Solution Manager 7.1
E2E Test Management

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Agenda

End-to-End Test Management in Solution Manager 7.1 - Overview

Typical Test Process using Test Workbench

Demonstration

Summary
End-to-End Test Management in Solution Manager 7.1 - Overview
Test Management
End-to-End Testing of SAP-centric Solutions

Customer Pain Points

1. Tests in heterogeneous system landscapes
2. Software updates affecting mission-critical business processes
3. Test system setup and test data management
4. Effort for creation and maintenance of automated tests

SAP Strategy for Test Management

- SAP Solution Manager acts as central hub to manage SAP change events and E2E Integration Testing
- Superior functionality from risk-based test planning, manual/automated functional and performance testing to status reporting and sign-offs
- Integration of Partner Test Suites
E2E Integration Testing of SAP Solutions
Test Process embedded in the SAP Application Lifecycle

Type of Change

New SAP Solution
- Implementation of new SAP Solution

SAP Solution Update
- SAP Support Packages
- SAP Legal Change Packages
- SAP Enhancement Packages
- Customizing changes
- Custom Code
- Interface changes

Test Scope Identification

Change Impact Analysis
- Business Blueprint Update
- Identification of Business Processes affected by SAP Solution Updates
- Recommendation of business processes for regression tests

Test Planning System Setup
- Test Plan setup
- Compilation of Test Packages
- Assignment of Testers
- Setup of Test System
- Creation of Test Data

Test Execution
- Development of Test Cases
- Manual tests
- Automated tests
- Integration Validation
- Incident Management
- Performance tests
- Test status and progress reporting
- Test sign-off

Deploy Changes to Production
- Deployment of changes through transports from Test to Production system
- SAP Support packages, Legal Change Packages, Enhancement Packages

Note: **Test Project Preparation** as first step including: test strategy review, definition of test objectives, test tools, test budget, timeline, roles & responsibilities

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Test Management
Options for SAP Customers based on SAP Solution Manager 7.1

New SAP Solution
- Business Blueprint
- Change Impact Analysis
- Test Planning
- Test System Setup
- Test Execution
- Change Deployment

- SAP Solution Manager
- Work Center Test Workbench
- Test Automation Framework
- HP QTP and other integrated ISV test automation tools

- SAP Quality Center by HP
- SAP TAO

- Rational software
- Quality Manager, ReqPro, ...

Advanced features:
- Order to Cash (O2C)
- Sales Order
- Outbound Delivery
- Goods Issue
- Billing

BPCA

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E2E Test Management
Capabilities of Test Option 1 with SAP Solution Manager 7.1

SAP Solution Manager 7.1

Test Case Setup
- Business Blueprint
- Test Scope Identification
- Test Workbench

Test Planning
- Test Workbench
- Test Data Provisioning

Test System Setup
- SAP TDMS

Test Execution
- Test Workbench
- BW Reporting Partner Reports

Test System Assignment
- HP QTP
- other 3rd party test automation tools

Test Data Assignment

Test Status Reporting

Goals with SAP Solution Manager 7.1

1. Extended functionality of BPCA for risk-based test scope identification
2. Improved usability for manual testers
3. Smooth integration of 3rd party test automation tools with SAP Solution Manager
Typical Test Process using Test Workbench
Typical Test Process in SAP Solution Manager

Test Preparation
- Business Process Expert
  - Quality Expert
  - Check Business Blueprint / Configuration
  - Create/Update Test Cases
  - Re-Use Templates

Change Impact Analysis
- Test Coordinator
  - Check Availability of TBOMs and Test Cases
  - Run Analysis with Business Process Change Analyzer (e.g. for a Customizing Change)
  - Create Test Plan

Test Planning
- Test Coordinator
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  - Assign Tester
  - Define Test Sequences
  - Release Test Plan – Sign Off

Test Execution
- Tester
  - Get E-Mail Notification
  - Access Tester Worklist
  - Perform manual Test
  - Perform automated Test
  - Document Result

Test Reporting
- Test Coordinator
  - Access Test Status Overview
  - Perform Test Status Analysis
  - Run Test Progress Report
“Lean” Solution Documentation as prerequisite for Test Management

**System Landscape Documentation**

- SAP ERP
  - DEV
  - TST
  - PRD

- SAP CRM
  - DEV
  - TST
  - PRD

- Single source of truth
  - Connectivity
  - non-SAP

**Business Process Documentation**

- Lean documentation of process steps
- Business Requirements
- Interface and Custom Code documentation
- ARIS integration
- Test Case assignment (Test Option 1)
- Trace results (TBOM) assignment for BPCA

**Setup**

- SAP Solution Manager Setup Wizard - guided procedure with help sections and log files for semi-automatic and fast setup

**Setup**

- SAP Business Suite content: BPR*
- Re-documentation with SoDocA**
- Manual documentation
- Utility to upload existing documentation
Typical Test Process in SAP Solution Manager

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Business Process Change Analyzer (BPCA)
Motivation and Approach

**Motivation**

SAP Solution updates occur frequently
- SAP triggered: Support Packages, Enhancement Packages
- Customer triggered: Customizing changes, Custom code development

**Pain Point**

Which critical business processes are affected by planned changes?

**Approach**

SAP Solution Update

Change Impact Analysis
- Identification of business processes affected by change
- Risk-based Test Recommendation

Test Planning
- Test Case review and creation of missing test cases
- Test Plan generation

Test Execution
- Regression Tests
  - Manual Tests
  - Automated Tests
Business Process Change Analyzer (BPCA)

**Preparation**

**Business Blueprint**
- Order to Cash (O2C)
- Quotation
- Sales Order
- Outbound Delivery
- Goods issue
- Billing

**Trace to identify objects by process**

Manual execution of process step

Automated: SAP TAO, HP QTP, ...

**BPCA Trace Result (TBOM)**
- Transactions
- ABAP Code: Function modules, ...
- UI: Dynpro 1000, ...
- Tables: Customizing, Master Data

**Change Impact Analysis**

“Which critical Business Processes will be affected by planned changes?”

**BPCA use cases**
1) Customizing changes
2) Custom code development
3) Business Function activation
4) SP and EhP deployment

**BPCA Change Impact Analysis**

- Order to Cash
  - **Sales Order** → code change
- Delivery
  - **Goods Issue** → UI change
- Billing
- Procure to Pay
  - **Create PO** → customizing change

**Risk-based Test Scope Identification**

“Can I get a recommendation for regression tests?”

**BPCA Test Scope Optimization and Test Plan Generation**
- Identification risk-based test scope based on affected process steps
- Test Scope Optimization
- Semi-automatic test plan generation (automated for Test Option 1)
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Test Planning
Systematic approach for Test Planning & Test Case Distribution

Business Blueprint
- Repository for Test Cases
- Reusable for several Test Cycles during Implementation/Upgrade Projects and for Regression Tests

Test Plans
- Selection of Test Cases for specific Phase
- Could be used to reflect other aspects like Business Area, Country, etc.
- Relevant for Reporting

Test Packages
- Selection of Test Cases to be assigned to one or more testers
- Typically used to reflect further organizational aspects like department, user-role, etc.
- Test Sequences can be defined within Test Packages
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# Manual Test Execution with SAP Solution Manager 7.0

## Tester Worklist

<table>
<thead>
<tr>
<th>Test Plan</th>
<th>Errors</th>
<th>No Result</th>
<th>OK</th>
<th>Test Case</th>
<th>Test Object</th>
<th>Status</th>
<th>Message...</th>
<th>Note...</th>
<th>Status Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order-to-Cash</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Create Sales Order</td>
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<tr>
<td>O2C_Create_ERP_Sales_Order</td>
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<td>2</td>
<td>1</td>
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<td>VA01</td>
<td>-</td>
<td></td>
<td></td>
<td>OK</td>
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<tr>
<td>Create Outbound Delivery</td>
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<tr>
<td>O2C_Create_Delivery</td>
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<td></td>
<td>VL01N</td>
<td>-</td>
<td></td>
<td></td>
<td>Errors. Retest Required</td>
</tr>
<tr>
<td>Post Goods Issue</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Untested</td>
</tr>
<tr>
<td>O2C_Post_Goods_Issue</td>
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<td></td>
<td></td>
<td></td>
<td>VL02N</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Test Script

![Create Sales Order](image)

## Start of Business Transaction

![Business Transaction](image)

## Test Status and Incident

![Status and Incidents](image)

## Test result documentation

![Test Result](image)
New User Interface for Test Execution
Manual Test Case display

- Starts Transaction in Test System
- Starts/stops counter for actual test effort
- Set Test Status
- Record actual Test Effort, cumulated when re-testing needed
- Create, assign and process messages related to test case
- Test Package Attachments can be displayed
- Attachments e.g. screenshots can be uploaded

Title: ODC_Create_50
Author: AGS_SMT_30
Test Object: V401
Type: Test Case Description

Progress:
- Test Status: Untested
- Test Effort - Current Execution: 0,000
- Overall Test Effort: 0,000
- Functions: Display
- Restrictions:
- User Interface:
- Documentation:
- Translation:
- Customizing:
- Miscellaneous:

Test Case Description:

Create Sales Order
Project: AGS_BS_IMP

1. Prerequisites
2. Test Execution:
   1. Start transaction or use transaction VME2
   2. Create Sales Order: Enter the following data:
      a. Item:
      b. Quantity:
      c. Description:
      d. Sales Organization:
      e. Sales Area:
      f. Partner Determination:
      g. Channel:
      h. Sales Channel:
      i. Financial Area:
      j. Distribution Channel:
      k. Salesoffice:
      l. Salesperson:
      m. Date:
      n. Time:
      o. Note:
      p. Save

Words: 131
40%
FUNCTIONALITY

1. Integration of design time of 3rd party test tool through certified interfaces, test data planning and assignment of System under Test
2. Scheduling of execution of unattended automated tests – also for remote locations
3. Integration of status and progress reporting between SAP Solution Manager and 3rd party tools
4. Change Impact Analysis and Workflow to trigger repair activities for damaged test cases
Test Execution
Involved Components and Data Flow

SAP Solution Manager
Work Center „Test Management“ – Tester Worklist

Test Automation Framework
- Test Script
- Test Data
- Test Systems

User starts test execution

Test Config reads test data

TDC
Test Data Container (TDC)

Test execution
handover of Script + Test Data + Test System

Test Script
HP QTP

run

Test System
SAP and non-SAP
Test Automation Framework

(2) Scheduling of unattended automated tests

**Scheduling**

Scheduling of unattended automated tests in local or remote locations

**Unattended Test Execution**

Unattended execution of automated test on Test PCs

**Analysis**

Notification about test execution status and subsequent failure analysis

**Test System Landscape (SAP ERP, SAP CRM, …)**

Test Engineer - Location 1

Test PCs - Location 2

Test result analysis

Business Analyst
Test Automation Framework
Workflow & Analysis for accelerated repair of damaged tests

1. Requests repair activity after failed test case execution

Tester

2. Receives message in Damaged Test Case Worklist

Test Case Error Message

3. Analyses and repairs the test case

Central environment for analysis and repair

4. Requests Re-Test Notification

Test Engineer

Re-Test Notification

5. Performs Re-Test Notification

6. Confirms successful repair

Complete information on execution context

View logs
Run test case
Edit test script
Run change analysis
...
Typical Test Process in SAP Solution Manager

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Test Automation Framework
Integrated Test Status and Progress Reporting

- Multiple reporting options for Test Coordinators, Test Engineers, Testers and Project Manager
- Management of Test Plans: Completeness and gap reports for included test cases
- Test status and trend reports to monitor progress of test activities and problem solving
- Drilldown from test status reports to 3rd party test tool logs and dashboards

Test execution and incident status

Trend reports via BW Report

Test Case Status Analysis

3rd party test tool log
Test Workbench - Test Reporting
Status Info System

**GOAL**
Check the test status for the current test phase and analyze the status of related messages.

**SCOPE**
- Point-in-time reporting to monitor the progress of one or several test plans
- Display of complete results for all test plans of a project
- Display of status analyses for individual test plans
- Display and analysis of test plan error messages

**ACCESS:**
Work Center Test Management → Test Evaluation Status Infosystem

**BENEFIT**
The Status Info System provides decision support for test sign-off.
Test Workbench - Test Reporting
Visualized Test Reporting based on SAP BI

**GOAL**
Obtain a graphical representation of the day-to-day evolution of test status, test progress, test effort, and related messages.

**SCOPE**
- **Status Report**
  Monitoring of the status of test cases at a certain point in time.
- **Progress Report**
  Visualization of the progress of the test case status over a certain period.
- **Messages Report**
  Overview of the number and status of messages at a certain point in time.
- **Test Effort Report**
  Analysis of the ratio between planned effort, actual effort, and expected total effort.

**BENEFIT**
Supports project leads and test coordinators in identifying potential delays or resource bottlenecks, and analyzing message-related data.
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Demo

Test Process using Test Workbench
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E2E Test Management
Capabilities of Test Option 1 with SAP Solution Manager 7.1

- Business Blueprint
- Test Planning Test System Setup
- Test Execution
- Change Deployment
- Change Impact Analysis

SAP Solution Manager 7.1

- Test Case Setup
- Test Planning
- Test Execution
- Test Status Reporting

- Business Blueprint
- Test Workbench
- Test Data Provisioning
- SAP TDMS
- Business Process Change Analyzer (BPCA)

Goals with SAP Solution Manager 7.1

1. Extended functionality of BPCA for risk-based test scope identification
2. Improved usability for manual testers
3. Smooth integration of 3rd party test automation tools with SAP Solution Manager

- Test script creation
- Test system assignment
- Test data assignment
Test Automation Framework with SAP Solution Manager 7.1 using Test Option 1

Customer Benefits

Test Coverage
- More business processes can be tested in a testing cycle
- Defects are caught earlier in test system before they move to production system

Costs
- Save cost by engaging less manual testers
- Fast Return on Investments

Flexibility
- Customers can choose their test automation tool of choice
- All major vendors support the certified interfaces with SAP Solution Manager

Accelerated Approach
- Workflow and analysis functions speed of the identification and repair of damaged test case
Further Information

SAP Public Web:

E2E Integration Testing: http://service.sap.com/testing

SAP Standard for Test Management: http://service.sap.com/supportstandards

SAP Solution Manager e-learning material: http://service.sap.com/rkt-solman
Thank you!

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