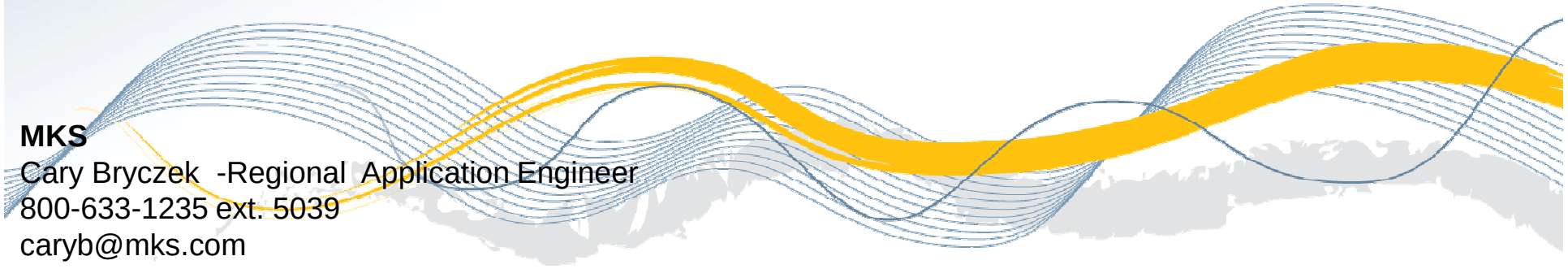
# Software Engineering Lifecycle Solution

## Presented To
## Configuration Management Working Group

March 11, 2008



**MKS**
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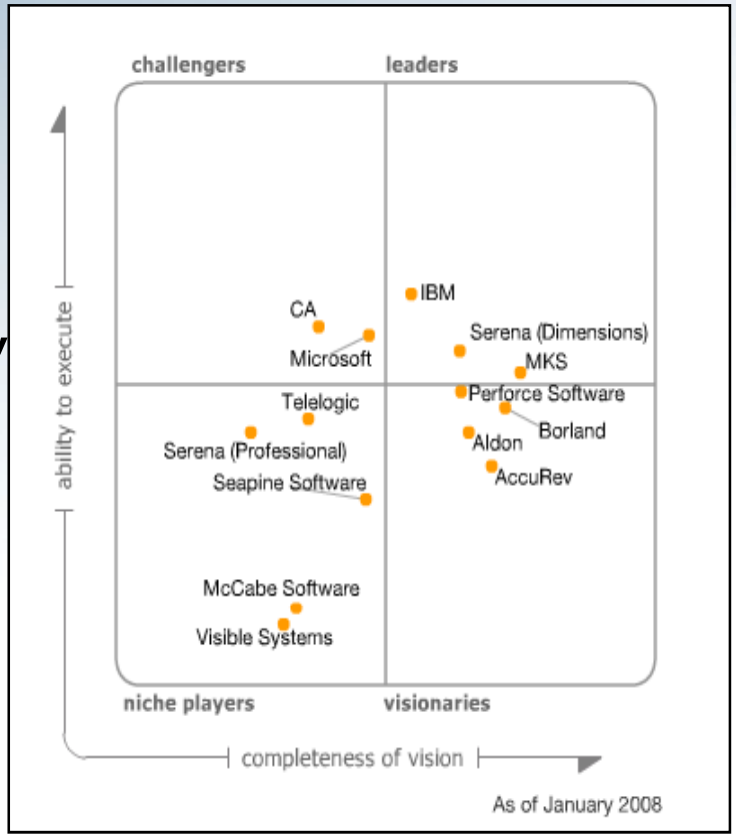
# Objective

**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

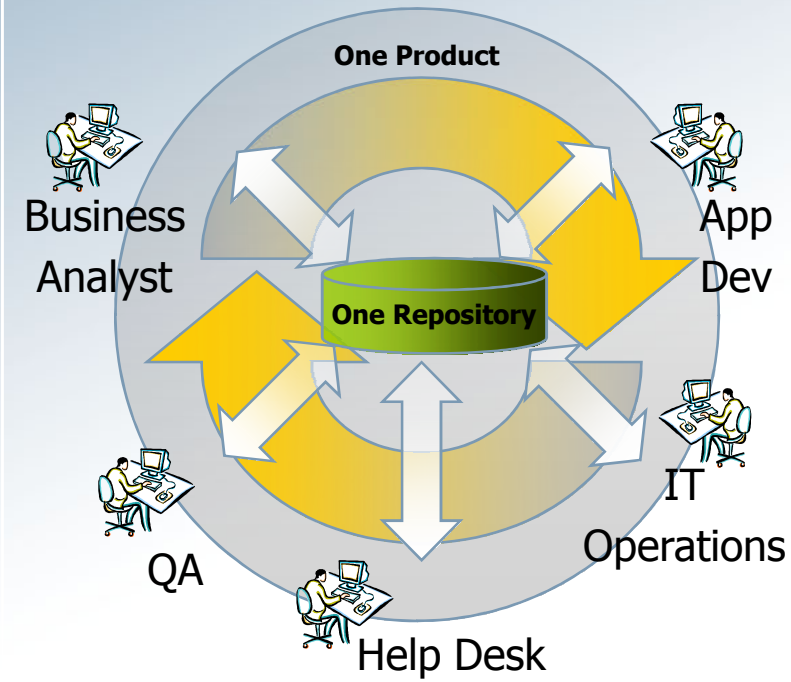
# MKS Overview

- 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**

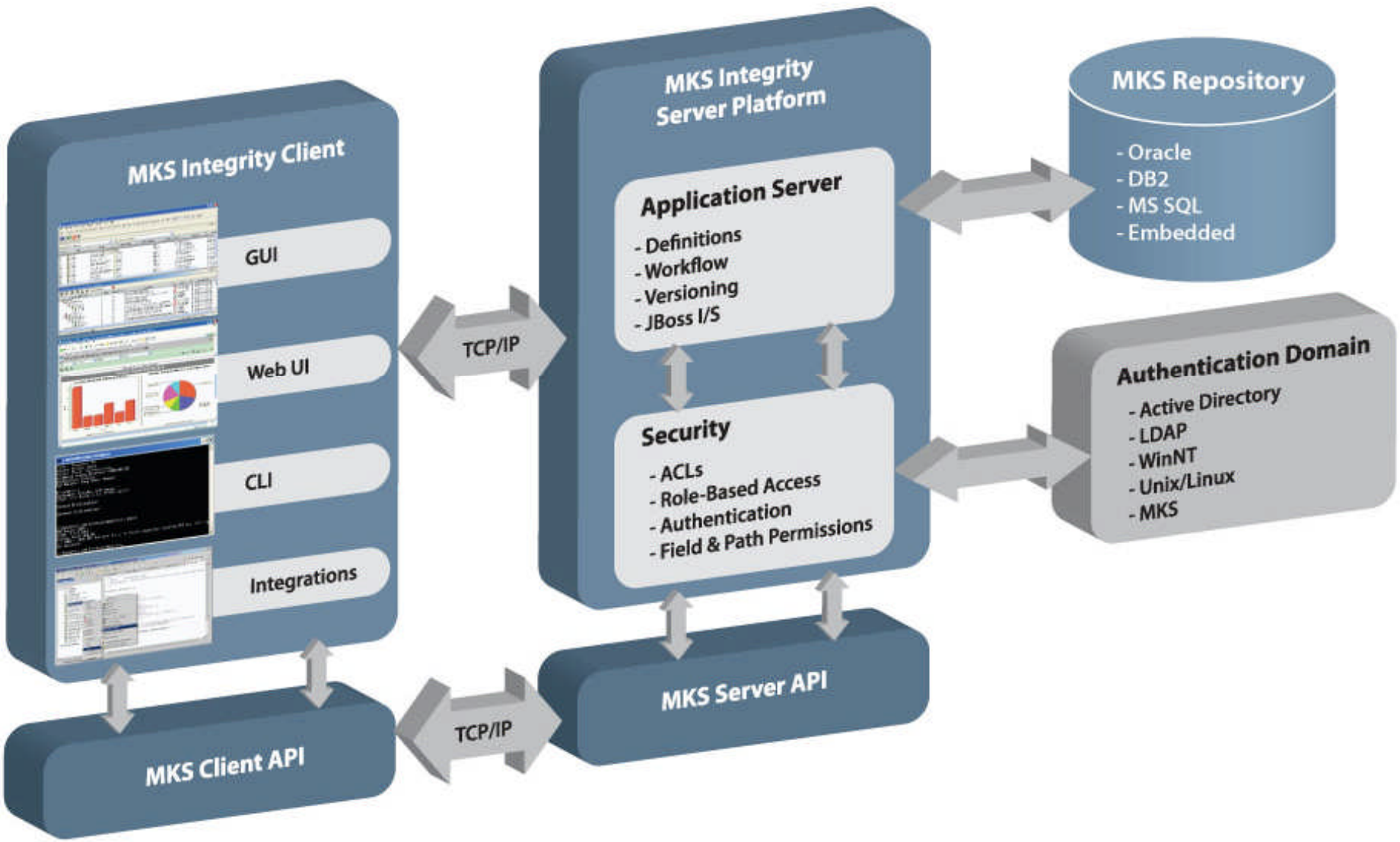



**Drive productivity**

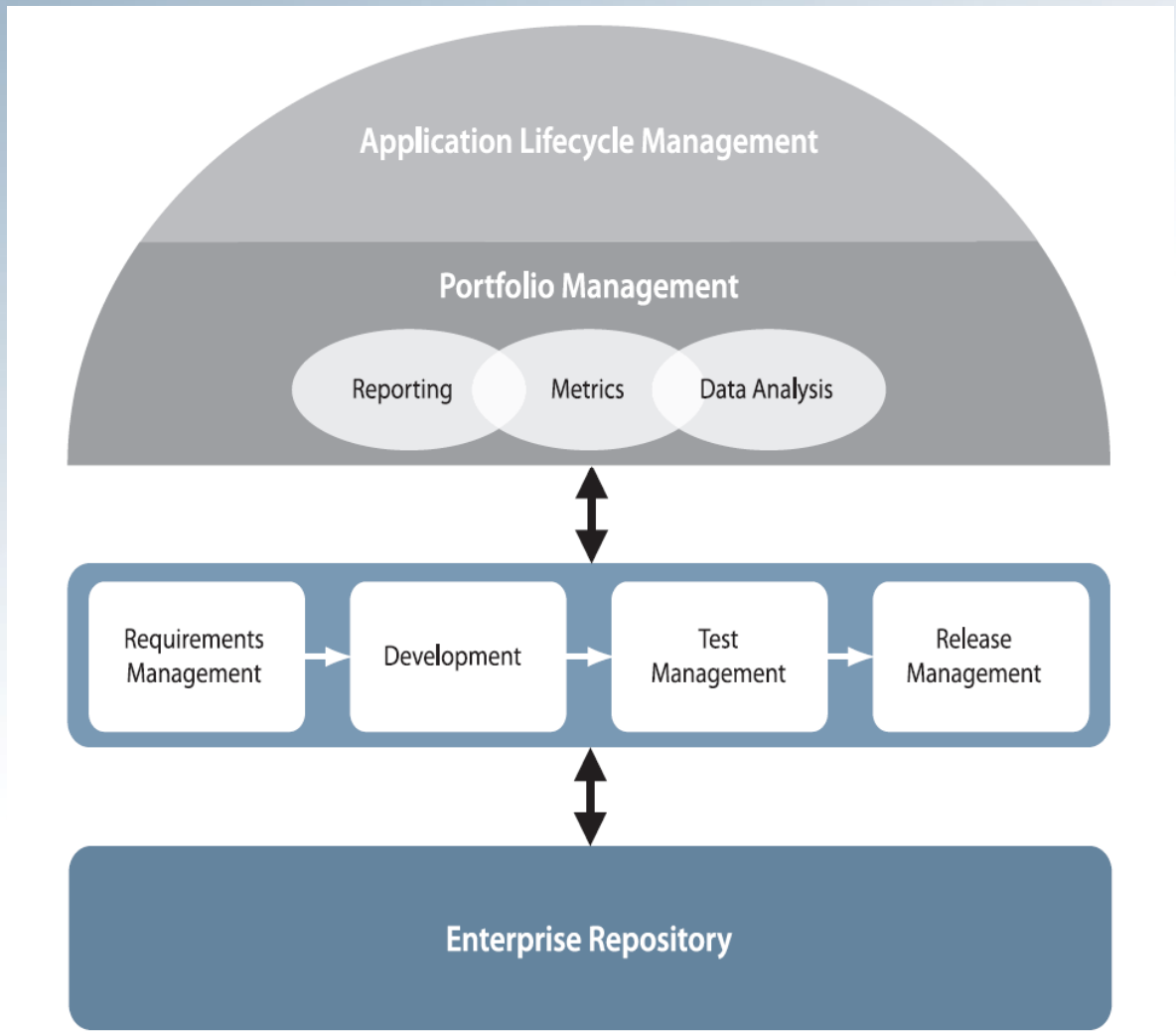
**Enable more visibility**

**Control processes**

# MKS Enterprise Architecture



# The MKS ALM Solution



# 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

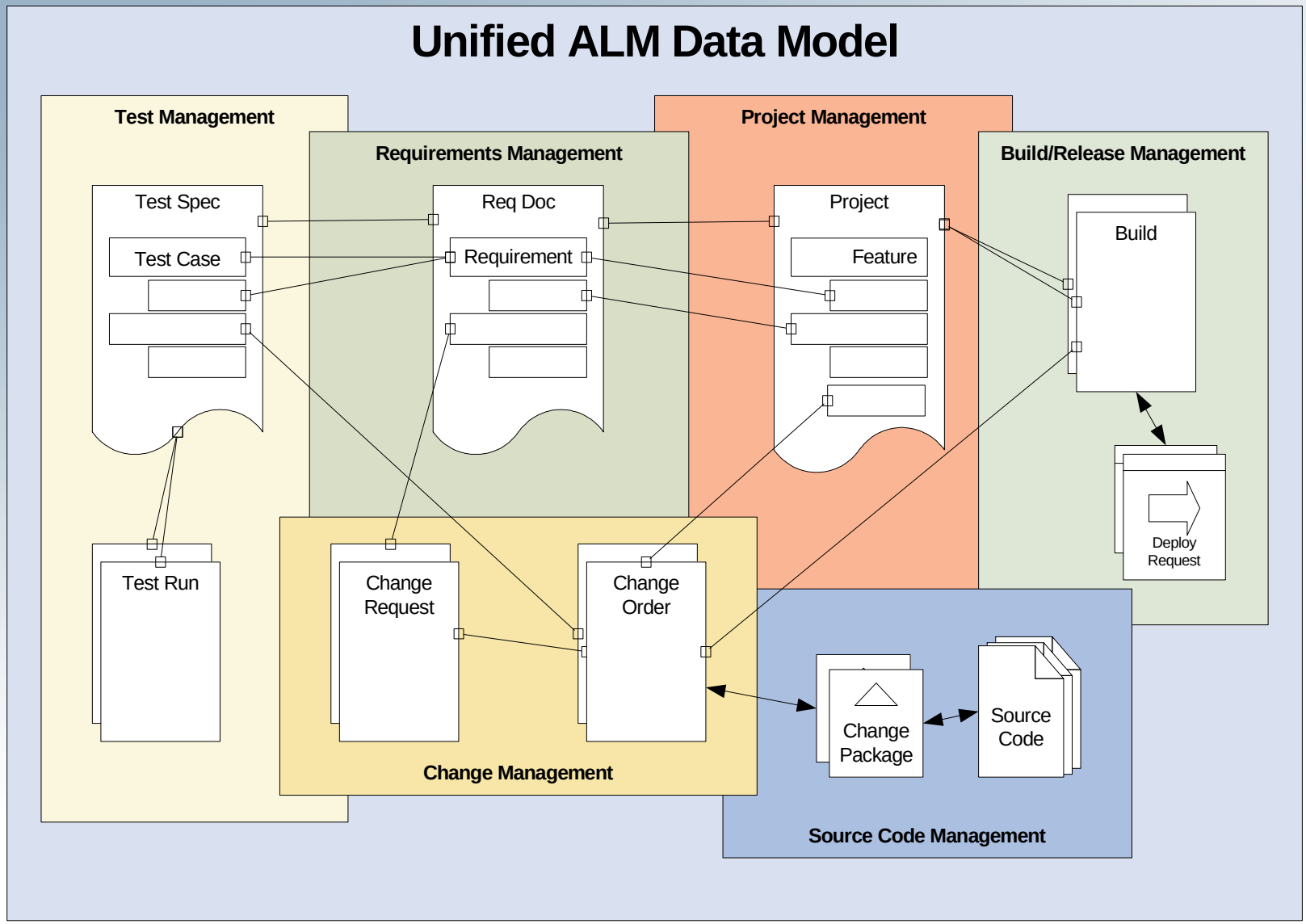
- **MKS Integrity**
- Any Process or Workflow
- Relationships
- Approvals, Reviews
- User Defined Metadata
- Digital Signatures
- To-do's
- Notification, Escalation
- Groups, Roles, Permissions
- Lifecycle Traceability
- Audit Logs
- Reporting, Dashboards

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

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

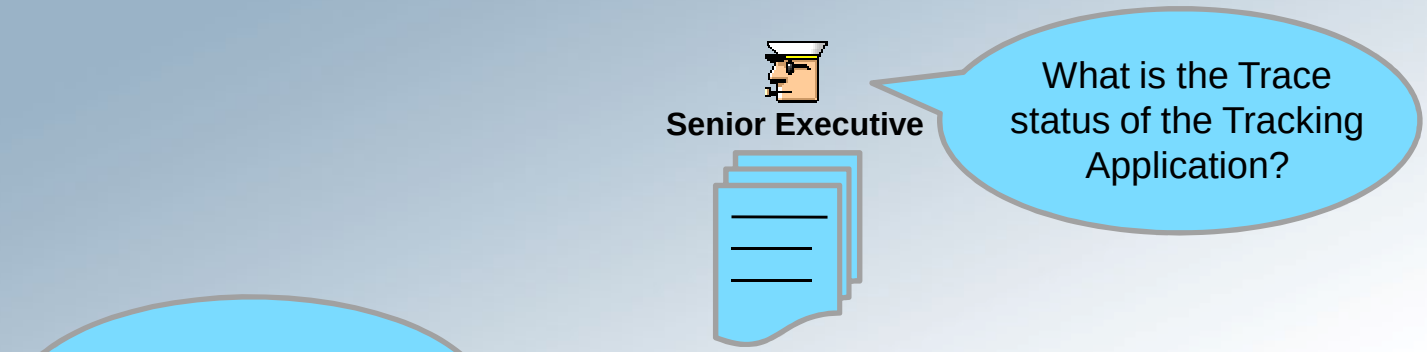
- **MKS Deploy**
- Staging Areas
- Incremental Push
- Rollback
- Bill-Of-Materials
- Pre, Post-Operations
- Lifecycle Traceability
- Reporting, Dashboards

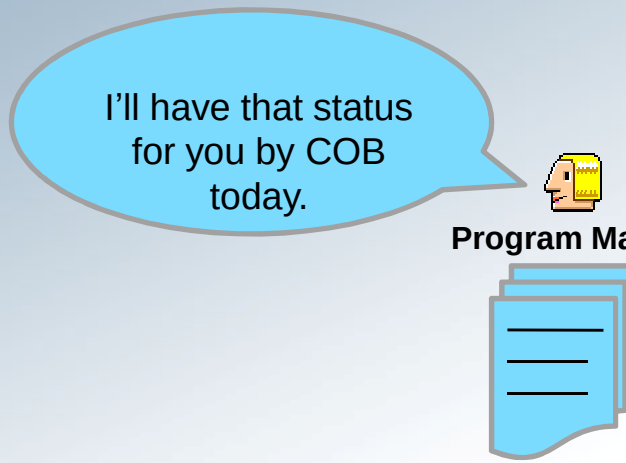
# MKS Integrity – ALM Coverage

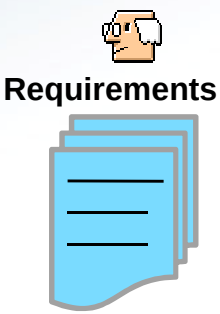


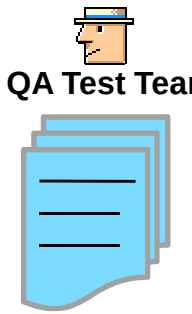
# The MKS Paradigm

# A Day in the Life of a Typical Program



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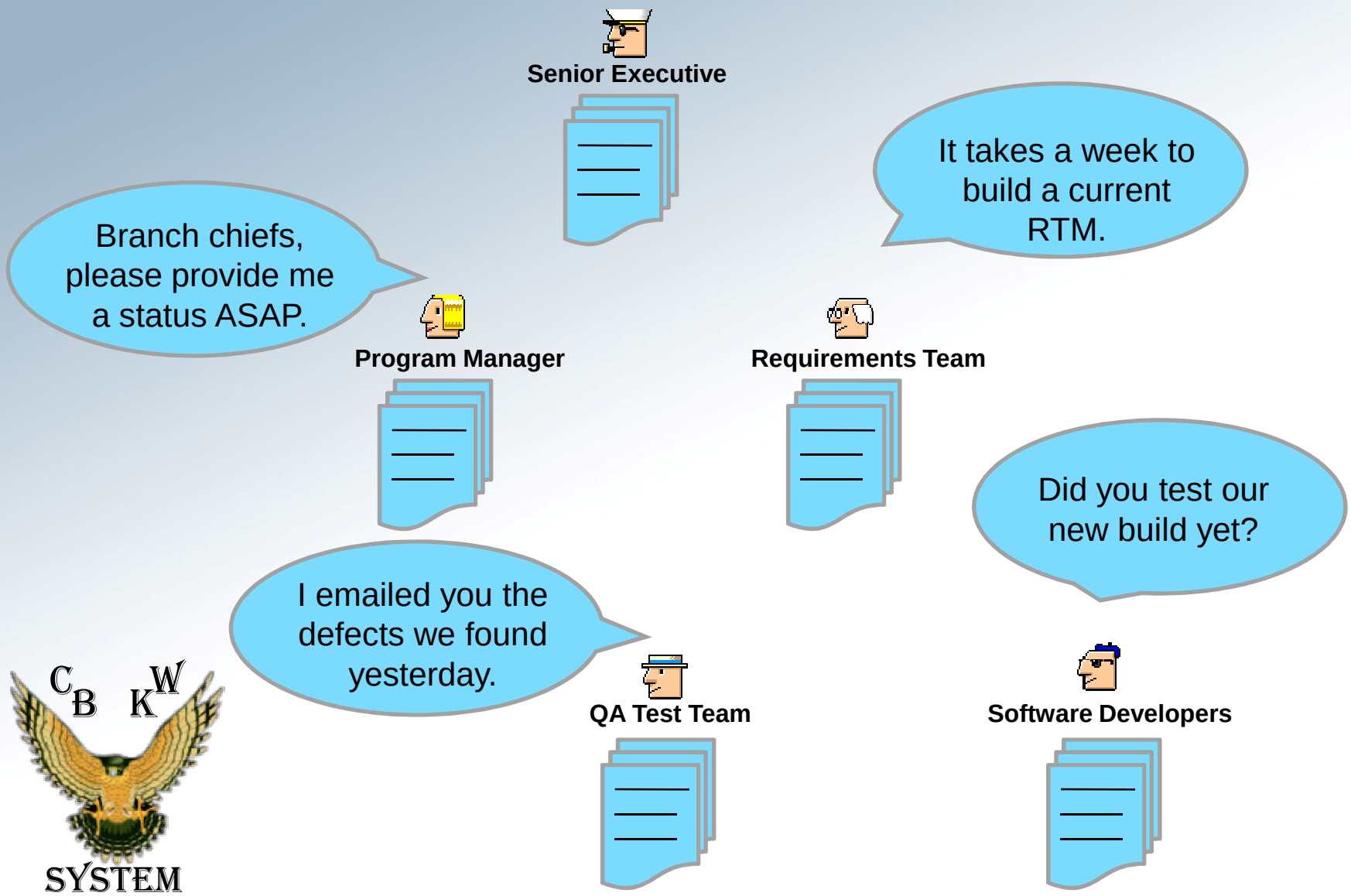
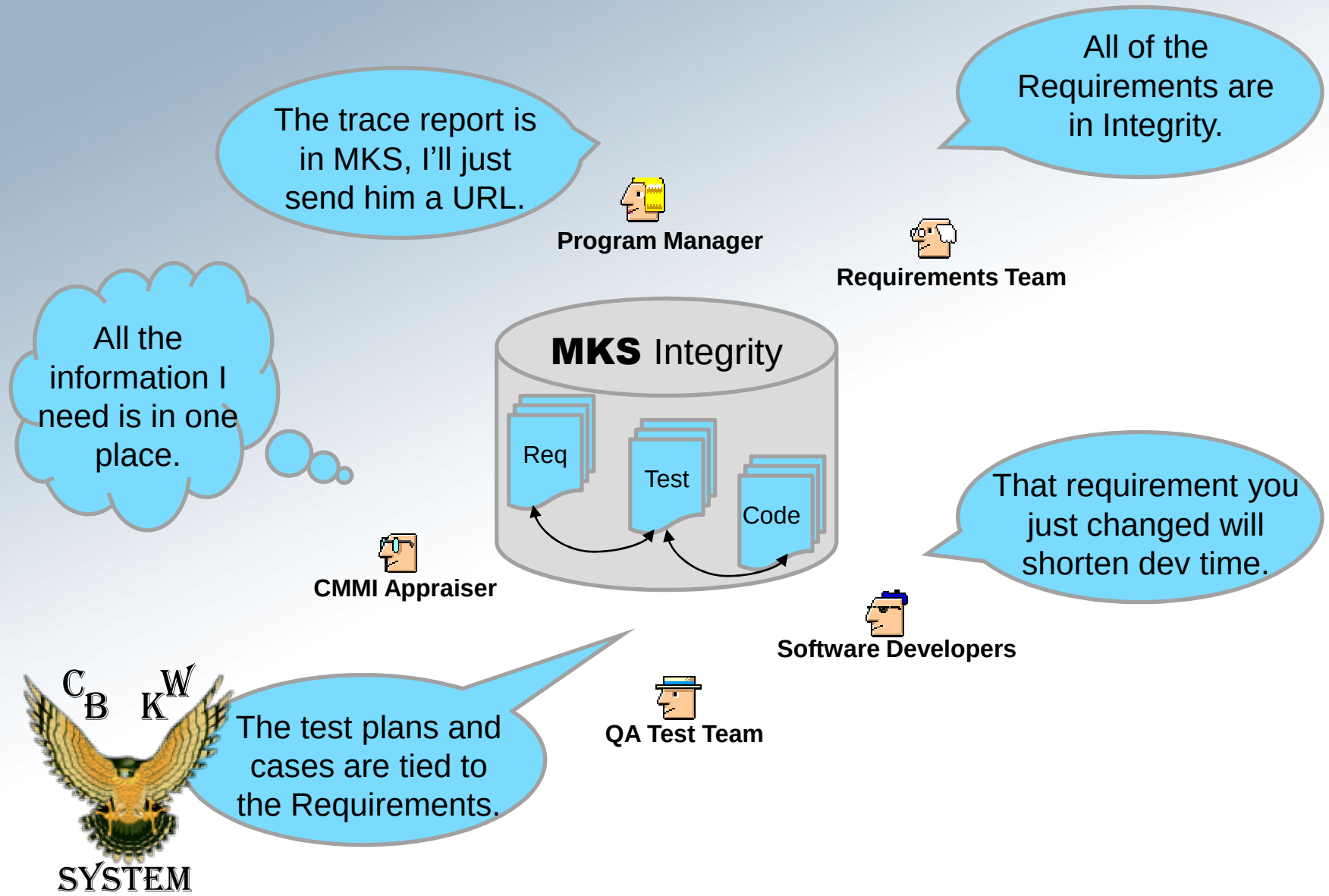
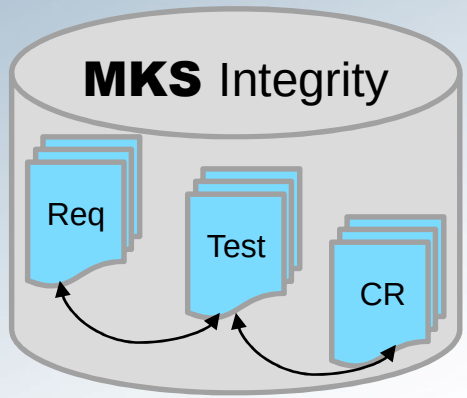


# A Day in the Life using MKS Integrity

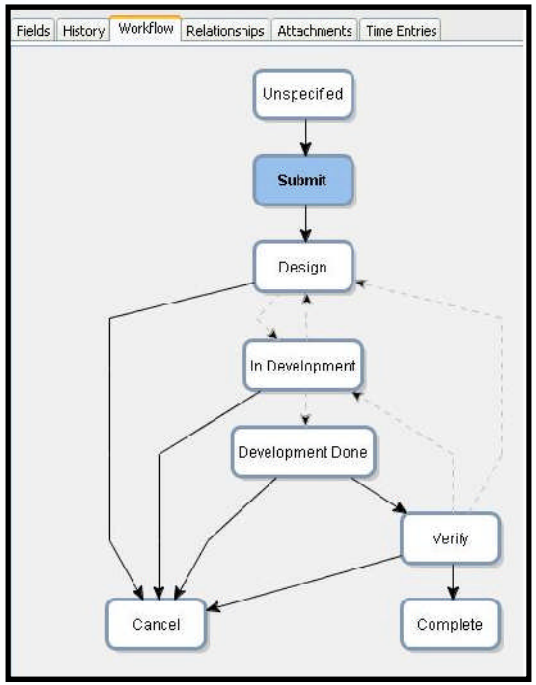


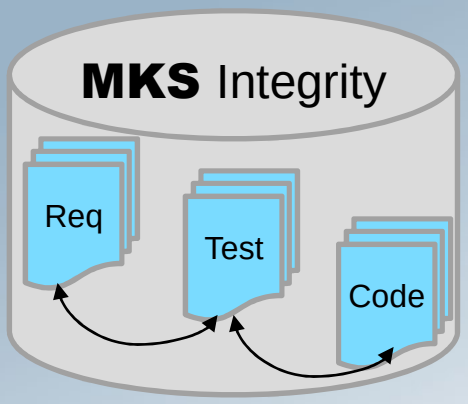
# MKS Integrity – A process/workflow centric approach




**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.

Edit ALM_Task : 690 - Administrator@mksvm1:7001

Format Edit Item View

Normal

Created by manager on Jan 14, 2007 9:40:03 AM
Modified by developer on Jan 16, 2007 12:22:08 PM

Task

NAVSEA

Fields | Relationships | Attachments | Workflow | History | ✓ Time Entries

**Overview**

**Summary:** Display copyright on all forms

**Category:** Implementation **Estimated Effort:** 6

**Risk:** Medium **Effort:** Very Large

**Priority:** Medium **Total Time:** 14.0 hrs

**Status**

**Application:** Logistics **State:** ALM_Complete

**Project:** /ALM_Logistics/Tracking (Word) **Assigned User:** developer

**Details**

**Originated In:** Requirements **Detected In:** Requirements

**Description:**

Display copyright on all forms

**Change Package Information**

**Change Package Total:** 1

**Change Package Member Total:** 11

**Derived From**

| ID | Type | State | Summary | Assigned User | Created By | Order | Relationship ... |
|---|---|---|---|---|---|---|---|
| 687 | ALM_Functiona... | ALM_... | Display copyright on all forms | manager | manager | 1 | ← |

Add Create

OK Cancel Apply Help

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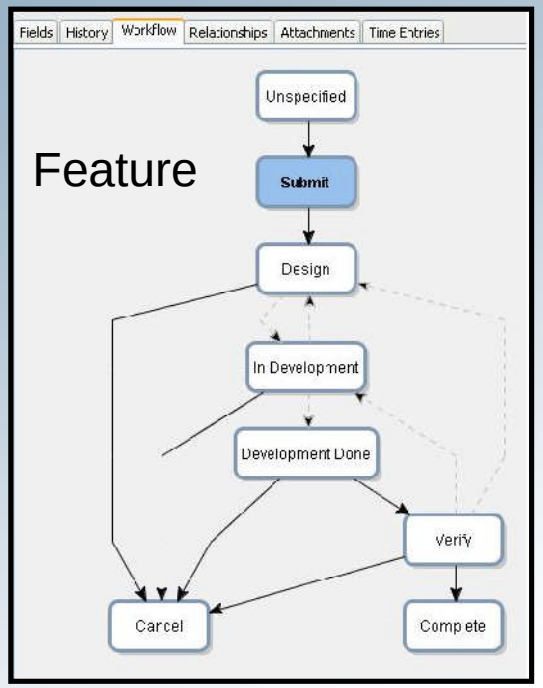
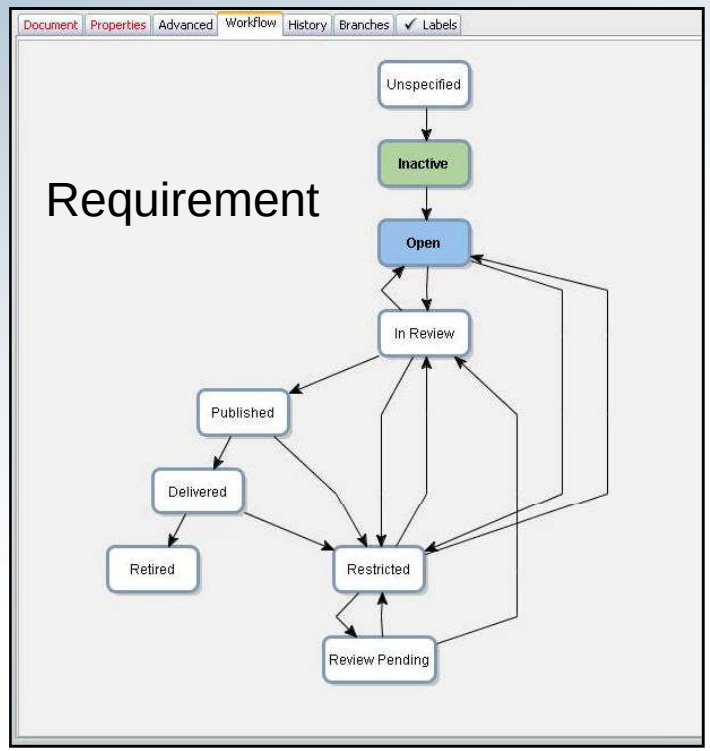
# Integrity Objects have their own unique workflow

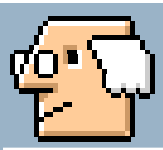



Flexible workflows are fully configurable allowing teams to automate existing processes and adjust process control from relaxed to rigid.

# 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

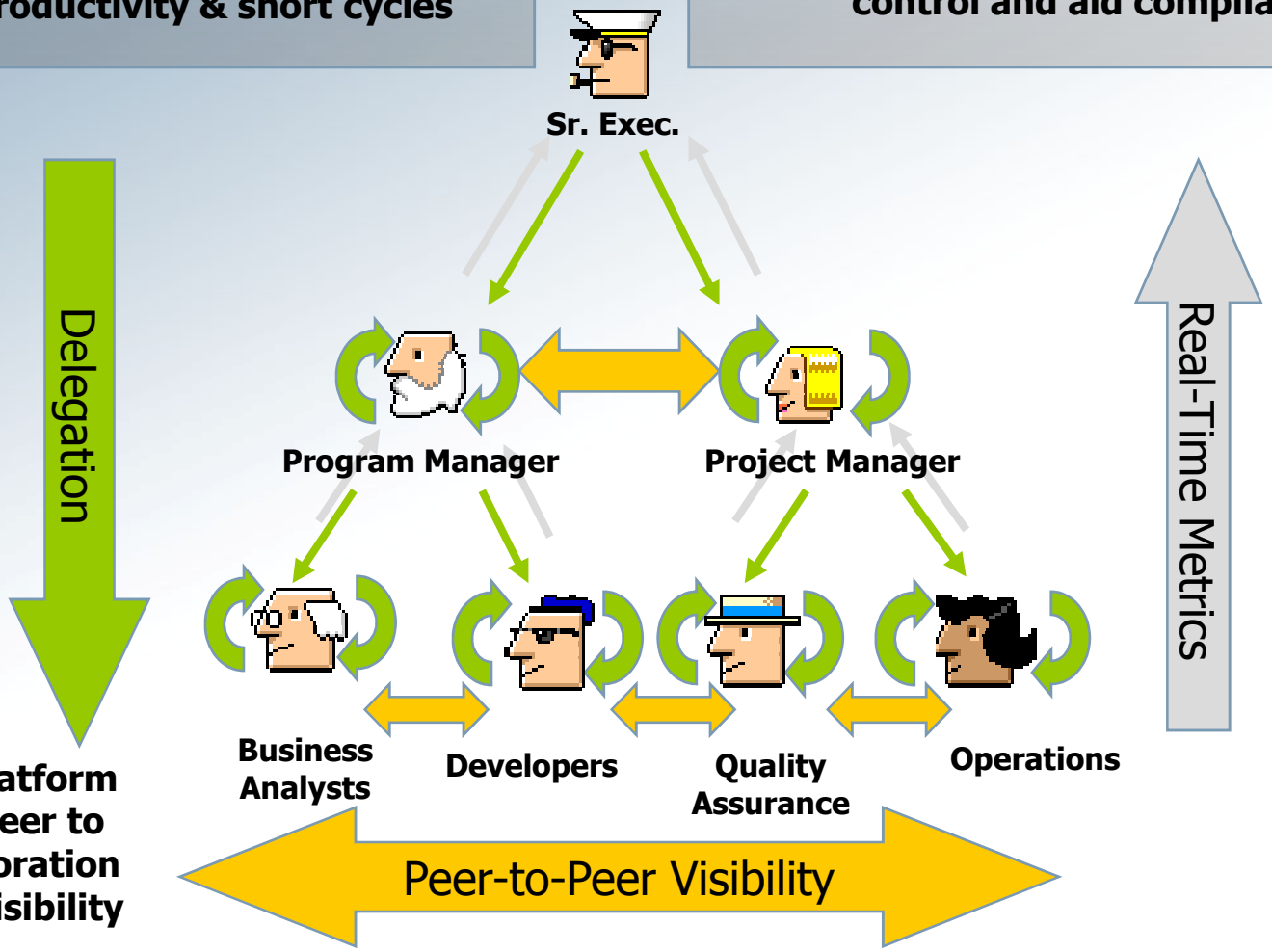
# Release Management

- 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**




**End2End platform supports peer to peer collaboration for better 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