SAP Solution Manager 7.2
Test Suite
Solution Management, DBS, SAP SE
May 2018
Agenda

1. SAP Solution Manager 7.2

2. SAP Solution Manager 7.2 - Test Suite Overview

3. SAP Solution Manager 7.2 - Processes and Capabilities

4. More Information

5. Appendix
SAP Solution Manager 7.2
SAP Solution Manager 7.2
Optimal for Your Digital Business Transformation

One Process Landscape for Business and IT
Launchpad, Apps and Dashboards

SAP HANA
New User Experience

SAP S/4HANA and SAP customer solutions

DIGITAL BUSINESS

Process Management

Agile Innovation

Cloud & Hybrid

On-Premise, Hybrid and Cloud Solutions

Transparent requirements to deploy

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SAP Solution Manager 7.2 in a nutshell

SAP Solution Manager 7.2 supports 4 key value scenarios

Portfolio to project
- Portfolio management
- Project management

Requirement to deploy
- Demand
- Design
- Development
- Test
- Deploy

Detect to correct
- Monitor
- Incident
- Problem
- Optimize

Request to fulfill
- Service catalog
- Service request
- Service fulfillment

Value scenarios – lifecycle view
SAP Solution Manager Integration Model

Process Flow

The requirement-to-deploy value chain supports the three different change paces at an optimum.

<table>
<thead>
<tr>
<th>Fix</th>
<th>Enhance</th>
<th>Innovate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program fix required to resolve disruption</td>
<td>Enhance required for daily business operations</td>
<td>Strategic initiative for new business model</td>
</tr>
<tr>
<td>Fix immediately, deliver break-fixes and standard changes</td>
<td>Assess enhancement request, negotiate delivery and cost</td>
<td>Model to-be processes, collect requirements</td>
</tr>
<tr>
<td>As fast as needed.</td>
<td>Deliver enhancement</td>
<td>Plan solution delivery</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Deliver solution with continuous business feedback</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bundled in major release</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bundled in minor release</td>
</tr>
</tbody>
</table>

No overhead.

Monitor Solution Readiness

The requirement-to-deploy value chain supports the three different change paces at an optimum.
# SAP Solution Manager Integration Model

## Document Flow

<table>
<thead>
<tr>
<th>Stage</th>
<th>Fix</th>
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<th>Innovate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demand</td>
<td>Incident</td>
<td>Business Requirement</td>
<td>Requirement*</td>
</tr>
<tr>
<td>Design</td>
<td>Problem, Request for Change</td>
<td>IT Requirement</td>
<td>Work Package, Scope Change</td>
</tr>
<tr>
<td>Development</td>
<td>Change Document</td>
<td>Work Item</td>
<td></td>
</tr>
<tr>
<td>Test</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deploy</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Immediately after approval, or minor release

Minor releases

Major releases

*) Planned innovation: Merge of business requirement and requirement, Solution Readiness Dashboard across the lifecycle

---

Solution Readiness Dashboard *
SAP Solution Manager Integration Model
Three Different Change Paces in Requirement to Deploy

<table>
<thead>
<tr>
<th>Fix</th>
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<tbody>
<tr>
<td>Trigger</td>
<td>Business disruption or standard change</td>
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<tr>
<td>Scope</td>
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<td>Process Impact</td>
<td>None</td>
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</tr>
<tr>
<td>Approval</td>
<td>Individual</td>
<td></td>
</tr>
<tr>
<td>Deployment</td>
<td>Unbundled on request or bundled with release</td>
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</table>

<table>
<thead>
<tr>
<th>Enhance</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Trigger</td>
<td>Improvement request</td>
<td></td>
</tr>
<tr>
<td>Scope</td>
<td>Medium</td>
<td></td>
</tr>
<tr>
<td>Process Impact</td>
<td>Minimal</td>
<td></td>
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<tr>
<td>Approval</td>
<td>Individual</td>
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<tr>
<td>Deployment</td>
<td>Bundled with release</td>
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<table>
<thead>
<tr>
<th>Innovate</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Trigger</td>
<td>Transformation projects, new solutions</td>
<td></td>
</tr>
<tr>
<td>Scope</td>
<td>Large</td>
<td></td>
</tr>
<tr>
<td>Process Impact</td>
<td>Significant</td>
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<tr>
<td>Approval</td>
<td>Pre-Approved</td>
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<tr>
<td>Deployment</td>
<td>Bundled with release</td>
<td></td>
</tr>
</tbody>
</table>
SAP Solution Manager - Test Suite
A full-blown application for manual / automated testing and change impact analysis

**Functional Scope**

- Manual and automated functional tests
- Automated change impact analysis of maintenance activities for test scope optimization of regression tests
- New requirements triggering semi-automated test planning for user acceptance tests and functional integration tests
- High degree of test automation possible
- Supports agile development approach within requirements-to-deploy process through Focused Build for SAP Solution Manager
- Seemlessly integrated with SAP Solution Manager Process Management, Solution Documentation, ChaRM, ITSM, ...

**SAP and non-SAP Solutions**

- SAP Business Suite
- SAP S/4HANA (On-Premise, Cloud Edition)
- Non-SAP applications (On-Premise, Cloud)

**Integration**

- Test system refresh
- Partner: test data identification, validation and provisioning
- Partner: test automation tools

**Single Source of Truth**

- All related information in 1 central SAP Solution Manager system
- No complex data replications

The Test Suite of SAP Solution Manager 7.2 is a comprehensive test solution fitting the needs for the vast majority of SAP customers
SAP Solution Manager – Test Suite

Capabilities

Solution Documentation
- Executable Library
- Process Step Library
- Business Processes

Change Impact Analysis
- Scope and Effort Analyzer (SEA)

Test Cases
- Manual Tests
- Automated Tests

Test Plan Management
- Test Plan
- Test Packages
- Test Sequences
- Tester assignment

Test Execution
- Manual Test Execution
- Automated Test Execution
- Defect Management

Test Suite Analytics
- Gap reports
- Status reports
- Progress reports
- Dashboard

Test Data
- SAP TDMS
  - Lean test system setup and refresh
- Test Data Container (TDC)
  - Test data storage for manual and automated tests
  - DeceSoft DTD (test data identification, validation and provisioning)

Test Automation Framework
- SAP Test Suite - CBTA (Component Based Test Automation)
  - MicroFocus UFT
  - WorkSoft Certify
  - Tricentis Tosca
  - other 3rd party

Supported UI technologies by CBTA: SAPGUI, WD-ABAP, CRM Web-Client, SAPUI5, Fiori, …
Partner test tools: SAP and non-SAP UI technologies

Change Impact Analysis
- Business Process Change Analyzer (BPCA)

Test scope estimation before upgrade

Test scope optimization during change events (fix, enhance, innovate, upgrade)
SAP Solution Manager - Test Suite
Test Suite for SAP S/4HANA

• SAP Solution Manager 7.2 – Process Management will be used to import SAP Best Practices and document business processes used in S/4HANA (On-premise or Cloud edition)

• SAP Solution Manager 7.2 – Test Suite will be used for manual and automated tests of implemented or changed business processes for all functional test types

Business Processes are activated from SAP Best Practices and / or customer defined process implementation
Business Processes are based on SAP standard software and optional custom code, modifications and integrated partner apps

Business Processes are activated from SAP Best Practices plus limited extension options
Business Processes are based on SAP standard software and optional extensions using white-listed APIs and partner apps
## Most Common Vendors for SAP-Centric Test Management

<table>
<thead>
<tr>
<th>Functional Test Organization</th>
<th>SAP Solution Manager</th>
<th>Micro Focus*</th>
<th>Other vendors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual Tests</td>
<td>Test Suite</td>
<td>Application Lifecycle Management (ALM)</td>
<td>Tricentis Tosca Testsuite</td>
</tr>
<tr>
<td>Analytics and Reporting</td>
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<td></td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Change Impact Analysis</th>
<th>Scope and Effort Analyzer (SEA)</th>
<th>Worksoft Certify Tricentis Tosca Test Automation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Process Change Analyzer (BPCA)</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Automated Tests</th>
<th>Component-based Test Automation (CBTA)</th>
<th>Unified Functional Testing (UFT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Automation Framework</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Mobile Testing</th>
<th>Mobile Center</th>
<th>Perfecto Mobile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Data Provisioning</td>
<td></td>
<td>DeceSoft Test Data (DTD)</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Load and Performance Tests</th>
<th>LoadRunner</th>
<th>Worksoft Performance</th>
</tr>
</thead>
</table>

| Security Tests              | Fortify                               |                   |

### Legend

- **SAP Solution Manager and complementing tools**
- **Alternative products with overlapping functionality to SAP Solution Manager** (requires additional integration and on-going data replication)

* Former software division of Hewlett Packard Enterprise is now part of Micro Focus
SAP Solution Manager - Test Suite
Capabilities of SAP Solution Manager Test Suite and Focused Build

Focused Build for SAP Solution Manager

Prepare > Explore > Realize > Deploy > Run

Test Suite related
- Requirements / Work Package based Test Plan Generation
- Manual Testing: Test Steps
- Test Execution: My Test Executions
- Test Suite Dashboard

SAP Solution Manager – Test Suite

Solution Documentation > Change Impact Analysis > Test Planning > Test System Setup > Test Execution and Analytics

- Manual Test Cases
- Automated Test Cases
- Test Automation Framework with 3rd party test tool integration
- Test Composition Environment to manage SAP and partner tools
- Change Impact Analysis
- Test Plan and Test Package Management
- Test Execution of manual and automated tests
- Test Data Management
- Gap and Completeness Analytics
- Test Execution Analytics
SAP Solution Manager 7.2 – Test Suite

Delivers all you need

✓ **Tests for SAP and non-SAP**: covers SAP Business Suite, S/4HANA, Concur, Ariba, SuccessFactors, … and non-SAP solutions

✓ **On-premise, Cloud, Hybrid**: Supports functional tests for on premise, cloud and hybrid solutions

✓ **All under one Roof**: no integration setup and ongoing data replication required

✓ **Integration**: seamless integrates with project management, process management, change and release management, defect and incident management, custom code management

✓ **Requirements to Deploy**: Supports waterfall and agile development approaches, including Enterprise DevOps

✓ **Manual Tests**: Easy to use manual tests for business users

✓ **Automated Tests**: for all SAP and non-SAP processes – certified integration of market-leading partner test tools for test planning, execution and reporting

✓ **Test Data**: semi-automatically identify, validate and provide suitable test data for all tests

✓ **Change Impact Analysis**: reduce test scope based on software changes and smart calculations

✓ **Test Planning**: automatically proposes test plan fitting the needs of the upcoming test cycle

✓ **Analytics**: automatically provides full transparency of test status and test progress for all involved parties
SAP Solution Manager – Test Suite

Capabilities

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- Executable Library
- Process Step Library
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Test Automation Framework
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- other 3rd party

Supported UI technologies by CBTA: SAPGUI, WD-ABAP, CRM Web-Client, SAPUI5, Fiori, …

Partner test tools: SAP and non-SAP UI technologies
Test Preparation
Test Case assignment to Solution Documentation

Solution Documentation
- Documentation of Business Processes, Process Steps and Executables (Transactions, Reports, Fiori Apps, …)
- Assignment of Test Cases (manual, automated) to Executables, Process Steps or Business Processes

Details
- Executable Library generated from assigned managed systems
- Test Case (manual, automated) assignment at any level in Executable Library, Process Step Library, Business Processes
- New attribute „Assignment Type“ with values „additive“ or „exclusive“ to enable use of already assigned test cases assigned to library nodes for Business Processes
Solution Documentation
Simplified example to illustrate use of Library objects in Business Processes
Solution Documentation
Assignment of Test Cases to Executable, Process Step and Business Process

Business Processes
- ERP Scenarios
- Sales Scenarios

Alt 1: E2E manual test
- Order to Cash V1
  - Quotation
  - Sales Order STD
  - Delivery
  - Goods Issue
  - Billing

Alt 2: Test Flow including multiple single tests or executables
- Order to Cash V2
  - Quotation
  - Sales Order Special
  - Delivery
  - Goods Issue
  - Billing

Optional: PS specific manual VA01 test

Executables
- LE
  - Delivery (VL01N)
  - Goods Issue (VL02N)
- SD
  - SD-BIL
  - Billing (VF01)
  - SD-SLS
  - Quotation (VA21)
  - Sales Order (VA01)
- Customer Exe
- Dev Class 1
  - ZVA01
  - VA01, VA02, VA03
  - ZVA01, ...

Technical Objects
- FUNC
  - Z_Price_Determination

Generic manual VA01 test

Process Steps
- Sales Order STD
- Sales Order Special

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**Test Management**  
Attribute: Assignment Type

**Goal:** avoid multiple assignments of the same test cases at higher sections → use inheritance rules

<table>
<thead>
<tr>
<th>Business Processes</th>
<th>Test Case originals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Process 1</td>
<td>Specific test BP 1</td>
</tr>
<tr>
<td>Process Step 1a</td>
<td></td>
</tr>
<tr>
<td>Process Step 2a</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Process Step Library</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Process Step 1a</td>
<td>Specific test PS 1a</td>
</tr>
<tr>
<td>Process Step 1b</td>
<td></td>
</tr>
<tr>
<td>Process Step 2a</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Executable Library</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Executable 1</td>
<td>Generic test case Exe 1</td>
</tr>
<tr>
<td>Executable 2</td>
<td>Generic test case Exe 2</td>
</tr>
</tbody>
</table>

**Solution**  
Attribute „Assignment Type“ for nodes at Process Step Library or Business Processes

- Attribute value **additive**: test cases from lower sections will be inherited at this node as well
- Attribute value **exclusive**: only test cases assigned at this node level will be considered for this node
Test Preparation
Data Refresh of Quality and Test Systems

Test System Preparation
• Setup of lean test systems (QAS) from PRD or Pre-PRD systems
• Copy of master data and selective transactional data
• Data refresh on a regular basis

SAP Products
• SAP Test Data Migration Server (SAP TDMS)
• SAP Landscape Management (SAP LaMa)
**Test Preparation**

**Creation of manual Tests**

**Creation of Manual Tests**

- Definition of manual test scripts based on document templates
- Assignment to Executables, Process Steps or Business Processes

**Details**

- Test Case types for manual test reduced to „Test Document“
- New attribute „Test Classification“, e.g. Single Functional Test, User Acceptance Test, Integration Test, Regression Test
**Test Preparation**

**Creation of automated Tests**

- Definition of automated test scripts using applications from SAP (CBTA) and/or partners (MicroFocus UFT, WorkSoft Certify, Tricentis Test Automation)
- Integration with SAP Solution Manager via open interface Test Automation Framework
- Assignment of Test Configuration to Executable, Process Step or Business Process

**Details**

- New attribute „Test Classification“, e.g. Single Functional Test, Integration Test, Regression Test
- System Data Container (SDC) is generated automatically – no manual activity
Automated Tests
Test Configuration and its building blocks

**Business Processes**
- Starting point to create / maintain automated tests

**Test Configuration**
- **Test Script**: CBTA, eCATT, UFT, Certify
- **Test Data**: Order Type, Customer, Product
  - OR: C1000, P-100
  - OR: C2000, P-200

**System under Test**
- SAP ERP: DEV, QAS
- SAP CRM: DEV, QAS
- SAP SCM: DEV, QAS
- SAP S/4HANA: DEV, QAS
- Non SAP: DEV, QAS

**Composite Tests** for E2E business processes covering SAP and non-SAP process steps
- CBTA 1 → CBTA 2 → MF UFT 3 → CBTA 4

SAP customers have a choice of test automation tools integrated with SAP Solution Manager through the Test Automation Framework.
Test Suite
Best Practice approach for functional test automation

1. Select test automation tools from SAP and/or certified partners

2. Create automated tests for single business transactions (SAP, non-SAP)

3. Create automated composite tests for business processes (SAP, non-SAP)

4. Identify and validate test data and assign to automated tests

5. Derive test plan with automated regression tests via BPCA change impact analysis

6. Schedule and run automated tests online or in “lights-out” mode

7. Analyze test execution results and assess status

8. Create Defects for application errors and “Damage” for damaged test cases
## Test Automation Tools integrated with Test Suite
### SAP and certified Partners

<table>
<thead>
<tr>
<th>Product</th>
<th>Scope</th>
<th>License</th>
</tr>
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<tbody>
<tr>
<td>Component Based Test Automation (CBTA)</td>
<td>SAP applications</td>
<td>No add. license required for SAP customers with SAP Enterprise Support contract</td>
</tr>
<tr>
<td>Unified Functional Testing (UFT) *</td>
<td>SAP and non-SAP applications</td>
<td>additional license required</td>
</tr>
<tr>
<td>Certify **</td>
<td>SAP and non-SAP applications</td>
<td>additional license required</td>
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<tr>
<td>Test Automation ***</td>
<td>SAP and non-SAP applications</td>
<td>additional license required</td>
</tr>
</tbody>
</table>

* Former software division of Hewlett Packard Enterprise is now part of Micro Focus

** Focused solutions circle partner: [https://support.sap.com/solution-manager/focused/focused-solutions-circle.html](https://support.sap.com/solution-manager/focused/focused-solutions-circle.html)

*** no specific product name available for Tricentis Tosca functional test automation product
Alternatives to select Functional Test Automation Tools for Test Suite

<table>
<thead>
<tr>
<th></th>
<th>Alternative 1</th>
<th>Alternative 2a</th>
<th>Alternative 2b</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Test Scope</strong></td>
<td>SAP business transactions</td>
<td>SAP and non-SAP business transactions</td>
<td>SAP and non-SAP business transactions</td>
</tr>
<tr>
<td><strong>Test Tools</strong></td>
<td>CBTA / SAP Solution Manager</td>
<td>CBTA / SAP Solution Manager plus 1 partner tool</td>
<td>1 partner tool</td>
</tr>
<tr>
<td><strong>License</strong></td>
<td>No additional license for customers under SAP Enterprise Support (SAP ES)</td>
<td>CBTA – no add.licenses (SAP ES) Partner tool – add.licenses required</td>
<td>Partner tool – add.licenses required</td>
</tr>
<tr>
<td><strong>Details</strong></td>
<td>Customers looking for functional test automation of business transactions limited to SAP user-interfaces • SAP GUI • CRM web-client • Web-Dynpro • SAPUI5 • Fiori • …</td>
<td>CBTA used for test automation for all business transactions using SAP user-interfaces</td>
<td>Partner tool used for test automation of SAP and non-SAP business transactions • <strong>Advantage</strong>: Test Team needs to learn only test automation tool • <strong>Disadvantage</strong>: higher license costs, since test cases have to be built for all business transactions with partner tool</td>
</tr>
</tbody>
</table>

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Test Suite of SAP Solution Manager
Activities to create automated tests for single Process Step using SAP or Partner test automation tool

- Business Process or Process Step
  - Select BP or PS

- Test Composition Environment (TCE)
  - Create new Test Case
  - Refine new Test Case

- Test Data Container
  - Assign test data

- Test Automation Tool
  - CBTA / SAP
  - UFT / Micro Focus
  - Certify / WorkSoft
  - Test Automation / Tricentis

- Execution of business transaction
Test Suite of SAP Solution Manager
Activities to create automated tests for Business Process using SAP or Partner test automation tool

**Steps to build an automated process test**

1. Create Test Scripts for each Process Step with export / import parameters

   - **Test Script 1**
     - Output parameter: Quotation Number
   - **Test Script 2**
     - Import parameter: Quotation Number
     - Output parameter: Sales Order Number
   - **Test Script 3**
     - Import parameter: ...

2. Build Composite Test using TCE

3. Assign Test Data using Test Data Assignment Wizard

Composite Test Environment

Test Data Container

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Customer benefits

- SAP customers can choose the tool they want to use for test automation from SAP as well as certified partners.
- Business Analysts or Test Engineers can build automated functional tests without technical detail know-how.
- One integrated environment provided by SAP Solution Manager to manage all tasks to build, run and analyze test automation.
Test Suite - Test Automation Framework

How-To Guide

Comprehensive description on how-to

- Setup test automation with SAP Solution Manager 7.2
- Create test scripts
- Build composite tests
- Assign test data
- Available for customers in partners in our Test Suite Wiki

Provisioning of Test Data

- Test Data – required for manual tests and automated tests – can be stored and provided via Test Data Container (TDC) of SAP Solution Manager
- TDC can provide test data for single tests and business process tests
- Business Process Experts and Test Engineers can enter suitable test data manually in TDC
- SAP Partner application DTD* supports test data identification, planning, validation and provisioning for manual and automated tests

* Focused solutions circle partner: https://support.sap.com/solution-manager/focused/focused-solutions-circle.html
Test Data for Automated Tests
DeceSoft DTD: 4 approaches for test data identification and planning

- **Online Planning with access to SAP system**
- **Offline Planning (MS Excel) plus DTD online validation**
- **Derive data from posted business documents**
- **High volume usage analytics of posted business documents**

DTD planning grid to identify / plan Test Data Records
Test Data for Automated Tests
DeceSoft DTD: Usage Analytics of posted documents to identify suitable test data

Thousands / millions of posted documents

Usage Analysis for selected business transaction

<table>
<thead>
<tr>
<th>ABC</th>
<th>Order Type</th>
<th>Sales Org</th>
<th>Document Occurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>OR</td>
<td>S-01</td>
<td>1,500,000</td>
</tr>
<tr>
<td></td>
<td>...</td>
<td>S-02</td>
<td>800,000</td>
</tr>
<tr>
<td>B</td>
<td>...</td>
<td>...</td>
<td>75,000</td>
</tr>
<tr>
<td>C</td>
<td>...</td>
<td>...</td>
<td>50,000</td>
</tr>
</tbody>
</table>

Drilldown
customer, material group, ...

Test Data generation

Generic
Flexible selection of important fields per business transaction (Test Data DNA) – generic approach – no specific coding

Automatic
Automatic derivation of fields with interdependencies – generic approach

Fast
Very fast retrieval of valid combinations from PRD systems with subsequent ABC usage analysis

Drilldown
Drilldown to analyze used field values of other entities of the business transaction

Test Data
Automatic generation of test data from ABC analysis
Test Data for Automated Tests
DeceSoft DTD: test data validation for SAP Systems

<table>
<thead>
<tr>
<th>Record</th>
<th>Order Type</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>OR</td>
<td>M-100</td>
</tr>
<tr>
<td>2</td>
<td>OR</td>
<td>M-200</td>
</tr>
<tr>
<td>3</td>
<td>AB</td>
<td>M-300</td>
</tr>
</tbody>
</table>

- Test Data validity can be checked against any selected SAP system
- DTD validation reports provide meaningful explanations and user guidance to correct the test data
Test Data for Automated Tests

DeceSoft DTD: test data provisioning. Use Case 1: push validated test data into TDC of Test Suite

- Select validated test data and push into Test Data Container
- Assign TDC to automated tests
- Create Test Plan and assign automated tests
- Execution of automated tests

Test Automation Tools
- SAP CBTA
- Micro Focus UFT (ex HP QTP)
- WorkSoft Certify
- Tricentis Tosca

Automated tests fail less often due to incorrect test data and identify application errors

- **ok** Test Case 1
- **ok** Test Case 2
- **failed** Test Case 3
- **ok** Test Case 4
Test Data for Manual Tests

DeceSoft DTD: test data provisioning. Use Case 2: push validated test data into TDC of Test Suite
Test Preparation
Change Impact Analysis - BPCA

Business Process Change Analyzer (BPCA)

- Change impact analysis for Transports, SP / EHP, etc. during change activities – like regular maintenance – or release and upgrade projects
- Identifies impacted business processes / steps
- Risk-based test scope optimization

Details

- Semi-dyn.TBOM generation using ABAP Call Monitor to increase accuracy of analysis results
- Attribute „Business Process Test“ to flag business processes that require test execution of all process steps
- Calculation of Business Process TBOM on-the-fly to reduce preparation effort
- Supports SAP S/4HANA release upgrades
# Change Impact Analysis using BPCA by Change Pace

## Fix
- **Change event**: Break-fix / Standard Change
- **Magnitude of change**: rather small
- **Typical frequency**: daily - months
- **Change example**: monthly maintenance activities including changes of custom code and customizing objects

## Enhance
- **Change event**: enhancements using minor release
- **Magnitude of change**: moderate
- **Typical frequency**: weeks - months
- **Change example**: small functional enhancements requested by Business Users

## Innovate
- **Change event**: innovation and transformation projects using major release
- **Magnitude of change**: large
- **Typical frequency**: months
- **Change example**: significantly changed or new business processes, EHP deployment

**BPCA identifies impacted business processes and significantly reduce your test effort for regression tests**
Test Preparation
Automated Test Scope identification and Test Plan generation with BPCA

Test Scope Identification
• BPCA identifies impacted process nodes and executables from software change events
• Examples: configuration changes, custom code implementation, SP deployments, S/4HANA Release upgrades
• BPCA can calculate a risk-based test scope to significantly reduce the test effort

Automated Test Plan generation
• BPCA can automatically generate a regression test plan
Test Preparation
Test Plan Management

Test Plan Management
• Compilation of Test Plan with selected test cases for upcoming test cycle

Details
• Test Plan generation: test case selection manually, semi-automatic using attributes and filters or automated via BPCA and SEA
• Multiple Test Packages to define activities for tester groups
• Assignment of manual testers
• Test sequences for business process testing
• Test data assignment
• Analytical Apps for test preparation and test execution
Test Plan is a collection of Test Cases

Test Plan is specific to a Solution, Branch, Scope

It is possible to have Manual or Automated Test Cases in a Test Plan

In case formal Test cases are missing, executables can be used in Test Plan
Test Preparation
Steps in Test Plan Management

- **Test preparation**
  - Create Manual and Automated Test Cases
  - Assign the Test Cases in Solution Documentation

- **Test Plan creation**
  - Specify Solution, Branch, Scope and Landscape
  - Select Test Cases

- **Test Sequence creation (optional)**
  - Specify order of Execution

- **Test Package creation**
  - Break Test Plan into smaller units called Test Packages
  - Test Sequences can be consumed in Test packages

- **Tester assignment**
  - Assign Testers to Test Packages
  - Same Test case can be assigned to multiple testers
  - It is possible to track Test execution by Tester
Test Preparation
Test Plan Lifecycle

Test in Preparation ➔ Released for Test ➔ Protected ➔ Reopen ➔ Finalized

Supports Digital Signature
Test Preparation

Test Sequence: Use Case 1

Test Sequence defines the order in which test execution must take place.

Use Case 1: Individual Test cases in a Sequence

Test sequence specifies the order of Test Cases. Manual and Automated Test cases can be combined in the same Test sequence.
Test Preparation
Test Sequence: Use Case 2

Test Sequence defines the order in which test execution must take place.

Use Case 2: One E2E document describing the flow. Test sequence is composed of Executables

E2E Test Case Document

Executable 1
Executable 2
Executable 3
Executable 4

Executable
Test Plan Management

Test Sequences

**Definition:** sequence of test cases or executables which have to be executed in a certain order with selected testers with know-how in these areas

- **Type 1:** multiple test cases / executables in a defined order
- **Type 2:** one E2E test case that describe the entire test flow plus multiple executables
- Test Sequence is defined at Test Plan level and can be used to easily generate Test Packages
- Test Sequence can include manual and automated test cases

### Test Sequences

<table>
<thead>
<tr>
<th>Test Seq. 1</th>
<th>Test Seq. 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 TC1</td>
<td>E2E Test Case 1</td>
</tr>
<tr>
<td>2 TC3</td>
<td>2 Exe 1</td>
</tr>
<tr>
<td>3 TC5</td>
<td>3 Exe 2</td>
</tr>
<tr>
<td>4 TC7</td>
<td>4 Exe 3</td>
</tr>
<tr>
<td>5 Exe 1</td>
<td>5 Exe 4</td>
</tr>
</tbody>
</table>

**Business Processes**

- **Sales Scenarios**
  - Order to Cash V1
    - Quotation
    - Sales Order STD
    - Delivery
    - Goods Issue
    - Invoice
  - Order to Cash V2
    - Quotation
    - Sales Order Special
    - Delivery
    - Goods Issue
    - Invoice (VF03)
- **FIN Scenarios**
  - Operational tasks
    - Billing (FB03)
Test Execution
Execution of manual Tests

- Test execution with access to all relevant information, test status setting, test notes and defect creation
- Launch of application that shall be tested in QAS system with 1 click
- Workflow to inform next tester

Details

- Browser-based application to execute manual tests
- Functionality for test sequences allowing combination of manual and automated tests
- Alternative: applications Test Steps and Manual Test Execution available with Focused Build for simplified manual test execution
Test Execution
Execution of manual Tests

Tester Worklist

- Entry point for manual tester
- Fast overview of assigned Test Packages and Test Cases
- Flag “ready to test”
- Test execution status of co-testers
- Launch of manual and automated tests
Test Execution
Execution of manual Tests

Manual Test Execution

- Tester can control all test activities
- Information for manual tester
  - Access to test script and test data
  - Attachments and notes / results from co-testers
  - 1 click start of executable in test system
- Actions
  - Creation of test notes and test results
  - Defect creation
  - Status setting
Test Execution
Manual Tests using Test Steps and MTE of Focused Build

New approach for manual testing
• New manual test solution using grid approach
• Fully embedded in Test Suite of SAP Solution Manager

Test Steps*
• Designer application for Test Engineer to create manual tests using grid to describe test activities

My Test Executions*
• Access for manual testers with high usability for casual users
• Suitable for single testers as well as teams

Availability
• Focused Build SP01 for SAP Solution Manager 7.2 SP05

* Capability provided by Focused Build for SAP Solution Manager 7.2
Test Execution
Execution of automated Tests

Execution of automated Tests

- Test execution of automated test triggered by Test Coordinator or scheduled job
- Composite tests for testing of E2E business processes using 1 or combination of test automation tools.
- Scheduling of multiple test in unattended mode in bulk at selected time, e.g. during the night to allow mass execution
- Test results available from SAP and partner test tools in SAP Solution Manager for reporting
Test Suite of SAP Solution Manager

Execution of automated tests using SAP or Partner test automation tool

1. User starts test execution in „lights-out“ or adhoc mode

2. Test data selected from TDC

3. Test execution: handover of Test Script + Test Data + SUT info

4. Logon and automated business process execution

5. Test results and test tool logs

Test Configuration

- Test Script
- Test Data
- System under Test

Test Data Container (TDC)

Scheduled Tests

Tester Worklist

Test Case

CBTA or Partner tool

SAP or non-SAP application
Manual and Automated Test Execution

• Damaged Test Cases

Feature details

• Testers and Test Coordinators can report test cases as damaged in situations, where the failure is expected to be caused by an incorrect test case and not due to a defect of the application under test.

• Available for manual and automated test cases as well as executables.

• Specific transaction type used for damaged test cases (SAP delivered transaction type SMDT)

• Analysis and follow-up actions including display test case, distribute damaged information to impacted test plans, display test execution log (auto tests), Go To like usage location

Benefits

• Efficient handling of follow-up actions, since the Tester / Test Coordinator can request an assessment of the damaged test case and potential repair activities without knowing the expert such as the Test Engineer or test case owner.
Create ticket for damaged test case

Trigger: Test execution failure for manual / automated test or executable

Tester Worklist
Role: Tester

Test Execution Analytics
Role: Test Coordinator

View damaged test cases

Roles: Test Coordinator, Test Engineer

Damage 1
Damage 2
Damage 3

Infos
- Damage status
- Processor
- …

Follow-up actions

Roles: Test Coordinator, Test Engineer

Actions
- Display / edit test case
- Distribute damaged information to impacted test plans
- Open test execution log for automated tests (original and latest log)
- Go To: identify node in Solution Documentation where damaged test case assigned
- …
SAP Solution Manager 7.2 - Test Suite

Test Automation

Customer benefits

- SAP customers can choose the tool they want to use for test automation from SAP as well as certified partners
- Business Analysts or Test Engineers can build automated functional tests without technical detail know-how
- One integrated environment provided by SAP Solution Manager to manage all tasks to build, run and analyze test automation
Test Execution
Defect Management

Defect Management

- Creation of Defects by Tester during test execution
- Defect contains all relevant context information
- Workflow between service organization and tester

Details

- Customers can define multiple transaction types and decide at time of defect creation which one to use
Test Execution
Analytics, Reports and Sign-off

Analytics, Reporting and Sign-Off
- Gap and completeness reports to check availability of Test Suite assets, like test cases, TBOMS, etc.
- Test Execution Analytics to assess test status
- Progress Analytics to assess progress of test execution

Details
- Completely redeveloped functionality with high usability, integration between reports and rich functionality
Test Suite Analytics
Data Flow for analytical Applications

SAP BO Design Studio

Progress Analytics

Test Suite BW MultiProvider

Standard BEx Queries

Standard Data Extractor

Gap and Completeness Reports

Test Suite Dashboard (Focused Build)

Test Execution Analytics

SAP Solution Manager 7.2 Test Suite
Test Suite Analytics
Classification of Test Suite Analytics

Overview

Test Execution Analytics and Progress Analytics

Completeness and Gap Reports

Test Suite Dashboard*

* Capability provided by Focused Build for SAP Solution Manager
SAP Solution Manager 7.2 – Test Suite
Delivers all you need

✓ **Tests for SAP and non-SAP**: covers SAP Business Suite, S/4HANA, Concur, Ariba, SuccessFactors, … and non-SAP solutions

✓ **On-premise, Cloud, Hybrid**: Supports functional tests for on premise, cloud and hybrid solutions

✓ **All under one Roof**: no integration setup and ongoing data replication required

✓ **Integration**: seamless integrates with project management, process management, change and release management, defect and incident management, custom code management

✓ **Requirements to Deploy**: Supports waterfall and agile development approaches, including Enterprise DevOps

✓ **Manual Tests**: Easy to use manual tests for business users

✓ **Automated Tests**: for all SAP and non-SAP processes – certified integration of market-leading partner test tools for test planning, execution and reporting

✓ **Test Data**: semi-automatically identify, validate and provide suitable test data for all tests

✓ **Change Impact Analysis**: reduce test scope based on software changes and smart calculations

✓ **Test Planning**: automatically proposes test plan fitting the needs of the upcoming test cycle

✓ **Analytics**: automatically provides full transparency of test status and test progress for all involved parties
SAP Solution Manager – Test Suite

More Information for Customers and Partners
Test Suite – more information for customers and partners

SAP Solution Manager WIKI – Test Suite

- Audience: customers and partners
- Positioning presentations
- How to configure and administration
- Tips and tricks
- Offline demos

SAP Solution Manager Learning Resources Overview

Build up your knowledge and skills

Available Learning Resources
From Interest to Expert Knowledge

Management Competence
(Introduction)
- Overview Videos
- Overview Publication

Core Competence
(Key Value Chains)
- Overview Information
- SAP Solution Manager Homepage
- SAP Solution Manager Media Center
- Focused Solutions
- Ready-to-run solutions for SAP Solution Manager

Expert Competence
(Functional Areas)
- Expert Publication
- Technical Documentation

 videos
- SAP Solution Manager for SAP S/4HANA
- Support, Product, Release, and Support Info
- Product Videos, System Demos, Tutorials
- Supported languages, browsers, and databases

- Expert WIKIs
- Functional Areas Expert Content

- System Landscapes
- Private Cloud System (CAL), Public Demo System, Internet Demo System

- Live Expert Sessions & e-Learnings
- Get empowered by the SAP Enterprise Support Academy

- Classroom Trainings
- Setup, configuration, and functional overview

- Product Documentation
- Application Help, Release Notes, Installation, Upgrade, and Security Guides

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Appendix
SAP Solution Manager 7.2 Test Suite and Micro Focus ALM

Summary

Positioning

• The Test Suite of SAP Solution Manager 7.2 is the default test suite for all SAP customers…

• …and includes all required capabilities for functional testing of business processes enabled by SAP and non-SAP applications.

• Micro Focus products can be integrated or complement the Test Suite: UFT, Loadrunner, Fortify

• Customers with strategic investments in HP ALM should request the SAP DBS service.

SAP Products

• SAP has set the following products into maintenance mode ("sunset") and removed them from the SAP portfolio:
  1. SAP TAO
  2. SAP Solution Manager Adapter for Micro Focus ALM

• Customers with licenses and maintenance contract for these products can download versions suitable for SAP Solution Manager 7.2.

SAP DBS Service

SAP DBS provides an integration service for customers with licenses and maintenance contract for Adapter and SAP TAO

• Advantages of SAP Solution Manager (SSM) Test Suite

• Workshop to define integration aspects for SSM 7.2 and Micro Focus ALM

• Configuration of integration (Adapter) and SAP TAO in customer system

• Know-how transfer to customer

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