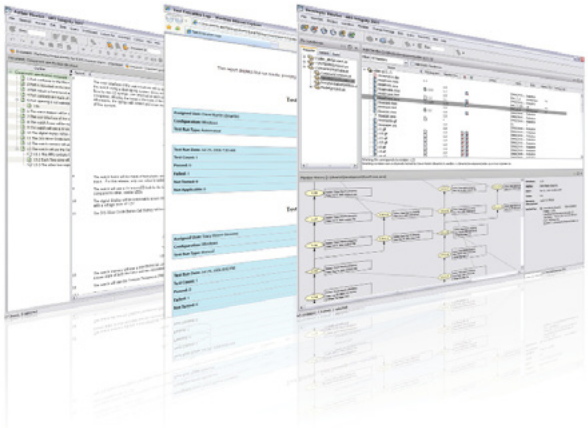
Requirements Management for Software with PTC Integrity

Integrity, a PTC Product, is the only requirements management solution available today built as an extension of the application lifecycle – enabling traceability, change and configuration management over requirements through every stage of the software development process.

Challenges

Requirements may be the most critical aspect of the software development lifecycle. If requirements are wrong or not clearly communicated, the system will ultimately be flawed. Industry experts in software risk mitigation, note that 80 percent of software projects are at risk due to creeping requirements. Managing changing requirements and scope creep must be an integral part of an organization's overall development process, since doing so is vital to mitigating risk on large development projects. However, most current market solutions are decoupled from the development process; they do not foster collaboration between people in the business generating requirements and the software developers building the end-product.

Today's sophisticated requirements management users have a similar yet unmet need to associate and reuse requirements in a parallel development scenario while maintaining traceability throughout the lifecycle. No traditional, first-generation requirements management vendor today can offer capabilities in this area – and none of these vendors have the core product architecture to do so in the near term.



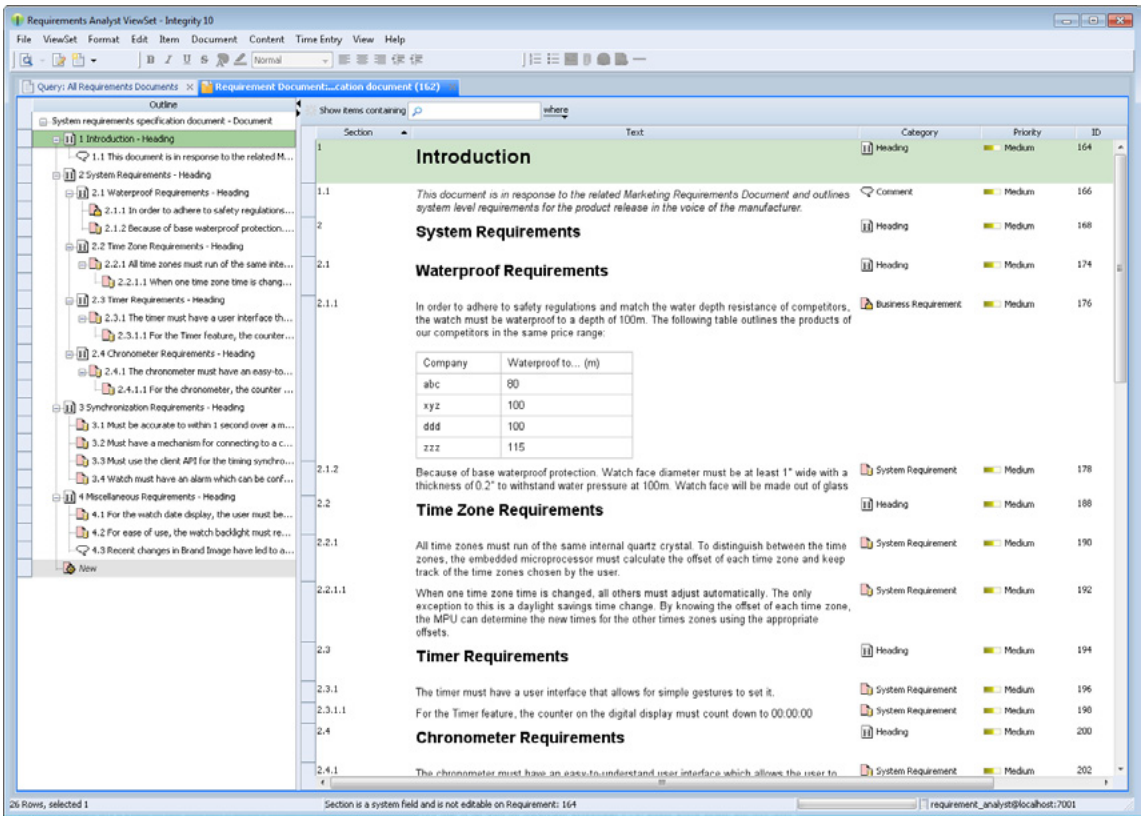
The Solution

You are seeking the best unified requirements management solution — one that fosters collaboration between business users and developers and maximizes efficiency, collaboration and traceability.

Integrity for Requirements Management offers a completely unified approach – one in which requirements are the first step of the continuous process connecting needs to the design, development, testing and deployment phases of the application lifecycle both within a project and between projects across the enterprise. Integrity for Requirements Management, unlike other vendor offerings, is not a siloed, stand-alone tool.

PTC solution extends Integrity's highly flexible and powerful process and workflow engine. PTC is the first vendor to deliver to the market robust support for requirements reuse and persistence, versioning and baselining, as well as integrated change management within a highly flexible authoring and approval environment.

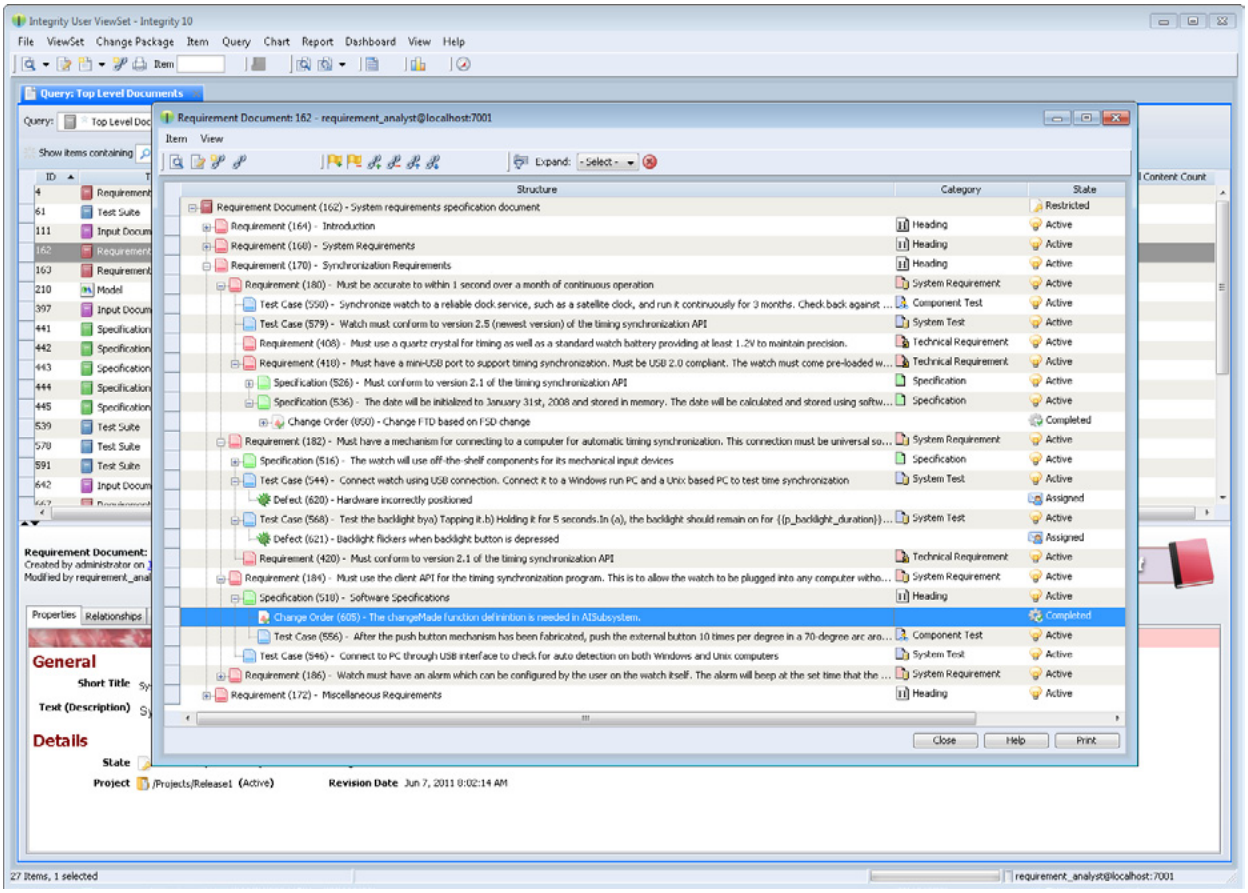
- CIOs and CTOs can achieve greater business alignment and efficiency by ensuring final products and services directly meet business needs.
- Business Analysts can easily author requirements and automatically communicate with development teams using PTC's document, list or hierarchical user interfaces or through integrations with common business tools such as Microsoft Word and Excel.
- Business Managers can be assured that requirements are approved and authorized and view an audit trail of all changes related to a specific requirement.
- Development and Quality Assurance Managers can better manage risk through the software development lifecycle, changing requirements designs and tests.
- Project Managers can realize productivity and efficiency gains as well as shorten project schedules and time-to-market through reuse of individual requirements or sets of requirements.
- Developers gain real-time notification of changes to requirements and can directly connect their programming activity back to business needs and goals.
- Executives gain visibility into project execution through metrics and real-time status reports and dashboards.
- Teams across the Application Lifecycle collaborate more effectively and remain in constant communication through the use of a single Application Lifecycle Management (ALM) platform and a unified process.



Document view supports structure, context-based authoring, rich text, tables and in-line images.

Features and Benefits

- Unified requirements change management allows individual requirements or documents to follow their own lifecycle path. Requirements can evolve, branch or change where authorization permits, while Integrity maintains a complete audit trail of every change.
- Document view and rich-text support enable Business Analysts to author requirements in a traditional, familiar document view in addition to the list and hierarchical views.
- Requirements reuse and persistence offers a unique capability, enabling for groups of requirements to be associated and reused in a parallel development scenario.
- Requirements versioning and baselining provide the ability to securely identify a point in history for a requirement or document, navigate the system according to that baseline, and begin new work with the baseline as a starting point.
- Process enforcement capabilities tied back to requirements protect the project schedule by restricting the development of features and the preparation of test plans until requirements have reached an appropriate state. A rich and open API enables integration with existing enterprise technologies.
- Conflict resolution enables multiple users to contribute to a single item or requirements document, notifying authors of change and resolving conflicts upon submission of edits.
- Seamlessly trace and navigate interactively between documents and through various levels of requirements to design features and specifications, assigned tasks, testing and deployment activities, and view activity in context with associated source code changes – all within in a single system and user interface.



Tracing requirements through the downstream lifecycle to delivery, Integrity allows for tracing of relationships from requirements to source code.

- Powerful querying, charting, reporting and dashboard functionality provide management with visibility into requirements progress and project status and enable users to mine data directly from the system to monitor such key performance metrics as requirements churn and rework.
- Association of all development artifacts from source code to documentation to test plans directly to the related requirement is essential for traceability – and a value-add for organizations that must withstand audit scrutiny.
- Suspect link flagging, automated email notification and reporting that capture changes to requirements and notify appropriate personnel — including business users and developers — of possible impacts.
- Historical reporting that demonstrates to business users and project managers how a single requirement, a complete document or the entire project has changed over time.
- Organize requirements logically, provide traceability and assess the impact of requirement changes with a hierarchical structure of requirements.
- Flexible and powerful workflow with approval cycles ensures that only authorized personnel can alter or add requirements.
- Integration with Microsoft Word and Microsoft Excel enables easy import and translation of business-based requirements prescribed in these tools into the Integrity repository.

Integrity Business Unit Locations

North America
1 800 613 7535

United Kingdom
+44 (0) 1252 453 400

Germany
+49 (0) 711 3517 750

Asia Pacific
+65 6830 8338

Japan
+81 3 5422 9503

integrityinfo@ptc.com

For more information visit: PTC.com/products/integrity

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