Software Engineering Lifecycle Solution

Presented To
Configuration Management Working Group

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MKS
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Objective

Key areas of focus to include:

- Complete traceability of software assets through the entire development process
- Project Management control and visibility across global development activities
- Process automation as a single entity and data model
MKS Overview

- Provider of Application Lifecycle Management (ALM) solutions
- Strong Global 1000 penetration
- 80,000 seats of enterprise SCM since July, 2001
- GSA Contract #GS-35F-5192G
- Professional Services
  - CMMI quick-start workshops
  - Class room education courses
  - On-site professional Services
- Positioned as a Leader in Gartner’s Software Change and Configuration Management Magic Quadrant, 2008.
The MKS Organic Approach

Break down IT silos with a single system to manage an application lifecycle from inception to retirement

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**Drive** productivity

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**Enable** more visibility

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**Control** processes
The MKS ALM Solution

- Application Lifecycle Management
  - Portfolio Management
    - Reporting
    - Metrics
    - Data Analysis
  - Requirements Management
  - Development
  - Test Management
  - Release Management
- Enterprise Repository
Advanced Capabilities in Every Discipline

**MKS Source**
- Managed Workspaces
- Change Packages
- Central Repository
- Projects and Members
- Reuse
- Distributed Development
- Security
- Parallel Development
- Visual Differencing
- Drag and Drop Merging
- Metadata
- Release Management
- Versioning
- Checkpoints, Labels
- History Tracking
- Audit Logs
- Keyword Expansion
- Migration Tools
- Online Help
- All File Types

**MKS Integrity**
- Any Process or Workflow
- Relationships
- Approvals, Reviews
- User Defined Metadata
- Digital Signatures
- To-do’s
- Notification, Escalation
- Groups, Roles, Permissions
- Lifecycle Traceability
- Audit Logs
- Reporting, Dashboards

**MKS Test**
- Test Suites
- Test Cases
- Automated Execution
- Automated Results Coll.
- Test Exec. Tool Integrations
- Lifecycle Traceability
- Reporting, Dashboards

**MKS Deploy**
- Staging Areas
- Incremental Push
- Rollback
- Bill-Of-Materials
- Pre, Post-Operations
- Lifecycle Traceability
- Reporting, Dashboards

**MKS Requirements**
- Baselining, Differencing
- Lifecycle Traceability
- Impact Analysis
- Reuse, Persistence
- Document & Item Authoring
- Parallel & Collaborative Auth.
- Drag and Drop Structuring
- Reporting, Dashboards
MKS Integrity – ALM Coverage

Unified ALM Data Model

Test Management
- Test Spec
- Test Case
- Test Run

Requirements Management
- Req Doc
- Requirement
- Change Request
- Change Order
- Change Package

Project Management
- Project
- Feature
- Build

Build/Release Management
- Build
- Deploy Request
- Change Package
- Source Code

Source Code Management
The MKS Paradigm
A Day in the Life of a Typical Program

Senior Executive: What is the Trace status of the Tracking Application?

Program Manager: I’ll have that status for you by COB today.

Requirements Team

QA Test Team

Software Developers

SYSTEM
Branch chiefs, please provide me a status ASAP.

It takes a week to build a current RTM.

I emailed you the defects we found yesterday.

Did you test our new build yet?
A Day in the Life using MKS Integrity

The trace report is in MKS, I'll just send him a URL.

Program Manager

All of the Requirements are in Integrity.

Requirements Team

All the information I need is in one place.

CMMI Appraiser

That requirement you just changed will shorten dev time.

Software Developers

The test plans and cases are tied to the Requirements.

QA Test Team

MKS Integrity

Req
Test
Code

CBKW

SYSTEM
MKS Integrity – A process/workflow centric approach

Object

- States
- Transitions
- Attributes/Fields
- Layout
- Relationships
- Change Packages
- Attachments
- History
MKS Integrity comes with standard fields and allows for creation of custom fields.

Relationships are the power that provide traceability.
Integrity Objects have their own unique workflow

Flexible workflows are fully configurable allowing teams to automate existing processes and adjust process control from relaxed to rigid.
Project Management

- Visibility to all Project artifacts throughout the lifecycle
- Supports collection of metrics such as those used in EVM
- Information in the system can generate user-defined reports
- Supports integration with MS Project, Excel, and Word
- Dashboards and Reports provide Managers who are not technical an end-to-end view of the program’s status and health.
Requirements Management

- Requirements have their own lifecycle enabling records of approvals, changes, who and when changes were made.

- Modification to requirements can be controlled by allowing change to take place only in certain lifecycle states and by a certain user or group. Versions are incremented automatically and the most current are always displayed.

- Traceability is maintained through relationships.
Product Design and Development

- Physical code view of an application is traceable to its logical view in Integrity through a hierarchical tree. This tree represents the entire application lifecycle.

- Check-in/check-out (version control) is native to Integrity and supports multiple languages and many of today’s popular programming tools such as Microsoft Visual Studio, Eclipse, Idea, IBM Websphere.

- Code reviews can be enabled or disabled for each project individually.
Test Management

- MKS Integrity provides the capability for creation of Test Plans, Test Cases, Test Suites in support of unit, string, and system testing.

- All test management objects are traceable to both requirements and down to the unit of code developed to support the required functionality.

- MKS Integrity supports a variety of automated testing tools such as QTP, iTKO LISA, and Winrunner.

- Complete history and audit trails are maintained.
Change and Configuration Management

- Manage and Control changes throughout the complete lifecycle
- Single entry of data is achieved by copying common fields when creating related Objects
- Workflow capability automates the change lifecycle and allows for multiple iterations if desired
- Version control is built in
- All changes have their own unique ID
- Complete audit trails of what was changed, by whom, when, and who approved it
Release Management

- Inter-related objects and their workflows facilitate control
- Process automation and event triggers ensure all work items are in an approved and complete state prior to release
- Integration with MS Project ensures appropriate resources are managed
- Visible to entire development and operations teams from moment of inception to facilitate planning
End2End ALM Enables Productivity, Visibility and Compliance

Delegation of decision making drives productivity & short cycles

Real time metrics maintain control and aid compliance

Sr. Exec.

Program Manager

Project Manager

Business Analysts

Developers

Quality Assurance

Operations

End2End platform supports peer to peer collaboration for better visibility

Peer-to-Peer Visibility
Summary

- **MKS enables you to:**
  - Gain control and visibility across global development activities
  - Manage the SDLC process as a single entity and data model
  - Focus on alleviating immediate challenges

- **Benefits:**
  - Develop and deliver systems that accurately reflect the business requirements to be fulfilled
  - Better communication & collaboration amongst stakeholders
  - Complete audit trail, documenting all activities associated with the development lifecycle
  - Less time routing “paper documents” through the process

- **Bottom Line**
  - Reduces cost, and provides a better “on schedule” product