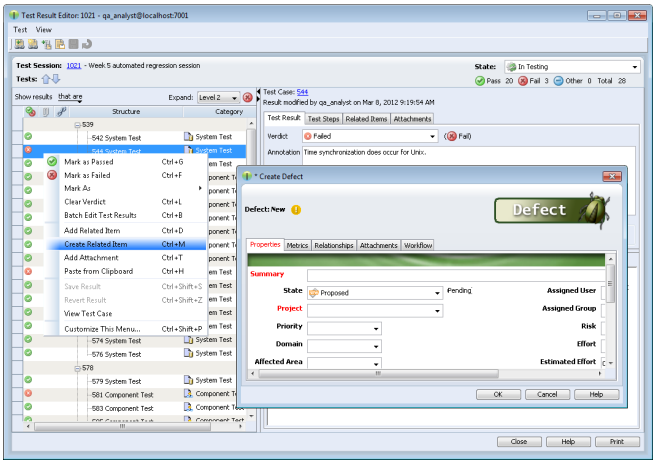



Figure 2: Easily create, manage, and track defects directly related to tests and requirements at any point in time.

### Advanced authoring and collaboration

Manage data more efficiently through the convenience of a familiar interface with rich-text support for document views as well as list and hierarchical views. Requirements and Validation also supports Microsoft® Word and Microsoft® Excel® conflict resolution to optimize team collaboration.

### Streamlined compliance

To improve compliance management and safety and quality reporting, Requirements and Validation provides end-to-end visibility on a secure, tamper-resistant platform with auditable processes and 21-CFR-compliant e-signature support.

## Seamless process and event-driven, server-to-server integrations

Requirements and Validation exposes data through standards-based interfaces, Java™, SOAP, and RESTful web services to provide full lifecycle access and transparency for a more optimized technology value chain. These benefits are reinforced through integrations with popular tools and tailored integration toolsets, rich APIs, and data in PTC Windchill and PTC Integrity™ Modeler™.

## Exceptional enterprise scalability, reliability, and data integrity

With just one system and unified data model to control, you can easily scale from 10 to 10,000 users—while eliminating data redundancy and enhancing stability and security.

## Convenient, subscription-based access

Requirements and Validation bundles software and support in one subscription to simplify budgeting and reduce upfront software costs. With transparent payment schedules, a subscription gives you the predictability and flexibility to align costs to immediate benefits. Plus, you avoid the waste of costly software licenses that never get used. For more, visit: PTC.com/subscription

## Platform support and system requirements

Click here to view the platform support and system requirements documentation.

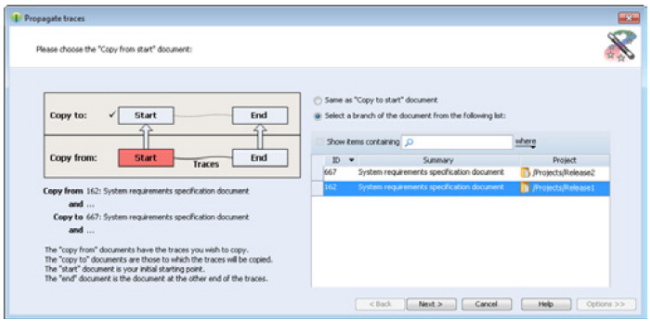



Figure 3: True branching of requirements, including interactive control of trace relationship propagation from the parent branch to the child branch.