SAP Solution Manager 7.1
Component-based Test Automation (CBTA)

ALM Solution Management, AGS, SAP AG
Overview

Test Management with SAP Solution Manager 7.1
SAP Solution Manager provides a single source of truth

**IT Service Management**
- Enhancement
- Service Request
  - Incident
  - Problem
  - Request for Change

**IT Portfolio and Project Management**
- Business Requirement
  - Portfolio
  - Project
  - Design Mgmt
  - Build Mgmt
  - Build Execution
  - Test Mgmt
  - Test Execution
  - Release & Deployment Mgmt
  - Deployment execution

**Run SAP like a Factory**
- Business Process Monitoring and Analytics
- Monitoring of Systems, Technical Scenarios and End User Experience
- Change

**Application Lifecycle Management**
Test Management
Test Management 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
- Business Blueprint
  - Business Blueprint Design
  - Solution Configuration
- Change Impact Analysis
  - Business Blueprint Update
  - Identification of Business Processes affected by SAP Solution Updates
  - Recommendation of business processes for regression tests

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

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

Change Deployment
- Deployment of changes through transports from Test to Production system
- SAP Support packages, Legal Change Packages, Enhancement Packages
Test Management
Products and capabilities integrated with SAP Solution Manager 7.1 SP07 (Q4 2012)

Test Option 1
- SAP Solution Manager Work Center
- Test Workbench
- CBTA (SAP), QTP (HP), eCATT (SAP), other ISV tools

Test Option 2
- Adapter
- SAP Quality Center by HP
- SAP TAO

Test Option 3
- Rational software
- SAP Connector, Quality Manager, Requirements Composer, Team Concert, ...
Test Option 1

SAP Solution Manager and integrated partner tools
Test Management
Capabilities of test option 1 with SAP Solution Manager 7.1 SP07

Business Blueprint

Change Impact Analysis

Test Planning
Test System Setup

Test Execution and Reporting

SAP Solution Manager 7.1

Test Case Assignment

WoC Test Management
- Test Plan generation
- Tester assignment

Test Execution

WoC Test Management
- Manual Tests
- Automated Tests

Test Status Reporting

WoC Test Management
- Test Workbench
- BW Reporting
- Partner Logs and Reports

Test Automation Framework

- CBTA (Component based Test Automation)
- eCATT
- START*

- HP QTP
- WS Certify
- other 3rd party test automation tools

This is the current state of planning and may be changed by SAP at any time.
Test Automation Framework in SAP Solution Manager 7.1

Test Automation Framework

**Test Design**
- Seamless integration between SAP Solution Manager and test tools from SAP and Partners
- Test Data Container (TDC) provide test data for test script parameters
- Central management of System under Tests

**Test Execution**
- Start of automated tests from Workcenter Test Management
- Ad-hoc start or scheduler for unattended execution
- Integrated test execution logs from partner tools

**Test Result Analysis**
- Test Manager can view test results from manual and automated tests in one environment
- Status and progress reports
- Integrated partner reports

**Accelerated Repair**
- Workflow between Tester and Test Engineer to trigger test case repair
- Rich environment for Test Engineer to analyze problems and perform repair activities
Test Automation Framework in SAP Solution Manager 7.1
Automated tests assigned to process steps in Business Blueprint

- Component Based Test Automation (CBTA) is shipped with SAP Solution Manager 7.1 SP07
- Customers with SAP Enterprise Support contract can download 2 HP QTP licenses from SMP (https://service.sap.com/testing)
- Test Automation Framework provides 2 interfaces to integrate ISV test automation tools. SAP ICC offers certification services

SAP customers have a choice of test automation tools integrated with SAP Solution Manager 7.1 through the Test Automation Framework
SAP Solution Manager 7.1 SP07 introduces CBTA as new test automation tool which provides a convenient way to build component-based test scripts for SAPGUI and SAP CRM web-client.

**Approaches for test automation**

**Test Script approach: Record and Playback**

**Disadvantages**

- No re-use
- Expert knowledge required during repair activities

**Test Script approach: modular test scripts**

**Advantages**

- Draft test script creation by Business Analysts
- Re-use of test components
- Fast repair of damaged test scripts

Component-based Test Automation (CBTA)

Test Composition Environment (TCE)
CBTA – new test automation tool with SAP Solution Manager 7.1

Component-based Test Automation (CBTA)

Functionality
- CBTA Test Creation Wizard for test script creation by Business Analysts
- CBTA test scripts are composed by reusing SAP delivered default components and customer specific screen components
- Fast repair of damaged test scripts
- Supported UI technologies: SAPGUI, SAP CRM web-client

Availability
- Availability: with SAP Solution Manager 7.1 SP07
- License: included in SAP Enterprise Support contract

CBTA enables your Business Analysts to build component-based test scripts which are highly flexible and easy to maintain
TCE – new test composition for CBTA in SAP Solution Manager 7.1

Test Composition Environment (TCE)

- TCE provides all functions to create and maintain CBTA test scripts and Test Configurations
- Features
  - Attributes for Test Configuration and Test Scripts
  - Maintenance and composition of CBTA test scripts
  - Parameter handling
  - Composition of E2E process tests including parameter handover
  - Test data assignment
- Availability: with SAP Solution Manager 7.1 SP07
- License: included in SAP Enterprise Support contract

TCE enables your Business Analysts and Test Engineers to create and maintain your automated regression tests in a convenient way
CBTA – flow to create new automated test

Business Process

- Order to Cash (O2C)
  - Quotation
  - Sales Order
  - Outbound Delivery
  - Goods Issue
  - Billing

Test Composition Environment (TCE)

create new Test Configuration

Component Based Test Automation (CBTA)

CBTA – Test Creation Wizard

CBTA – process flow analysis

CBTA – Test Components / Test Script

Test Composition Environment (TCE)

finalize Test Configuration

Store Test Configuration at process step or business process

Test Data Assignment Wizard

assign test data

Test Data Container
**Test Management**

**Test Automation with Component Based Test Automation (CBTA)**

**Work Center TM**
- User selects SolMan project and navigates to Solar02
- Alt 2: Workcenter View Test Repository

**SOLAR02**
- Alt 1: User creates new Test Config by selecting Test Case Type CBTA

**Test Composition Environment (TCE)**
- Tab Attributes: on the ‘Attributes’ tab, user defines test configuration title, application component, SDC and target system. Specify executable.
- Launch PFA.
- Tab Test Script: User saves script, default data and test configuration.
- Tab Parameters: edit parameters
- Tab Test Data: assign test data from TDC via new Test Data Assignment Wizard

**Component-based Test Automation (CBTA)**
- User executes transaction in managed system via CBTA PFA.
- PFA creates test components and compose test script

**Test Data Container**
- Test Data assignment from Test Data Container (TDC) to CBTA Script Parameters via new Test Data Assignment Wizard

User saves Test Configuration assigned to process step of SolMan project
1 Test Data Container (TDC): Data Structure

- **How**: create TDC parameter for all input fields of your business process used in test script
- **Who**: Test Engineer

2 TDC: test data planning

- **Who**: Business Analysts
- **Use**: Test data stored in a TDC can be consumed by multiple Test Configurations.

Test Data Container(s) act as **central repository** for your test data.

**Customer benefit**: test data changes can be done in one central location leading to a significant lower maintenance effort and faster availability of test data.
Test Automation Framework in SAP Solution Manager 7.1

Test data assignment to automated tests

Test Data Assignment Wizard

- Step-by-step guidance to find and assign test data for automated regression tests

- Features
  - Comprehensive search functions to find suitable Test Data Container by multiple dimensions
  - System-supported parameter mapping between TDC and Test Configuration
  - Test data selection from TDC for use in Test Configuration

- Availability: SAP Solution Manager 7.1 SP07

Business Analysts and Test Engineers have got a convenient way to assign test data to automated regression tests
Test Automation Framework in SAP Solution Manager 7.1

Test execution

1. User starts test execution
2. Test data selection
3. Test execution: handover of Test Script + Test Data + SUT info
4. Logon and automated business process execution
5. Test results and logs

Test Configuration:
- Test Script
- Test Data
- System Data

Tester Worklist in Workcenter Test Management

Test Data Container (TDC)

System under Test
Composition of end to end tests through TCE using any test automation tool plugged into the Test Automation Framework

Automated End-to-End business process tests

- TCE: html-based maintenance application for automated tests
- Test automation applications: CBTA, START*, eCATT, HP QTP, WS Certify, …
- Ability to compose E2E tests based on multiple SAP / ISV test tools
- Planned: test case type „Composite Test“

Business Process

Parameter handover is managed by TCE

Example 1
- CBTA 1 → CBTA 2 → CBTA 3 → CBTA 4

Example 2
- HP QTP 1 → HP QTP 2 → HP QTP 3 → HP QTP 4

Example 3
- HP QTP 1 → CBTA 2 → CBTA 3 → eCATT 4

Example 4
- START 1 → START 2 → CBTA 3 → CBTA 4

* planned capability START (SAP Standard Regression Tests)
Component-based Test Automation (CBTA) – Customer Benefits

Ease of use
• Business Analysts can create draft test scripts
• Test Engineers can refine automated tests

Powerful
• Test automation for end-to-end business processes
• Separation and central planning of test scripts, test data, systems under test

Everything included
• CBTA is fully integrated with SAP Solution Manager 7.1 via Test Automation Framework
• Usage rights included for customers with SAP Enterprise Support contract
Thank You!