

Using Process Control to Create Effective Continuous Control Monitoring

Emily Damson, Director – SAP Security and Controls
Eli Lilly and Company

SAPinsider
Las Vegas

2023

SAPinsider

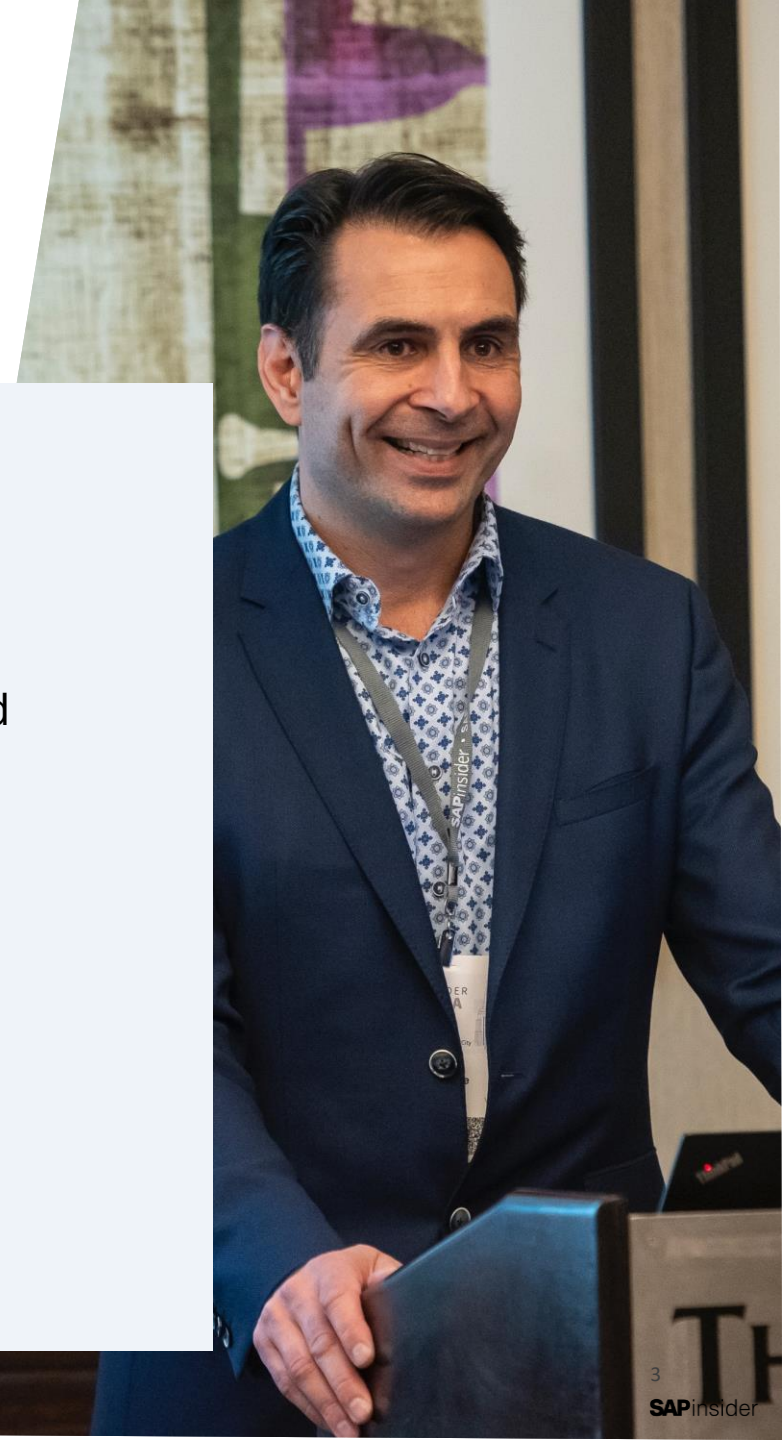


In This Session

- Understand what Continuous Control Monitoring (CCM) is
- Real examples of CCMs used today at Lilly to automate control performance
- Considerations for developing CCMs
- Discuss use of Adobe Offline Form to improve end user adoption
- Key reports used for supporting CCMs
- Impact on Business Rules with our Migration to S/4

What We'll Cover

- Background on Eli Lilly and Company
- Overview of Process Control: Continuous Control Monitoring
- How Lilly uses CCM to automate business controls and detect system issues
- Use of Adobe Offline Forms to increase usability
- Review tips and key Reports used for troubleshooting and resolving issues
- Impact of the migration to S/4 on business rules



About Eli Lilly and Company

Founded on May 10, 1876 in Indianapolis, IN by Colonel Eli Lilly

Lilly discovers, develops, manufactures, and markets human pharmaceuticals

Therapeutic areas include Diabetes, Immunology, Oncology, and Neuroscience

Approximately 38,000 employees worldwide

7 Manufacturing and 7 Research & Development locations globally

Products marketed in 120 countries

Lilly



SAP Landscape at Eli Lilly and Company



Single global instance of SAP

- 72 countries; 3 regional shared service centers
- Many ECC SAP modules and other SAP components implemented, including Single Sign-On
- Migrating to S/4 HANA in February 2024

SAP GRC footprint (GRC 12.0, SP16)

- SAP Access Control
 - Integrated with SAP Identity Management (IDM) for security end-user provisioning
 - Utilize Firefighter and ARA for SOD analysis
- SAP Process Control
 - SOX Control Framework documentation
 - Continuous Control Monitoring
 - Manual Control Performance
 - Surveying for Financial Control Operations

Overview of Continuous Control Monitoring (CCM) in GRC Process Control

What is Continuous Control Monitoring?



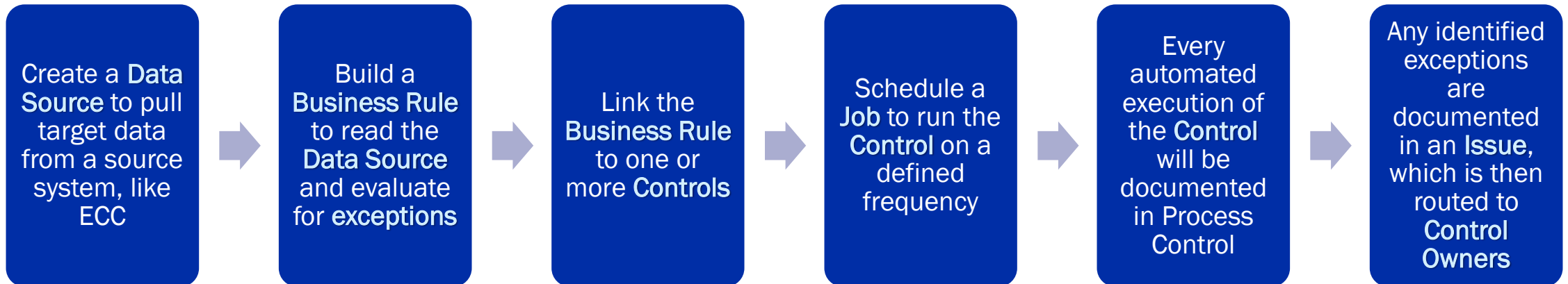
Continuous Control Monitoring (CCM)



Use of the SAP Process Control technology to build and schedule a control to monitor a target system for specific exceptions on a regular interval.

The scheduled executions of the CCM for the control are documented within SAP PC (essentially becoming control evidence), and don't require user interaction.

Only when an exception is identified does the system require user interaction, evaluation and correction



Continuous Control Monitoring (CCM)



Who can get the alerts for exceptions?

- Anyone (assigned as a Control Owner)

What kind of data can you monitor with Continuous Control Monitoring?

- Tables values
- Table changes (via change logs)
- SAP Queries
- BW Queries
- ABAP Reports
- HANA
- SoD Integration (with SOD rules in Access Control)
- Event Triggers

When can you monitor the data?

- Hourly, Daily, Weekly, Monthly, Quarterly, Semi-Annually, Annually – you pick!

How Lilly uses CCM to monitor for issues in SAP and in GRC

Lilly uses CCM in SAP Process Control to:

- Monitor activity in **SAP ECC and 18 of the other SAP systems**, including GRC itself
- Monitor activity in **production and non-production systems** (200+ connectors from our production GRC environment)
- Monitor a variety of controls: **SOX, Segregation of Duties and Operational**
- Monitor business process, master data, and configuration controls in Finance, Supply Chain, HR, Security and IT
- Identify **exceptions** only

Keys to implementing successful Continuous Control Monitoring (CCM)



- **Focus monitoring on exception based controls and monitoring.** CCM is most effective when it is allowed to run controls that don't identify results every time that a BR runs.
- **Work with data from a single system.** CCM can work with multiple files from a system, but cannot compare data from multiple systems.
- **Control should run on a repeatable schedule.** CCMs work best when there is a standard cadence and schedule that can be planned and followed. There is flexibility for on-demand execution but it requires user intervention.

Examples of Automated Controls using CCMs

Security

- Monitor roles containing the word 'Display' to ensure that they do not have activity 01 or 02 (change or create)
- Monitor access to ensure that certain combinations of roles do not occur
- Monitor key authorizations to check that they do not get changed

IT

- Monitoring that the production system change option has not been set to modifiable (T000)
- Monitor Firefighter ID assignments that are longer than 30 days.
- Monitor for users who are assigned the ALL or SAP_ALL role
- Monitor for users who have various key security access
- Monitor for password changes on super user accounts

Examples of Automated Controls using CCMs

General Accounting

- Monitor for threshold value changes for journal vouchers
- Monitor for Electronic Bank Statement errors
- Monitor for key account changes

Order to Cash

- Perform Billed not Booked and Shipped Not Billed controls monthly
- Monitor that Free of Charge orders are not booking any revenue

Purchase to Pay

- Monitor that Authorization Limits for Purchase Orders approvals do not change unexpectedly
- Monitor AP transactions to ensure that Invoice Vendor is the same as the PO Vendor or PI Vendor.
- Identify POs that are created for a vendor that has been flagged for deletion or blocked for posting at co code level.

Manufacturing

- Send an alert when a sensitive movement type occurs.



Additional Keys to Successful CCM

- **Gain alignment on a prioritized list of controls** to be automated with key business users and audit.
- **Align with business and audit resources on how the control is performed and audited.** Sometimes how the control is manually performed, how it is documented and how it is audited is different. Getting everyone together can be helpful in designing it correctly from the start.
- **Don't limit yourself to SOX controls.** We've automated many operational system checks to identify potential problems before they become problems.
- **Create a controlled environment.** Limit or eliminate the ability to change business rules in production to improve the audit reliability on the results. (Lilly uses transports to move business rule updates and require documentation for each change)
- **Educate your end users.** Make sure that they understand what to do with the alerts.

Monitor Process Controls, too!

Don't set it and forget it. You'll need to do regular review to ensure no errors.

Questions we asked ourselves daily...

- How do we know that business rules ran correctly yesterday? What job steps need to be reprocessed?

Answer: Business rule that delivers job results daily of all job steps executed on previous day.

- How do we know emails are still being sent by the system?

Answer: Business rule that delivers a daily “ping” from the Process Control system

- How can we be sure the Business Rules haven't been updated? (Lilly has policy that BR updates should not be made directly in production but should follow change control procedures)

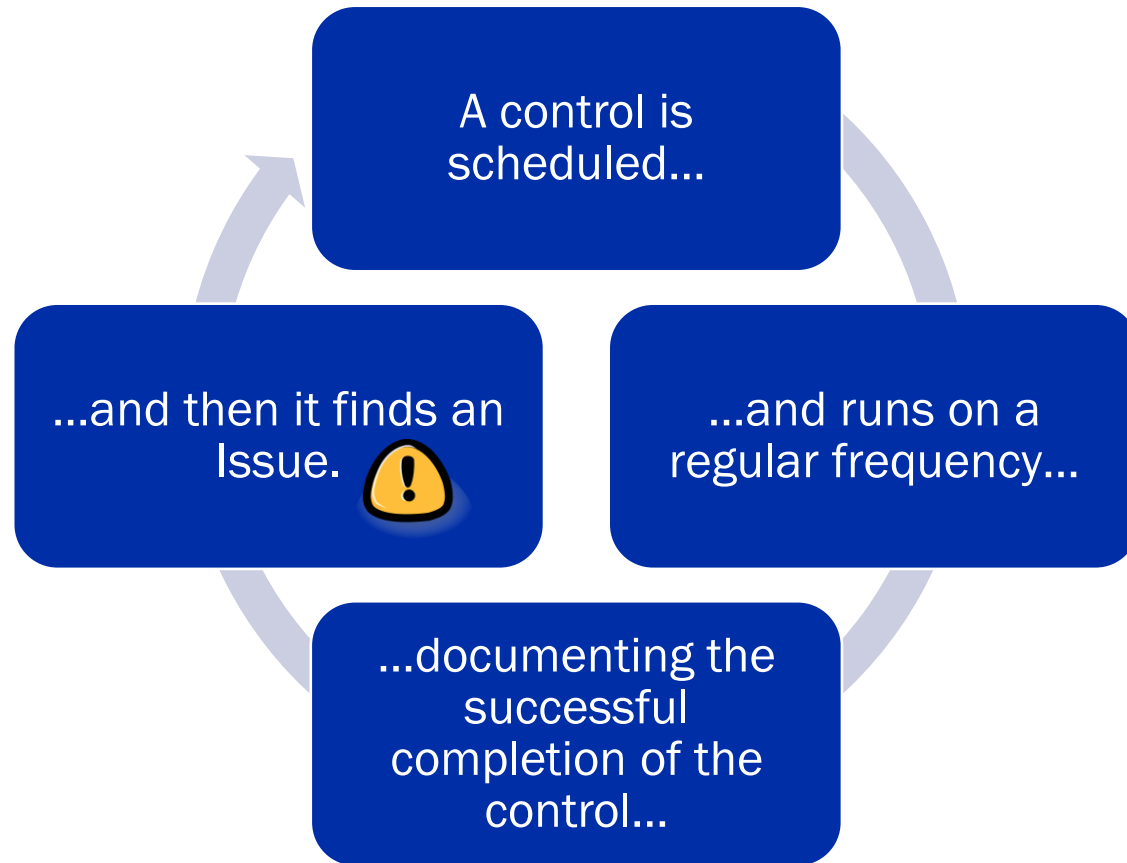
Answer: Business rule that monitors changes made directly to Data Sources or Business Rules.

- How do we know if Control Owners leave the company and are no longer valid Control Owners?

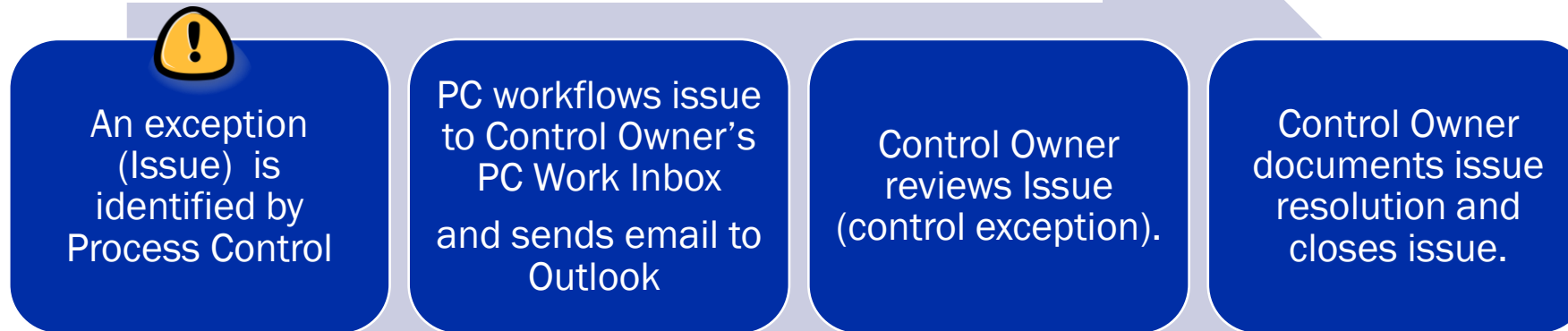
Answer: Business rule monitors users who are assigned as owner, but no longer have appropriate security.



Sending the Alert



Process Control found an issue... now what?



Audit has access to all control executions and details from exceptions

Using Adobe Offline Form to send Issues

**Improve end user experience with
GRC Process Control by using Adobe
Offline Forms**



Customized email template

Initially we implemented slightly customized the email template to include links to the GRC system.

The screenshot displays an email interface with a header bar containing a notification icon and text: "This message was sent with High importance. If there are problems with how this message is displayed, click here to view it in a web browser." Below the header, the email metadata is shown: "From: [Redacted]", "To: Emily Swaim Damson", "Cc:", and "Subject: ACTION REQUIRED: New work items appear in your SAP PC Work Inbox". The main body of the email starts with a paragraph: "A SAP Process Control e-mail notification has been created and requires control issue resolution in the GAP environment." This is followed by a section titled "Overview" in a light blue box. Below the title, there is a blue hyperlink: "ACTION REQUIRED: Automated Monitoring Notice: Corp - SAP Business Process Controls - Local Control - MON SML OP 003". An annotation box with a blue border and black text, "Issue link includes Organization and Control number", has a blue arrow pointing to this link. Further down, the text reads: "Sign into [SAP Process Control Work Inbox](#) to address the above control(s)." This is followed by a "Reference material:" section with two bullet points: "- The [CONTROL ISSUE RESOLUTION JOB AID](#) references the expected process requirements to resolve control issues and contains links to the Process Controls navigation training documentation." and "- The [CHANGE CONTROL OWNER AND LINKAGE JOB AID](#) is used to change the control owner for a particular rule." Below this, it says: "If you should have questions regarding this e-mail notification, please forward this e-mail notification with your question to the Financial Controls Organization Outlook group list [Redacted]". The email concludes with the text: "Please do not reply to this system-generated e-mail." An annotation box with a blue border and black text, "Email content edited to include links to help and contacts", is positioned at the bottom right of the email body.

Issue link includes Organization and Control number

Email content edited to include links to help and contacts

Customized email template

 This message was sent with High importance.
If there are problems with how this message is displayed, click here to view it in a web browser.

From: [REDACTED]
To:  Emily Swaim Damson
Cc:
Subject: ACTION REQUIRED: New work items appear in your SAP PC Work Inbox

Works well at notifying our end users of issues, but requires them to follow links into GRC and have some training or knowledge of how to resolve issue

A SAP Process Control e-mail notification has been created and requires control issue resolution in the GAP environment.

Overview

[ACTION REQUIRED: Automated Monitoring Notice: Corp - SAP Business Process Controls - Local Control - MON SML OP 003](#)

Sign into [SAP Process Control Work Inbox](#) to address the above control(s).

Reference material:

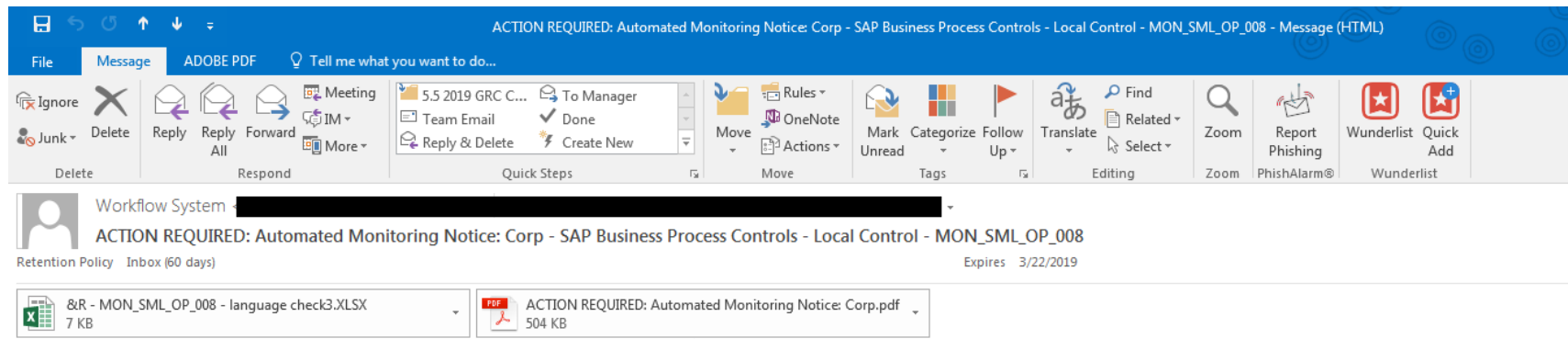
- The [CONTROL ISSUE RESOLUTION JOB AID](#) references the expected process requirements to resolve control issues and contains links to the Process Controls navigation training documentation.
- The [CHANGE CONTROL OWNER AND LINKAGE JOB AID](#) is used to change the control owner for a particular rule.

If you should have questions regarding this e-mail notification, please forward this e-mail notification with your question to the Financial Controls Organization Outlook group list [REDACTED]

Please do not reply to this system-generated e-mail.

Implemented Adobe Offline Form for notifications

Improve the end user experience with use of Adobe Offline Form delivered via email to review issues and respond without needing to log into GRC to respond to Issues.



**Control Exceptions
identified by CCM**

**Adobe form to
respond to
issue**

A SAP Process Control issue has been created and requires control issue resolution in the GAP environment.

Please open and complete the attached Adobe form. When you click Submit on the Adobe form, it will create a new email. This email should be sent to complete the closure of the issue. It is only at this time that the issue will be closed.

Monitoring Notice: Corp - SAP Business Process Controls - Local Control - MON_SML_OP_008

Please note that you cannot forward this email to another user for closure. If you feel that you have received this email in error, please contact the sender. If you would like the issue to be assigned to another user, please use the 'Reassign' button in the SAP Process Control Work Inbox.

If you want to see your Process Control Work Inbox, click on [SAP Process Control Work Inbox](#) to address the above control(s).

Reference material:

- The [CONTROL ISSUE RESOLUTION JOB AID](#) references the expected process requirements to resolve control issues and contains links to the Process Controls navigation training documentation.
- The [CHANGE CONTROL OWNER AND LINKAGE JOB AID](#) is used to change the control owner for a particular rule.

If you should have questions regarding this e-mail notification, please forward this e-mail notification with your question to the Financial Controls Organization Outlook group list [Financial Controls Organization Outlook](#).

Please do not reply to this system-generated e-mail.

Responding to Issue via Adobe Offline Form

From the email, the end user can open the list of exceptions, and respond to the issue itself.

Exceptions, listed in Excel

Sequence Number		
1	Sequence Number	Deficiency Type
2	00000001	Medium
3	00000002	Medium
4	00000003	Medium
5	00000004	Medium
6	00000005	Medium
7	00000006	Medium
8	00000007	Medium
9	00000008	Medium
10	00000009	Medium
11	00000010	Medium
12	00000011	Medium
13	00000012	Medium
14	00000013	Medium
15	00000014	Medium
16	00000015	Medium
17	00000016	Medium
18	00000017	Medium
19	00000018	Medium
20	00000019	Medium
21	00000020	Medium
22	00000021	Medium
23	00000001	Medium
24	00000002	Medium
25	00000003	Medium
26	00000004	Medium
27	00000005	Medium
28	00000006	Medium
29	00000007	Medium

R - MON_SML_OP_008 - language check3 (003) [Read-Only] - Excel

MON Monitoring: MON_SML_OP_008

Lilly

Test Period:	01/20/ 2019	Status:	Submitted
Organization:	Corp - SAP Business Process Controls	Process:	Systems Monitoring
Subprocess:			

Submit

To close this Process, click OK to save the email. Then select click OK to save the email. Attachments can be added to the Attachment and Links tab. Additional control information is available on the Control Details tab. For any questions regarding use of the form, please contact: [REDACTED]

Additional files attached to the notification comments appropriate for the situation, n.

Tabs with more information about exception

Buttons for Control Owner response

Evaluation	Issues	Regulation	Control Details	Risks	Attachments and Links
------------	--------	------------	-----------------	-------	-----------------------

Issues

Assign Remediation Plan	Close Without Plan	Reassign the issue	Void
-------------------------	--------------------	--------------------	------

Name	Priority	Status	Reported by	Reported Date	Owner
GAP - Client 100 RFC TRUSTED GRC Connectio				Jan 21, 2019	
MON_SML_OP - language che					

Issue Detail

Issue Name: * GA

Priority: * Medium

Owner: [REDACTED]

Description: Job Step Monitoring / Automated Test 42 High 0 Medium 42 Low

Type: Automated Monitoring Issue

Status: Submitted

Carryforward: No Carryforward

Benefits of Use of Adobe Offline Form

- ✓ **Still delivers notification of control issues to end user's email inbox**
- ✓ **Improves and streamlines the end user (Control Owner) experience**
 - No handoff to a system that Control Owners are not as familiar with
 - Able to complete work from email
- ✓ **Provides all the same functionality as working from the PC Work Inbox**
 - Handles responses, records attachments, date stamps of submissions/closure
- ✓ **Reduces the amount of training to understand how to navigate GRC**



Start using these Key Reports

Control Monitoring History with Ratings Report

- Provides data on all automated executions of a control, allowing you to see each time the control was executed, the results and other execution related information.
- Very useful for control owners/management to know if and when the automated CCM has run.

Monitor Issue Status Report

- Provides a view of all exceptions (issues) identified through control monitoring.
- Allows for filter and identification of Open Issues to do follow ups.

Job Monitor

- Cockpit that provides all of the details of scheduled jobs and the related jobs steps, including execution date and time, exceptions identified, job status.

Impacts from migration to S4



On the Road to S/4 HANA



Informal Testing

- ✓ Ensure that new S/4 connector will work for existing Business Rules.
- ✓ Assign S/4 development system connector and execute every Business Rule that the connector is successfully applied
 - About 20% of the Business Rules require Reconstruction (program supplied by SAP) or to be rebuilt due to table or program changes.

Formal Testing

- ✓ Ensure new S/4 connector will work for existing Business Rules
- ✓ Work with business to ensure that controls and business rules are still correct and needed
- ✓ Rebuild business rules that failed S/4 connection
- ✓ Validate Business Rule results are correct

Wrap Up

- ✓ Discussed what Continuous Control Monitoring is
- ✓ Reviewed real-life examples of CCMs in use at Lilly
- ✓ Discussed considerations for developing successful CCMs
- ✓ Discuss use of Adobe Offline Form to improve end user adoption
- ✓ Review key reports used for supporting CCMs
- ✓ Impact on Business Rules with our Migration to S/4

Where to Find More Information

Jan Gardiner, Matt Hartnett, “Everything you Need to Know About Offline Forms and SAP Process Control” (SAP Professional Journal, Aug 28, 2017)

- <https://sapinsider.org/everything-you-need-to-know-about-offline-forms-and-sap-process-control/>

SAP Note 2796362 to get more information on the Business Rule Reconstruction Program

Get information on the latest version and support pack of Process Control:

- https://help.sap.com/docs/SAP_PROCESS_CONTROL/f77342ea45c24d3f81032575e6f50d8b/c170ca49b5124849b37225865194568e.html

Key Points to Take Home

- **Continuous Control Monitoring can be used to monitor many parts of your business**
- **CCM can be used to monitor Process Control itself to detect important issues**
- **Monitoring PC for errors is critical in ensuring the system is in a good operating state, and control and compliance issues are detected correctly and timely**
- **Adobe Offline Forms can save time for Control Owners, and reduce resistance to using CCM**
- **Key troubleshooting reports can be quick to develop and will save significant time in error resolution**

Thank you! Any Questions?

Emily Swaim Damson

[*emily.damson@lilly.com*](mailto:emily.damson@lilly.com)

[**Linkedin.com/in/emilydamson/**](https://www.linkedin.com/in/emilydamson/)

Please remember to complete
your session evaluation.

SAPinsider



SAPinsider.org

PO Box 982Hampstead, NH 03841
Copyright © 2023 Wellesley Information Services.
All rights reserved.

SAP and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP SE (or an SAP affiliate company) in Germany and other countries. All other product and service names mentioned are the trademarks of their respective companies. Wellesley Information Services is neither owned nor controlled by SAP SE.

SAPinsider comprises the largest and fastest growing SAP membership group worldwide, with more than 600,000 members across 205 countries.
