

Hands-On Lab: Transform Your Business with DIY Automated CCM Controls in SAP Process Controls

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SAPinsider

What We'll Cover

Discover a world where you have complete control over your business processes!

In our exciting session,

- We will equip you with the skills to set up Automated CCM controls in SAP Process Controls - no IT or development skills required.
- Join us and start your journey towards a more streamlined, efficient, and controlled business operation.
- Take a leap towards a more efficient and controlled business environment

Agenda

- Overview
- SAP Process Control and Continuous Control Monitoring (CCM)
- Setting up data sources and business rules
- Hands-on activities
- Wrap-up

Overview



The “3 Ws” for this session

WHY

SAP Process Control continuous control monitoring (CCM) capabilities can help automate routine activities, helping the company do more with less

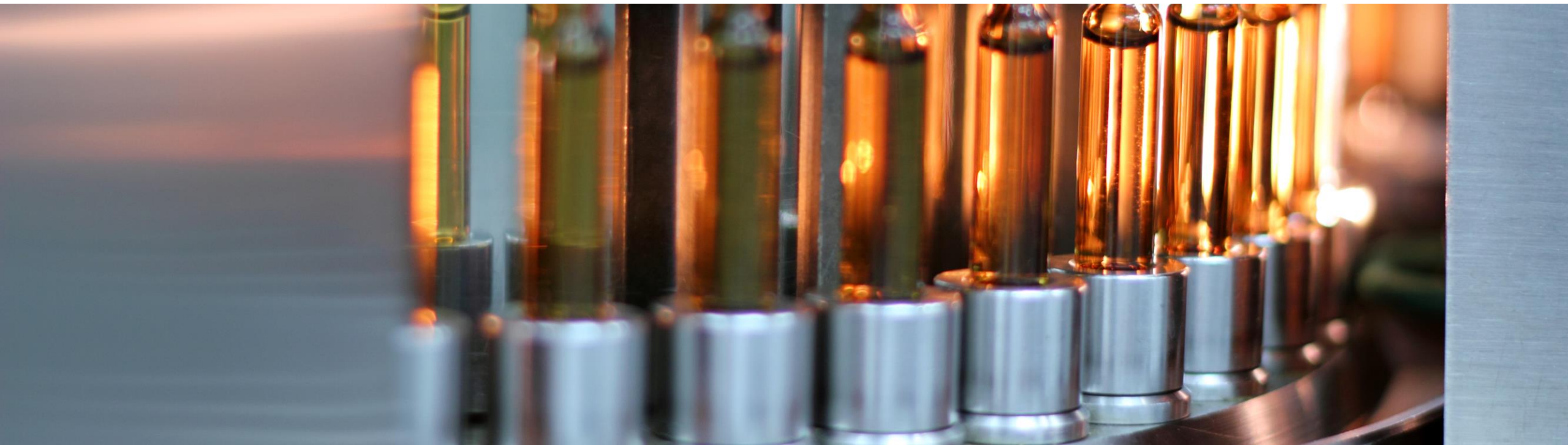
WHO

Compliance or teams, business users, IT business analysts, auditors – especially those who already use or are considering implementation of CCM

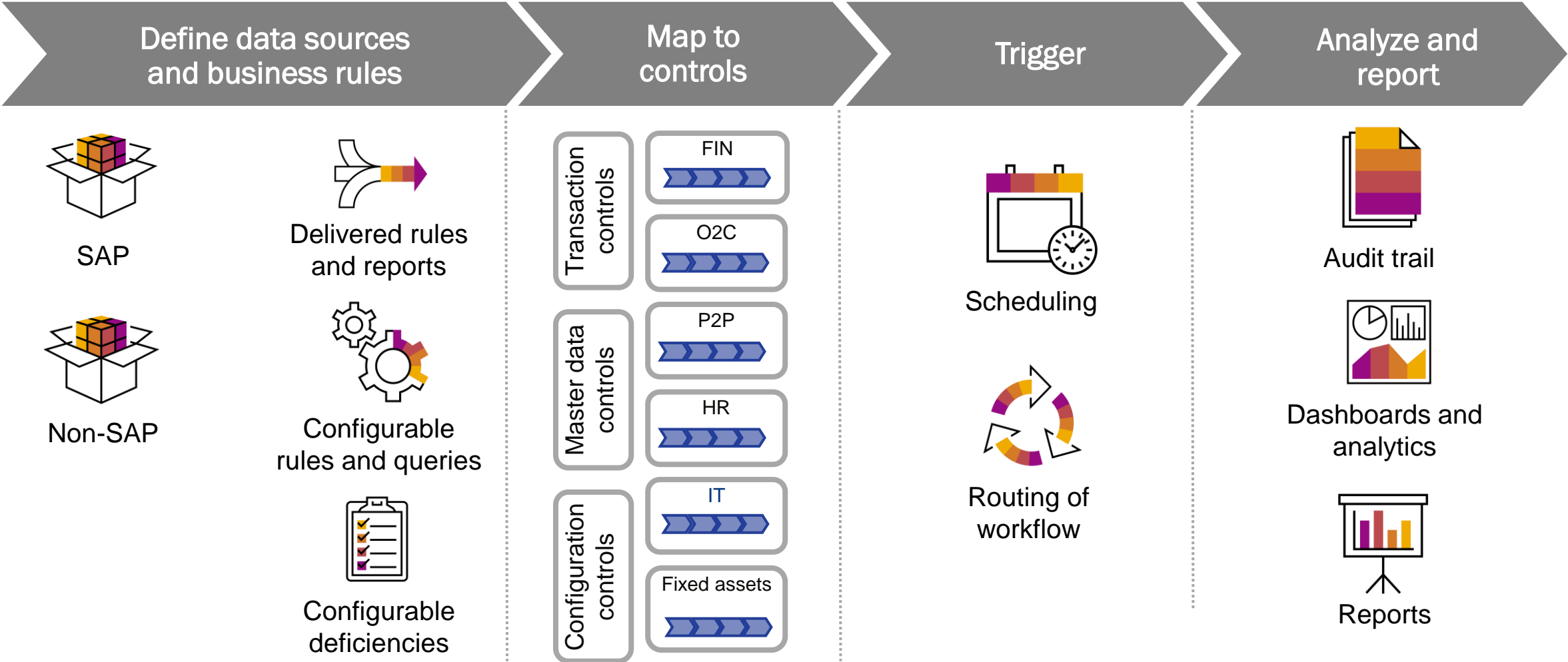
WHAT

A session consisting of both lecture and hands-on practice about working with SAP Process Control's CCM functionality

SAP Process Control and continuous control monitoring (CCM)



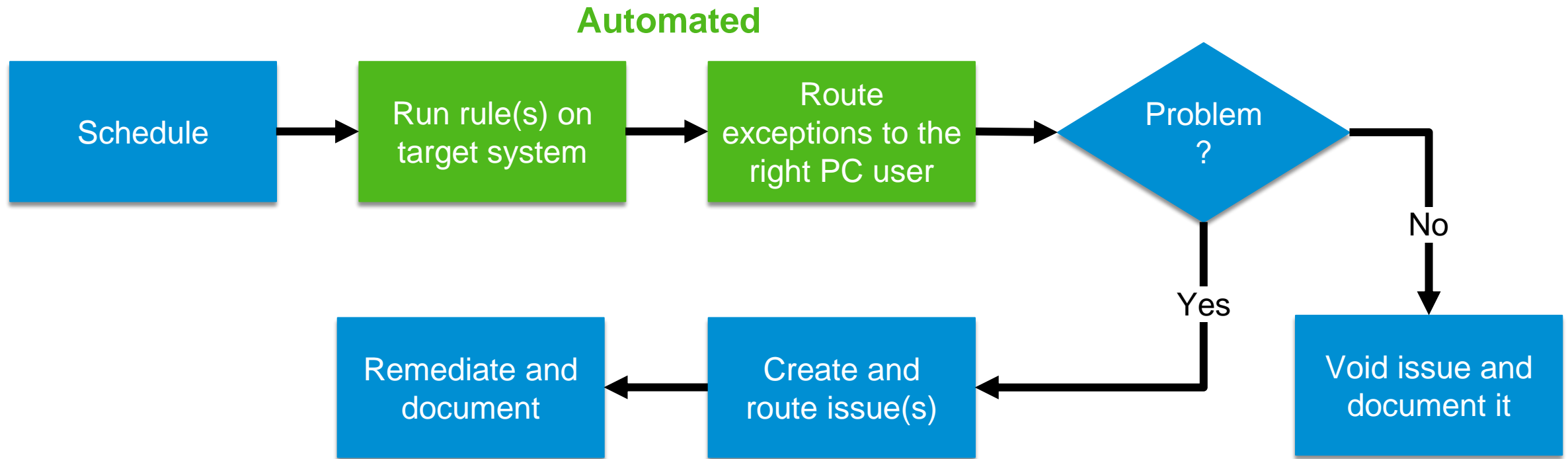
Continuous control monitoring (CCM) with SAP Process Control - A high-level view of CCM process flow



Optional in version 12.0

FIN = finance; O2C = order to cash; P2P = procure to pay

Simplified CCM flow for the business user



MINI DEMO

A look at a continuous control monitoring example from an end user perspective



Setting up data sources and business rules



Continuous control monitoring

GRC connects via a technical plugin to any SAP System

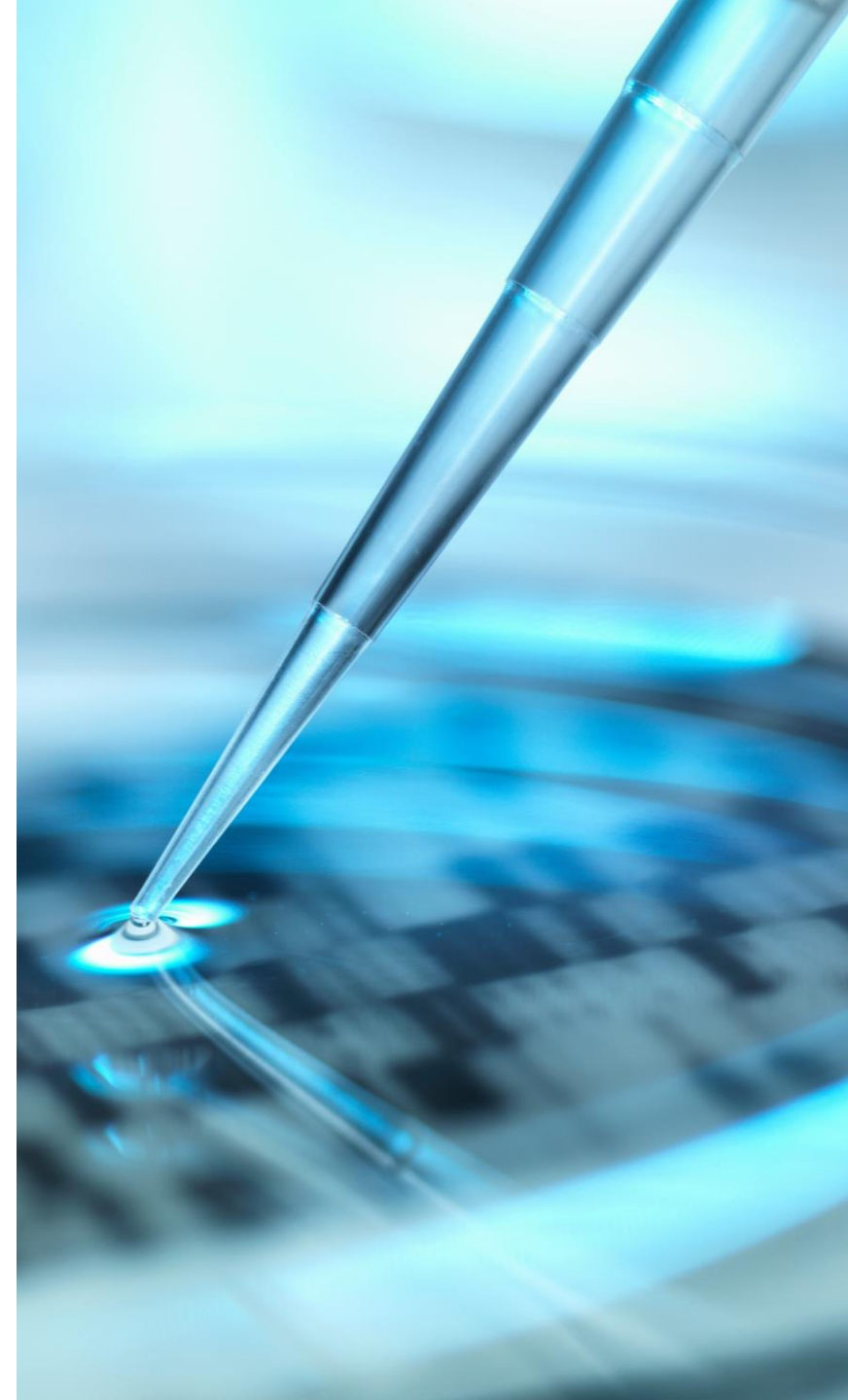
GRC can retrieve the following information from the source system:

- Reports
- Tables
- SAP Queries
- Programmable/Programmed Rules
- BW Queries
- Segregation of Duties (SOD)
- HANA views

In GRC a business logic for identification of potential violations or exceptions is set up while evaluating the source system data

Pre-defined deficiency criteria lead to exceptions and issue reporting with notification to control owner

This general process allows semi-automation (additional review step) and automation



Rule building principles: Creating a data source



If you plan to execute business rules in the past, be sure to choose a Valid From date that includes the period you want to query

Data Source

Save

Timeframe 02/01/2015 ID 50006229 Last Modified On

General Object Field Attachments and Links

General

*Data Source: MW_Test_DS

Description: MW_Test_DS

*Valid From: 01/01/2015

*Valid To: 12/31/9999

Status: New

Search Term

Term 1: Term 2: Term 3: Term 4: Term 5:

Rule building principles: Creating a data source

A variety of Sub Scenarios (also referred to as data source types) are available

In this hands-on session, we will work with these:

- Configurable
- HANA

The screenshot shows the 'Data Source' configuration window in SAP. At the top, there is a 'Save' button and a help icon. Below this, the 'Timeframe' is set to '02/01/2015', the 'ID' is '50006229', and the 'Last Modified On' field is empty. The interface has three tabs: 'General', 'Object Field' (which is currently selected), and 'Attachments and Links'. Under the 'Object Field' tab, there is a 'Sub Scenario' section. It contains a dropdown menu for '* Sub Scenario:' which is open, showing a list of options: 'ABAP Report', 'HANA', 'SoD Integration', 'BW Query', 'Configurable', 'Event', 'External Partner', 'Process Integration', 'Programmed', and 'SAP Query'. To the right of this dropdown is another dropdown for '* Connection Type:'. Below the dropdowns, there are sections for 'Parameters' and 'Fields', both of which are currently empty.

Rule building principles: Creating a data source

The Sub Scenario and connection type are associated in customizing

The screenshot shows the 'Data Source' configuration window in SAP. At the top, there is a 'Save' button and a help icon. Below this, the 'Timeframe' is set to '02/01/2015', the 'ID' is '50006229', and the 'Last Modified On' date is blank. The 'Object Field' tab is selected, showing the 'Sub Scenario' section with two dropdown menus: '*Sub Scenario' set to 'Configurable' and '*Connection Type' set to 'SAP System'. The 'Parameters' section contains a 'Main Connector' field with the value 'T90CLNT090' and a 'Main Table' field which is currently empty. A 'Main Table Lookup' button is located next to the 'Main Table' field. The 'Fields' section is visible at the bottom but is currently empty.

Data Source		
Save ?		
Timeframe	02/01/2015	ID 50006229 Last Modified On
General Object Field Adhoc Query Connector Attachments and Links		
Sub Scenario		
*Sub Scenario:	Configurable	*Connection Type: SAP System
Parameters		
Main Connector:	T90CLNT090	
Main Table:		Main Table Lookup
Fields		

Rule building principles: Creating a data source

Normally up to 5 joined tables are possible

However, cluster and pooled tables can only support one table per data source – no additional join options

The screenshot shows the 'Data Source' configuration window with the 'Object Field' tab selected. A 'Lookup' dialog box is open, displaying a table with the following data:

Table Name	Description
BKPF	Accounting Document Header

The dialog box also includes fields for 'Table Name' (BKPF), 'Table Description', and 'Table Type' (Transparent table). Buttons for 'Apply', 'Clear', 'OK', and 'Cancel' are visible.

The screenshot shows the 'Data Source' configuration window with the 'Object Field' tab selected. A 'Lookup' dialog box is open, displaying a table with the following data:

Table Name	Description
BKPF	Accounting Document Header

The dialog box also includes fields for 'Table Name', 'Table Description', and 'Table Type' (Transparent table). A dropdown menu is open, showing options: 'Transparent table', 'Cluster table', and 'Pooled table'. Buttons for 'Apply', 'Clear', 'OK', and 'Cancel' are visible.

Rule building principles: Creating a data source

Reference tables contain the primary keys to which your main table refers to as foreign keys; a good example of this is currencies

Dependent tables are the ones that refer to your main table primary keys as foreign keys

Related Table Lookup

Table Name: ☒ Reference Tables ☐ Dependent Tables

Apply **Clear**

Table Name	Description
FAGL_TLDGRP	Ledger Group
J_1Bbranch	Business Place
PS012	Deduction reasons
PSOTP	Request Category Entity Table
T000	Clients

▼ ▼ ▲ ▲

Table Name	Description

Related Table Lookup

Table Name: ☐ Reference Tables ☒ Dependent Tables

Apply **Clear**

Table Name	Description
/CEERE/BSEG	Property tax: booked FI items
AGKO	Cleared Accounts
BSEG_CONV_TRG	BSEG, BSET & BSED Conversion Trigger
FIAPQAD_PREQ	Database table of Payment Request Qatar Public Sector
FIARQAD_CRV_HD	Cash Receipt Voucher Header table

▼ ▼ ▲ ▲

Table Name	Description

Rule building principles: Creating a data source



In case the main table has no check relationship, then use “Add Additional Join Condition”

Add Additional Join Condition

Table: Field: = Table: Field:

Data Source

Save

Timeframe 02/01/2015 ID 50006229 Last Modified On

General **Object Field** Adhoc Query Connector Attachments and Links

*Sub Scenario: *Connection Type:

Parameters

Main Connector:

Main Table:

Select Base Table:

Tables
BSEG

Join Conditions				
Add Additional Join Condition		Remove Join Condition		
Table	Field Name	=	Table	Field Name
BKPF	BELNR	=	BSEG	BELNR

Rule building principles: Creating a data source

Reminder: You can join up to 5 transparent tables

Additional fields can be selected for every joined table

If you remove a join, all related fields will be removed

[illegible]

Rule building principles: Creating a data source

Field descriptions can be adapted to business requirements

Fields							
BSEG ▾		Select Additional Table Fields					
Field ID	Source Table	Source Field	Key	Field Type	Ref Field ID	Amount or Quantity	Field Description
00000001	BKPF	BKPF-BELNR	<input checked="" type="checkbox"/>	C	00000000		Accounting Document Number
00000003	BKPF	BKPF-/SAPF15/STATUS	<input type="checkbox"/>	C	00000000		
00000004	BKPF	BKPF-ADISC	<input type="checkbox"/>	C	00000000		Indicator: entry represents a discount document
00000005	BKPF	BKPF-AEDAT	<input type="checkbox"/>	D	00000000		Date of the Last Document Change by Transaction
00000006	BKPF	BKPF-ARCID	<input type="checkbox"/>	C	00000000		Extract ID Document Header



Consider making the field descriptions smaller (yet still meaningful) so they will allow more columns to easily fit for better display of exceptions

Do this before you assign the data source, as you will not be able to easily change it later

Rule building principles: Creating a data source

Use ad hoc queries to be sure you get the data you expect

A typical process might be to define the data source, test it with an ad hoc query, refine it, and continue as needed until it is what you want

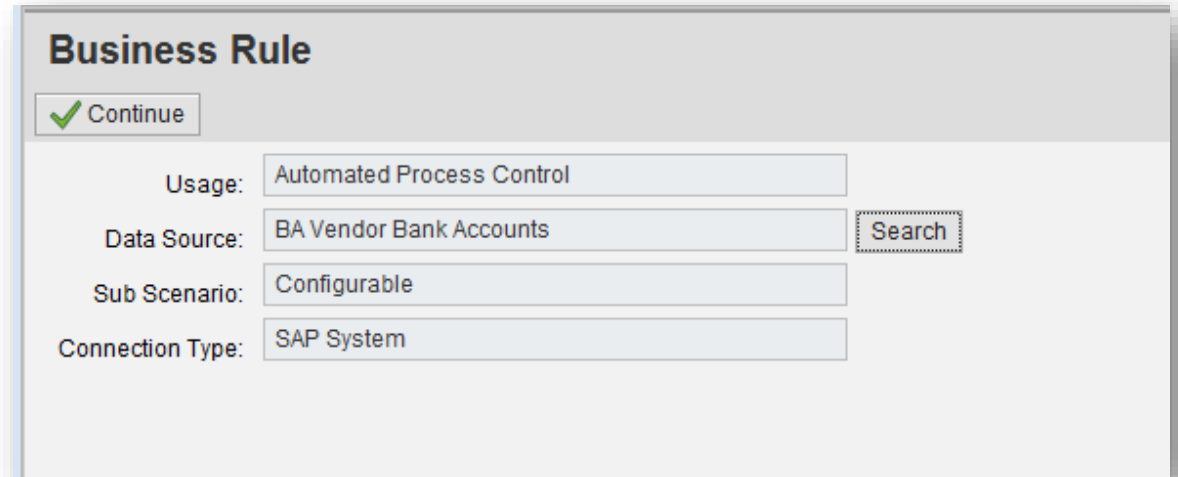
Only then set your new data source to Active

The screenshot displays the 'Data Source' configuration window in SAP. The 'Adhoc Query' tab is selected, showing the 'Target Connector' set to 'T90CLNT090' and 'Max. Rows' set to '100'. An 'Execute Query' button is visible. Below this, the 'Filter Fields' section is empty. The 'Results' section shows a table with the header 'Accounting Document Number' and three rows of data, all containing the value '0100000000'. An 'Export' button is located above the results table.

Accounting Document Number
0100000000
0100000000
0100000000

Rule building principles: Selecting a data source

The first step in creating a business rule always requires is to select an active data source



The image shows a 'Business Rule' configuration window. It has a title bar 'Business Rule' and a 'Continue' button with a green checkmark. Below the title bar, there are four input fields: 'Usage' with the value 'Automated Process Control', 'Data Source' with the value 'BA Vendor Bank Accounts', 'Sub Scenario' with the value 'Configurable', and 'Connection Type' with the value 'SAP System'. To the right of the 'Data Source' field is a 'Search' button.

Field	Value
Usage	Automated Process Control
Data Source	BA Vendor Bank Accounts
Sub Scenario	Configurable
Connection Type	SAP System



If you do not find the data source you expect, check that it is active as of the period for which you are defining the business rule

Rule building principles: Choosing a category

Value Check – Monitoring database values

Change Log Check – monitoring changes from change log

Business Rule: Step 1 of 9 (Basic Information)

< Previous

Next >

Save

1

2

3

4

5

6

7

8

9

Basic Information

Data for Analysis

Filter Criteria

Deficiency Criteria

Conditions and Calculations

Output Format

Technical Settings

Ad-hoc Query

Attachment and Links

Timeframe

02/01/2015

General

* Name:

Mw_Test_BR

* Valid from:

01/01/2015

* Description:

Mw_Test_BR

* Valid to:

12/31/9999

* Category:

Value Check

Usage:

Automated Process Control

* Analysis Type:

Change Log Check

Data Source:

BA Vendor Bank Accounts

* Status:

Active

Sub Scenario:

Configurable

Connection Type:

SAP System

Data Source Status:

Active

Connectors

Target Connector	Main Connector
XD3CLNT800	<input checked="" type="checkbox"/>

Search Term

Term 1:

Term 2:

Term 3:

Term 4:

Term 5:

Rule building principles: Selecting an analysis type

Changes – Monitoring changes on the selected field from change log

Number of Changes – Monitor the number of changes made to a field

Review Required for Changes – No specific field, the entire result is routed for review if any changes found

Monitor – Monitor the specified field's values in change log

Pattern – Monitor data value pattern of change log across multiple fields at a specific date/time

Business Rule: Mw_Test_BR, Step 1 of 9 (Basic Information)

< Previous Next > Save

1 Basic Information 2 Data for Analysis 3 Filter Criteria 4 Deficiency Criteria 5 Conditions and Calculations 6 Output Format

Timeframe 02/01/2015

General

* Name: Mw_Test_BR

* Description: Mw_Test_BR

* Category: Change Log Check

* Analysis Type: Changes

* Status: Changes

Search Term

Term 1: Term 3: Term 4: Term 5:

* Valid from: 01/01/2015

* Valid to: 12/31/9999

Usage: Automated Process Con

Data Source: BA Vendor Bank Accounts

Sub Scenario: Configurable

Connection Type: SAP System

Data Source Status: Active

Connectors

Target Connector	Main Connector	Applied
XD3CLNT800	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



Please note that the general principles for changes logged in SAP apply accordingly

Rule building principles: Selecting the data for analysis

Keep in mind that the same data source can be used with different business rules

Here, you can refine the specific fields to be used for this business rule

Business Rule: Mw_Test_BR, Step 2 of 9 (Data for Analysis)

< Previous Next > Save ?

1 Basic Information **2 Data for Analysis** 3 Filter Criteria 4 Deficiency Criteria 5 Conditions and Calculations 6 Output Format

Timeframe 02/01/2015

Available Fields	Selected Fields																					
<table border="1"><thead><tr><th>Field Description</th></tr></thead><tbody><tr><td>Name 1</td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr></tbody></table>	Field Description	Name 1										<table border="1"><thead><tr><th>Field Description</th></tr></thead><tbody><tr><td>Account Number of Vendor or Creditor</td></tr><tr><td>Client</td></tr><tr><td>Bank Keys</td></tr><tr><td>Bank account number</td></tr><tr><td>Bank country key</td></tr><tr><td>Name of Person who Created the Object</td></tr><tr><td>Central Deletion Flag for Master Record</td></tr><tr><td> </td></tr><tr><td> </td></tr></tbody></table>	Field Description	Account Number of Vendor or Creditor	Client	Bank Keys	Bank account number	Bank country key	Name of Person who Created the Object	Central Deletion Flag for Master Record		
Field Description																						
Name 1																						
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Client																						
Bank Keys																						
Bank account number																						
Bank country key																						
Name of Person who Created the Object																						
Central Deletion Flag for Master Record																						

Navigation buttons: > >> < <<

Rule building principles: Selecting filter fields

Select which fields will be used as filters in this particular business rule

Select/Unselect Filters

Filter Fields

Field Description	Select
Account Number of Vendor or Creditor	<input checked="" type="checkbox"/>
Client	<input type="checkbox"/>
Bank Keys	<input type="checkbox"/>
Bank account number	<input checked="" type="checkbox"/>
Bank country key	<input checked="" type="checkbox"/>
Name of Person who Created the Object	<input type="checkbox"/>
Central Deletion Flag for Master Record	<input type="checkbox"/>
Name 1	<input type="checkbox"/>

OK

Cancel

Rule building principles: Defining deficiencies

When using a change log, you must select a handler to return the data you want



When in doubt, select the SCU3 in the list and try it!

Select/Unselect Deficiency

Handlers

Select Handler Remove Handler

Table Name	Handler	Handler Type	Description
LFBK			
LFA1			

Deficiency Fields

Field Description

pe Currency

Select/Unselect Deficiency

Handlers

Handler	Handler Type	Description
KRED	Object Class	KRED
KRED_N	Object Class	Planned changes: Vendor master
LFBK	SCU3	Get all change logs about the table as SCU3

OK Cancel

Deficiency Fields

Field Description	Select
Bank Keys	<input checked="" type="checkbox"/>

OK Cancel

Rule building principles: Defining calculated fields

You may wish to use BRF+ for more complex logic



Create the PC business rule first with a calculated field deficiency condition. This will create a BRF+ rule, available for enhancing in BRF+ framework to express additional logic.

The screenshot shows the SAP BRF+ rule builder interface. The top navigation bar includes buttons for '< Previous', 'Next >', and 'Save'. Below this is a progress bar with steps 1 through 8. Step 5, 'Conditions and Calculations', is currently selected and highlighted in blue. The main area is divided into two panes. The left pane shows the 'Timeframe' as '02/01/2015' and the 'Deficiency' as 'Bank Keys'. Below this is the 'BRF Plus Functions' section with buttons for 'Condition', 'Open', 'Delete', 'Move Up', and 'Move Down'. A table with one row and one column labeled 'Seq. Number' is visible. The right pane is titled 'Additional Filter' and contains a table of 'Business Rule Fields'.

Field Description	BRFplus Object Name	BRFplus Data Type
Account Number of Vendor or Creditor	BR50006230_00000002	Text
Client	BR50006230_00000004	Text
Bank Keys	BR50006230_00000005	Text
Bank account number	BR50006230_00000006	Text
Bank country key	BR50006230_00000007	Text

Below the table are buttons for 'Check Syntax' and 'Switch to Normal Mode'. At the bottom of the right pane is a 'Formula' section with a row of buttons for 'Amount', 'Quantity', 'Number', 'String', 'Date', 'Date Duration', and 'Is initial'. Below these are buttons for logical operators: '>', '=', '<', '<>', '>=', '<=', '&', '+', '-', '*', '/', '(', ')', 'AND', 'OR', 'NOT', and 'IF'. At the very bottom right are 'OK' and 'Cancel' buttons.

Rule building principles: Select the output fields

Adapt output fields and sequence to the business requirements

Business Rule: Mw_Test_BR, Step 6 of 9 (Output Format)

< Previous Next > Save

1 Basic Information 2 Data for Analysis 3 Filter Criteria 4 Deficiency Criteria 5 Conditions and Calculations **6 Output Format** 7 Technical Settings

Timeframe 02/01/2015

Deficiency: [Empty]

Select/Unselect Output Fields

Field Description	
Deficiency Sequence Number	
Account Number of Vendor or Creditor	
Bank account number	
Bank country key	
Deficiency Field Description	
Change Log Change Type Text	
Changed text	
Changed On	
Changed At	
Changed by	

Select/Unselect Output Fields □ ×

Output Fields

Select All Unselect All

Field Description	Select
Account Number of Vendor or Creditor	<input checked="" type="checkbox"/>
Bank account number	<input checked="" type="checkbox"/>
Bank country key	<input checked="" type="checkbox"/>
Central Deletion Flag for Master Record	<input type="checkbox"/>
Client	<input type="checkbox"/>
Name 1	<input type="checkbox"/>
Name of Person who Created the Object	<input type="checkbox"/>

Rule building principles: Selecting the technical settings

Deficiency Calculation:

Remotely – in the plugin system

Locally – in GRC (passing plugin data to GRC for calculation)

Communication Mode:

Asynchronization – job is triggered in plugin system, call completes without results, and passes them back to GRC when available (requires bidirectional RFCs)


Synchronization – job triggered in plugin system, and call returns with results

Business Rule: Mw_Test_BR, Step 7 of 9 (Technical Settings)

< Previous Next Save

1 2 3 4 5 6 7
Basic Information Data for Analysis Filter Criteria Deficiency Criteria Conditions and Calculations Output Format Technical Settings

Timeframe 02/01/2015



Where to Calculate Deficiency: ☐ Remotely ☒ Locally

Communication Mode: ☐ Asynchronization ☒ Synchronization

Change Log Type: ☐ Insert ☒ Update ☐ Delete

Max. No. of Records to Analyze:

Rule building principles: Using ad hoc queries to test your results

Run the ad hoc query for the business rule

Data Collection – the data is shown without applying the rule criteria

Apply Rule – the data is shown with application of the rule criteria

After the business rule is the way you want it, make it active and then assign it to a control, if desired, and schedule it

The screenshot displays the SAP Business Rule Designer interface, specifically the 'Ad-hoc Query' tab (step 8). The interface includes a navigation bar at the top with steps 1 through 8. Below the navigation bar, the 'Timeframe' is set to '02/01/2015'. The 'Target Connector' is 'XD3CLNT80C'. The 'Data Collection' dropdown menu is open, showing 'Apply Rule' and 'Data Collection' options. The 'Max. Rows' is set to '100'. The 'Timeframe' is set to 'Year'. The 'Year' is set to '2014'. The 'Start' button is visible.

Hands-on **activities**



Wrap-Up



Where to Find More Information

- www.sap.com/grc
- www.sap.com/about/trust-center.html
- GRC blogs: <https://blogs.sap.com/tags/237150e2-6555-4a16-b49e-e93dbf1891da/>
- SAP GRC Community: <https://community.sap.com/topics/grc>

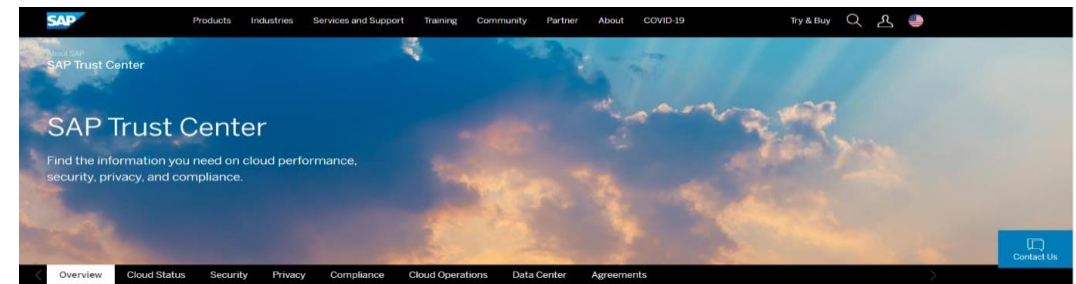
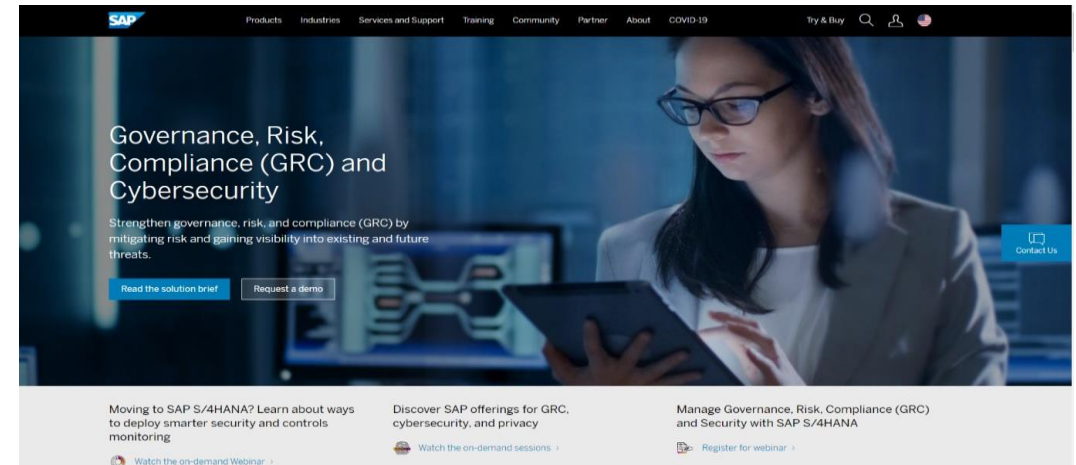
Take a look at:

- On Demand Sessions to understand GRC and Security within the context of SAP S/4HANA [On-Demand Sessions](#)
- In-depth Product Overviews with Use Cases and Demos [demand sessions](#)

[On-](#)

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Our GRC Value Calculators that explore ROI:

- SAP Access Control: <https://bin.23khosting.com/sap-grc-value-calcs/access/>
- SAP Process Control: <https://bin.23khosting.com/sap-grc-value-calcs/processcontrol/>
- SAP Risk Management: <https://bin.23khosting.com/sap-grc-value-calcs/risk/>
- SAP Audit Management: <https://bin.23khosting.com/sap-grc-value-calcs/audit/>
- SAP Business Integrity Screening: <https://bin.23khosting.com/sap-grc-value-calcs/businessintegrity/>

Key Points to Take Home

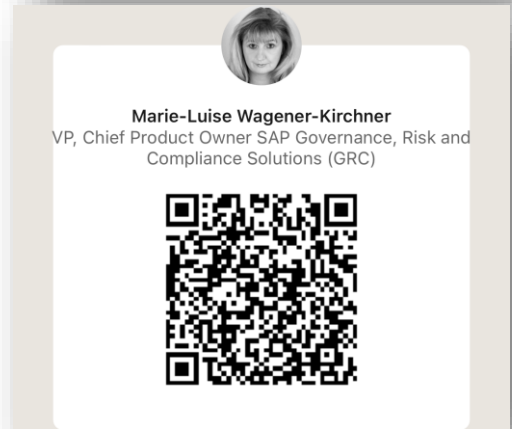
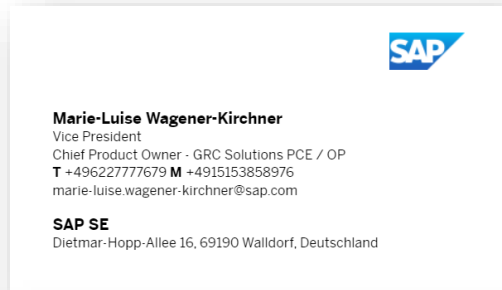
CCM functionality in SAP Process Control can be used for automating control performance, monitoring, and tests of effectiveness

Process Control can connect to a variety of SAP ABAP, non-ABAP, and non-SAP systems to return exceptions or violations in near-real time

You can create data sources using a variety of sub scenarios such as configurable, programmed, HANA, BW query, SOD integration, and more

Carefully choose the validity dates of data sources, business rules, and assignment of rules to controls to avoid later problems

Thank you! Any Questions?



Please remember to complete
your session evaluation.

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