Integrated Product Change Management from IBM

With the dramatic surge in new product development programs and the rapid changes in the global business environment, it is likely that your enterprise is experiencing:

- Increasing complexity and accelerating changes
- Unrelenting financial pressures
- The need to manage risk better
- Pressures to comply with key engineering and design processes
- Increasingly organizationally and geographically distributed teams
- The demands for more innovative products to grow your business

As a result, your organization is likely feeling the pressure to get more products into the pipeline faster. At the same time, the more versions, team members and sites involved in product delivery, the greater the risk of product quality issues and project delays.

Integrated product change management can help you meet these challenges.

What is integrated product change management?

In a nutshell, integrated product change management synchronizes changes, no matter where they are initiated. It includes:

- Requirements management and system design for all your systems, down to the component level

- Integration of requirements, configuration and change management with product life cycle management

Integrated product change management fundamentals

Product changes occur throughout the development life cycle. They come from every part of your enterprise—from marketing to customer support and even from keeping pace with competitors. IBM® works with major MCAD and ECAD vendors to integrate different development environments and synchronize the product change management process.

With IBM Rational® integrated product change management solutions, you can manage change in the various disciplines— software, electronics and mechanical—to ensure strong collaboration and track the impact of change wherever and whenever it occurs. You can also:

- Reduce the time it takes to propagate changes throughout your entire design team.

- Reduce turnaround time in design and defect resolution.

- Reduce the amount of "missed" changes that are discovered late in the project.

- Improve the management of multiple engineering disciplines.

- Increase the visibility of schedules, including impact of requirement and product changes.

- Manage project costs better.

- Make the most of your existing process investment.

Introducing IBM Rational integrated product change management solutions

With our integrated development products, IBM delivers the technology that supports change management for all disciplines during the product development life cycle:

- **Telelogic Change™** transforms your efforts to manage change efficiently and integrates easily with Telelogic Synergy and other products to

provide an end-to-end change management solution.

- **Telelogic Synergy™** helps software development teams work faster and easier by increasing communication and collaboration.
- **Rational ClearQuest®** provides defect tracking, process automation, reporting and life cycle traceability for better visibility and control of the product development life cycle.
- **Rational ClearCase®** provides sophisticated version control, workspace management, parallel development support and build auditing to improve productivity.
- **Telelogic DOORS®**, the market- and technology-leading family of solutions for **requirements definition** and **requirements management**, improves quality by optimizing communication and collaboration and by promoting compliance and verification.

Telelogic Change

Telelogic Change is a Web-based, change management solution for request tracking and reporting that easily integrates with existing development and application environments. Its central repository harmonizes your communication with change sources and application life cycle management products and its enterprise change management process provides consistency and change request tracking throughout your organization.

With its flexible change management capabilities, you can automate processes for tracking and managing changes to business goals, IT processes, product requirements, systems and embedded software, software applications and Web sites. This helps you:

- Increase quality by reducing the risk of undesirable changes being implemented.
- Improve accountability by comprehensively tracking all change requests.

Telelogic Synergy

Telelogic Synergy is a task-based configuration management solution that:

- Accelerates release management and build management processes
- Maximizes the efficiency of limited development resources

- Unites distributed development teams

Synergy offers a flexible distributed repository and a proven, team-oriented workflow approach to software development. It takes change tools beyond simple change tracking and version management to provide comprehensive life cycle control for your organization's software development assets. Using the Synergy integrated central database, distributed teams can be confident that they are all working from the same page. The result: greater productivity, higher quality products and faster time-to-market.

Rational ClearQuest

IBM Rational ClearQuest change management software enables you to manage your software life cycle more effectively with:

- Real-time reporting and process enforcement to improve project visibility and control
- Automated workflows and e-mail notifications to enhance team communication and coordination
- Test management that unifies development and testing activities, from planning through results, for improved software quality
- Access control, electronic signatures, repeatable processes and audit trails to simplify compliance management
- Web interface for easy access from virtually anywhere
- Integration with requirements, development, build, test, deployment and portfolio management tools to facilitate rapid response to change

With ClearQuest, you have access to the information you need to make better decisions. You can more effectively manage tasks and schedules and respond rapidly to customer needs. The automated workflows control and enforce development processes—from requirements definition through production—and help improve team communication and coordination. By making process enforcement visible, Rational ClearQuest helps your project teams stay focused on their ultimate goal—delivering high-quality software on time.

Rational ClearCase

IBM Rational ClearCase software balances your development team's need for flexibility with your organization's need for control:

- It provides controlled access to software assets, including

requirements, design documents, models, test plans and test results.

- Parallel development support, automated workspace management and baseline management enable you to create applications rapidly.
- Secure version management and reliable build auditing help ensure high-quality code.
- Development and integration models, private workspaces and public integration areas let you work independently, yet collaborate effectively with your team.
- User authentication and audit trails help your organization meet compliance requirements with minimal administrative hassle for you.

With access virtually anytime, anywhere, Rational ClearCase software gives you the freedom to work efficiently where and when you need.

Telelogic DOORS

Telelogic DOORS is a multi-platform system that captures, links, analyzes, traces and manages changes to requirements. It also helps ensure that what you develop conforms to requirements and complies with regulations. As a result:

- It improves collaboration by providing greater visibility of your project goals.
- It ensures conformance to contracts and compliance to regulations.
- You can respond to changing customer needs effectively and under control.
- You can deliver the high quality systems and software your customers need, on time and within budget.

DOORS has proven itself on some of the world's most challenging projects, in some cases managing thousands of requirements and traceability links. It can do this with features such as:

- Comprehensive traceability analysis capabilities that help ensure that no requirement is overlooked
- Change notification that ensures that changes are not missed and that their effects can be thoroughly analyzed
- Integration with popular design, development and test environments for complete life cycle traceability

- An intuitive document-oriented interface that is easy to adopt

How integrated product change management works

When you integrate the individual components of the Rational integrated product change management solution, you get comprehensive change and configuration management from beginning to end. Telelogic Change interfaces quickly and easily with Telelogic Synergy, DOORs and Rational ClearCase.

For example, when Change is integrated with Synergy, you can:

- Link change requests to implementation tasks such as an individual's work assignment.
- Create configurations based on completed change requests.
- Generate top-down and bottom-up reports.

And, when you integrate Change with DOORS, you can:

- Import approved user requirements captured in Change to DOORS.
- Manage change requests made against requirements.
- Enjoy full traceability between requirements, engineering change requests and the file changes made in development.

Meanwhile, the Change and ClearCase integration uses the Change interface to track and report changes to software assets managed in ClearCase. Activities are linked to change requests so that you can:

- Maintain traceability from change request to activity to ClearCase artifacts.
- Query assigned activities.
- Report activity progress.

Finally, the integration of Rational ClearQuest and DOORS tracks a change request through its entire life cycle, providing status information on DOORS artifacts affected by their implementation such as requirements and tests. It improves coordination of the change control process for projects that use DOORS for requirements management and ClearQuest for change management by removing time-consuming and error-prone manual processes.

Integrated Product Change Management

transparent *integrated presence*
wikis OPEN real-time reporting
chat automated hand-offs Web 2.0
custom dashboards automated data gathering
EXTENSIBILITY *Eclipse plug-ins*
services architecture FREEDOM TO CREATE
TEAM SERVER

For an example of how this all fits together, consider the case of an aerospace company that is developing a new aircraft. The company needs to manage and coordinate the internal systems engineering and development activities of the new aircraft with the activities of subcontractors that are distributed over different sites, while being innovative, working faster and keeping costs down. Some of their challenges include:

- Making sure the entire team communicates their priorities
- Notifying the entire team about changes
- Making it easy for everyone to know the status of the project
- Ensuring that all aspects of the systems involved are compliant with industry and engineering standards

IBM integrated product change management can easily tackle these challenges. There are several options for handling the changes to the software aspect of the project:

- The integration of Telelogic DOORS, IBM Rational ClearQuest and Rational ClearCase for Unified Requirements and Change Management
- The integration of Telelogic DOORs, Telelogic Change and Synergy
- Eclipse-based desktop integration

For managing the changes in the mechanical and electrical portions of the aircraft, the company can use existing products with point product integrations. To manage and track

changes that span all disciplines involved in the development of the aircraft, the company can use the capabilities provided by an integration of DOORS, ClearQuest, Change and Rational Team Concert (RTC based on Jazz), which is Rational's new technology platform for collaborative software delivery.

Why IBM for integrated product change management?

IBM can deliver the tools and the specialized global development, sales, services and support necessary for comprehensive, successful integrated product change management. We are a leading provider of solutions for automating and supporting best practices—from the powerful modeling of business processes and enterprise architectures to the requirements-driven development of advanced systems and software.

Using our integrated platform for systems and software delivery and our process and best practices support, we can help you integrate your systems domain with your IT domain, so that you can align product development life cycles with business objectives and customer needs. This helps you improve quality and predictability dramatically while significantly reducing time-to-market and overall costs.