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Problem Management using Lean Principles and Confluence Technology

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NLIT 2022

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Introductions

Marquita Apodaca

I have a passion for all things relating to Enterprise Architecture and Data Architecture! I have been with Sandia for 12 years and overall experience within the Department of Energy including Los Alamos National Labs and National Nuclear Security Administration for the past 20 years in various roles in IT Project Management and Enterprise Architecture. I hold certifications in The Open Group Architecture Framework (TOGAF), Scaled Agile Framework (SAFe) Product Owner/Product Manager and am a Certified Scrum Master.

Paula Schindele

I have a passion for all things relating to Quality and Process Improvement! I have been with Sandia for the past 8 years and worked in Quality over the past twenty years. I am a Juran, Villanova, and Lockheed Martin certified Black Belt. I also have extensive experience in Lean and Six Sigma and am a certified Lead Auditor for ISO 9001:2015 and AS9100D.



Problem Management Defined

The purpose of the problem management practice is to reduce the likelihood and impact of incidents by identifying actual and potential causes of incidents, and managing workarounds and known errors. (ITIL)

- Reduce the number and severity of IT service issues
- Identify underlying causes of IT service issues
- Develop solutions to identified causes
- Improve service availability and performance
- Increase Customer and User satisfaction with IT services



FY22 Challenges and Opportunities



A Retirement
And
A New Team



Understanding the Work in Progress

Record Tally

59 Open Records Problem Records

~150 open/pending
Corrective Actions

Problem Ticket Task Summary

Tasks by Problem Ticket		
Problem Summary	Task Link	Task ID
		TAS000000131787
		TAS000000131139
		TAS000000131138
		TAS000000131140
		TAS000000131174

+ Add Task

Tasks (14)



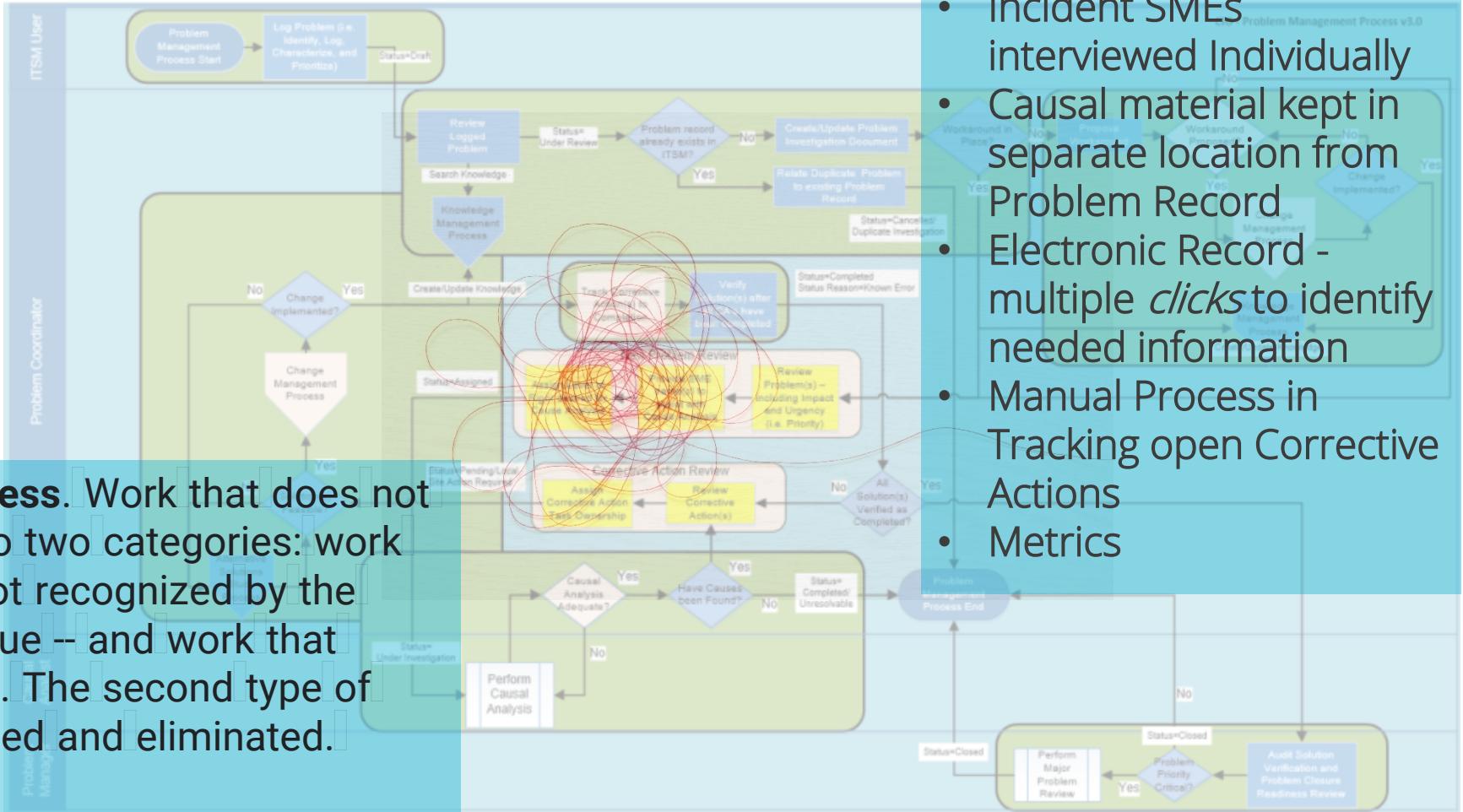
Digging for the Information

- Working from Confluence List ID Record
- SmartIT open record
- ID open task
- Contact Assignee

Evaluating the Process

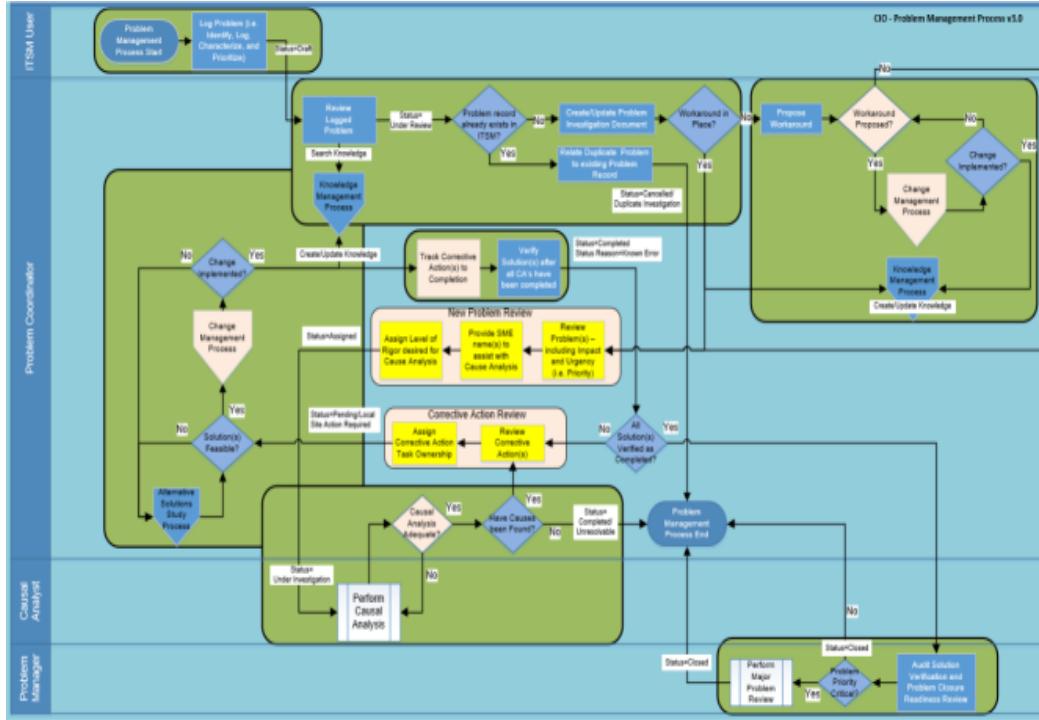


Muda means **wastefulness**. Work that does not add value is divided into two categories: work that is necessary but not recognized by the customer as adding value – and work that simply is not necessary. The second type of Muda should be identified and eliminated.

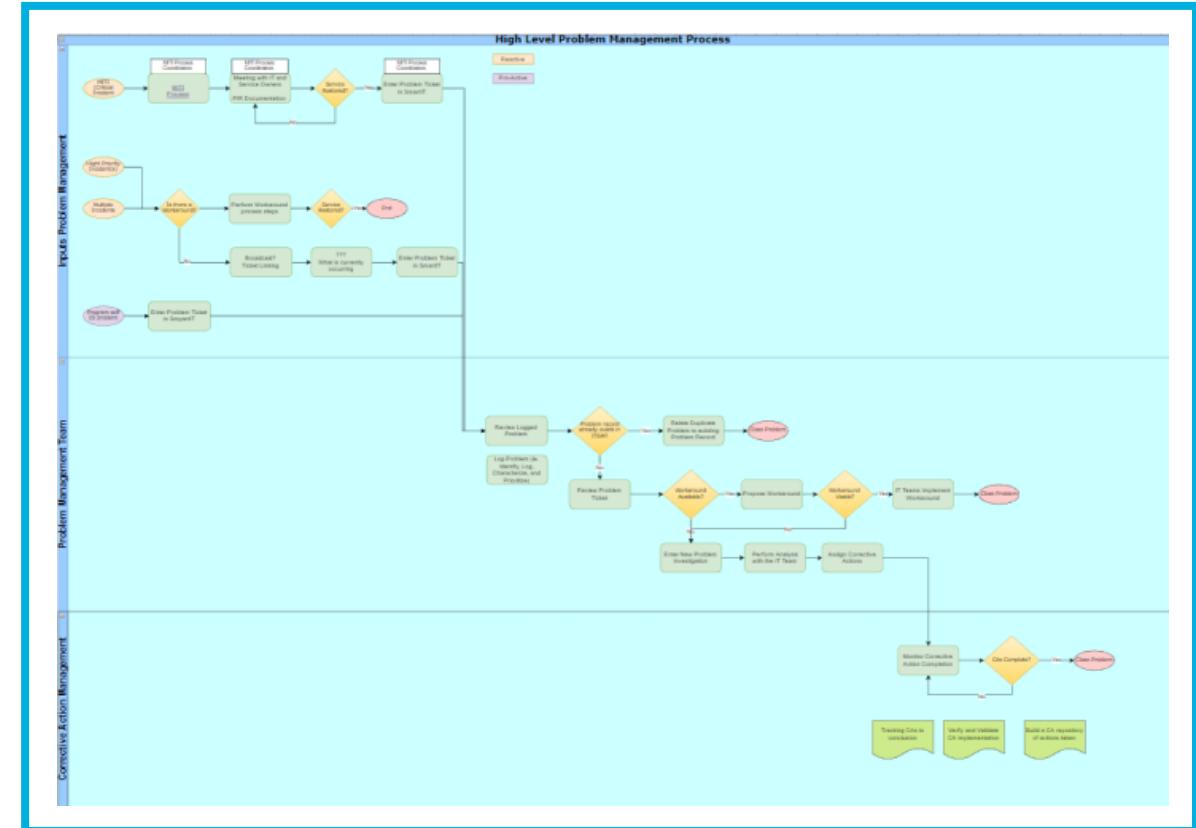


Applying LEAN to Problem Management Process

From This



To This



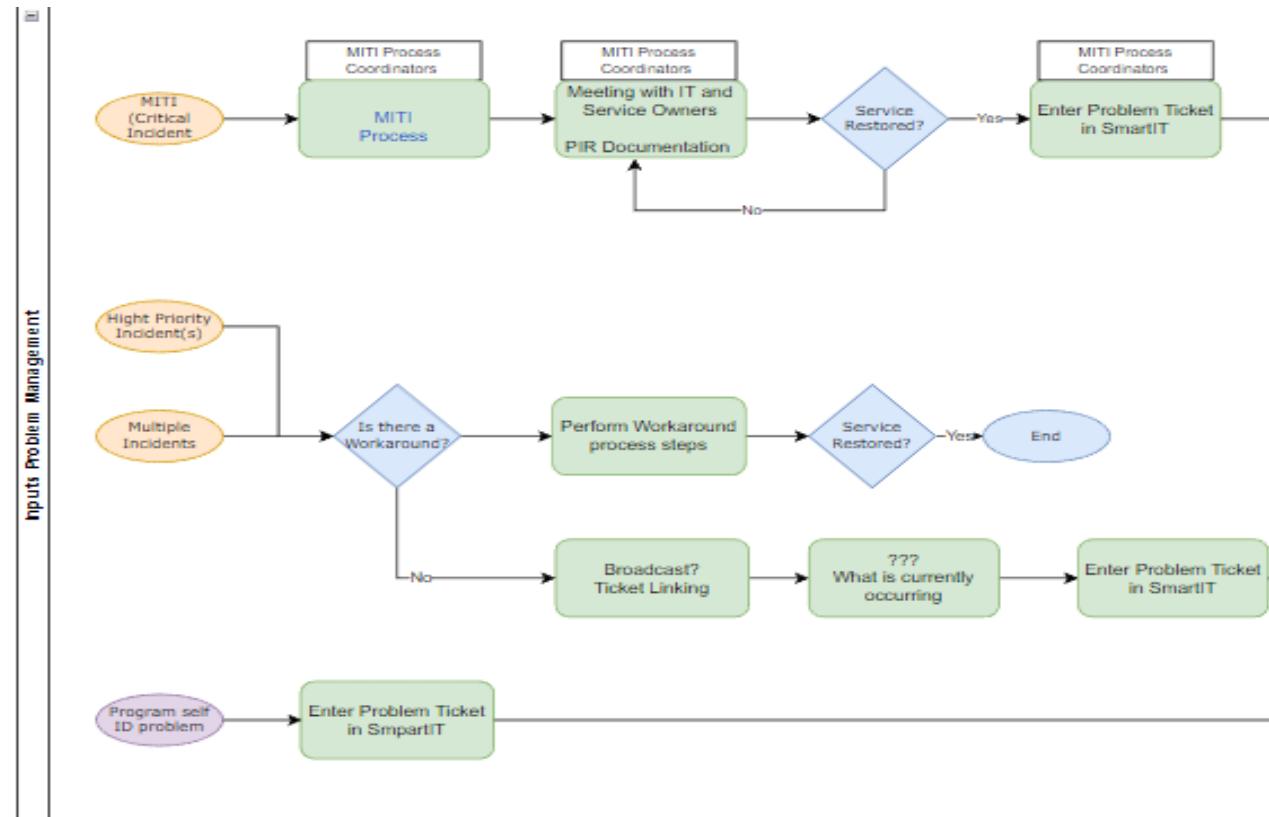
Inputs to Problem Management

Reactive Entry

- Major IT Incident (MITI)
- High Priority Incident
- Multiple Incidents

Proactive Entry

- Program Request
- Tier Board Review
- Service Review



Post Incident Review (PIR)

PIR Template Captures:

- Incident Name
- Management Roles
- SmartIT Record Numbers
- Service Restoration Team
- **TIMELINE**
 - Tasks
 - SMEs
- Critical Services
- Resolution steps
- Lessons Learned



Incident Title	
Incident #:	
Manager Approving the MITI Declaration:	
Manager Approving MITI Closure:	
Problem #:	
	Date/Time MITI Declared:
	Date/Time MITI Resolved:
	PIR Review Date:

Issue Statement

- Date/Time issue started?
- Services, applications or infrastructure affected - (report from SOC and others)
 - What task/work can no longer be performed?
 - Is the issue intermittent or constant?
- Number of people currently affected - (report from Service Owner/SME and others)
- Number of users or calls coming into the desk - (report from CCHO and others)
- What is your DR Tier? What is your RTO? Do you have a DR Plan?
- Did anything change? (e.g. scheduled change, certificate expires, patch fixes, Microsoft patch)
 - What is the related CROF?
- What communications should be issued - (Advised by CIO/Comm team)

Service Restoration Team

List all personnel ~~directly~~ involved in the restoration effort.

Team/Support Group Name (i.e., Network)	SME Name (i.e., Joseph Mauer, Jim Smith)

Timeline

Type your task here, using "(@)" to assign to a user and "||" to select a due date

Please include details including ~~status~~, ~~log entries~~, or anything else used to identify

Date	Time	SME	

MITI Emails
MITI Meeting Agendas
Sandia Duty Manager
Incident Management ITSM Page
Link to create: [Outage Record](#)

Critical Services List

Tier 0	Service Owner

What are the emergency changes submitted to resolve this issue? (list all)

What went well during the change or recovery?

Lessons Learned:

Supporting information: (i.e. Attachments, SOC Screen Shot, Email Threads or process reference)

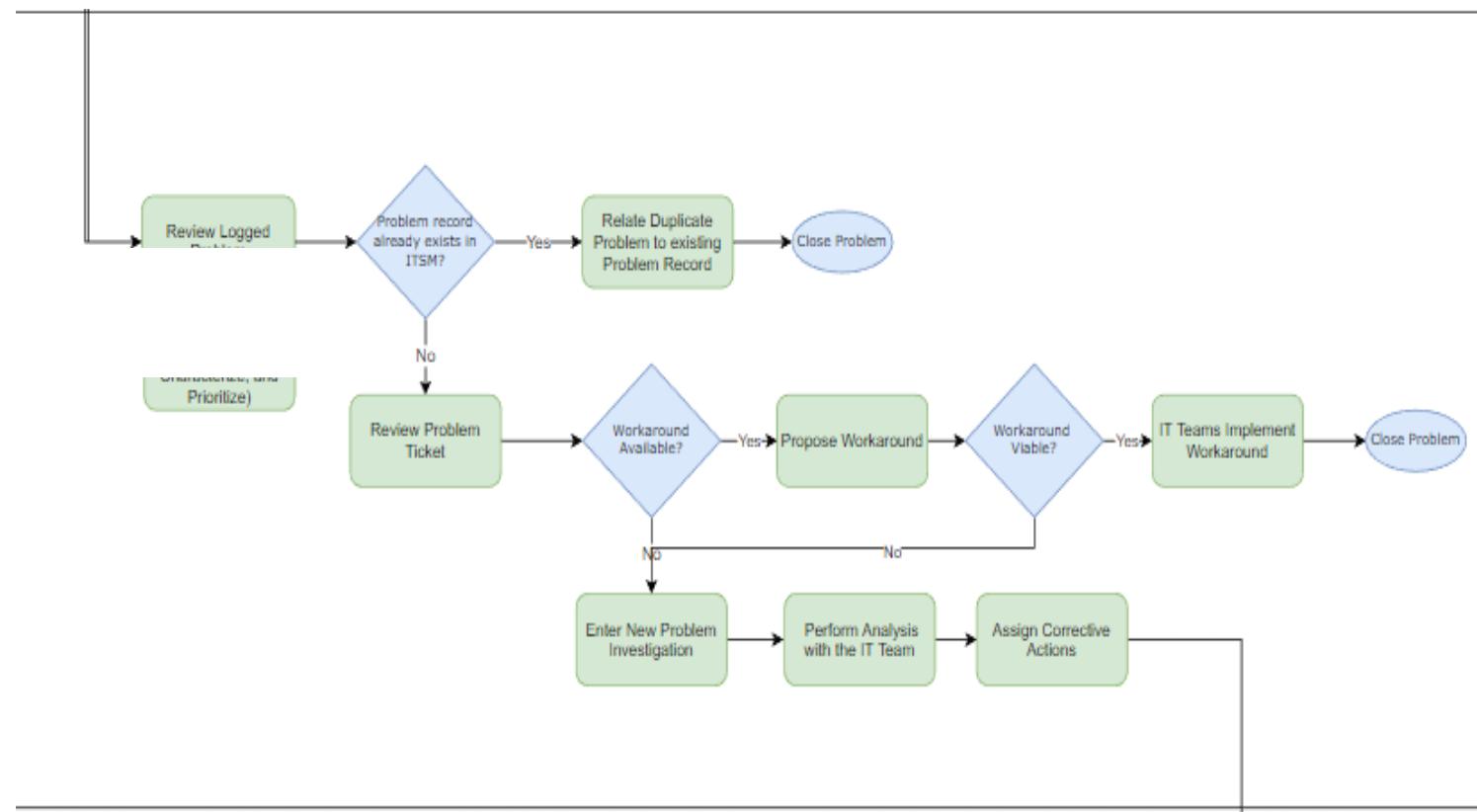


Problem Management Process



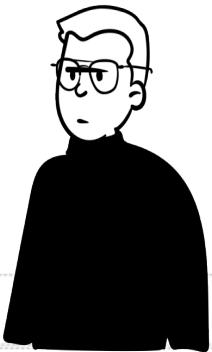
Problem Management

- Review Logged Problem and PIR report
- Open Problem Record in Confluence
 - If Problem is known relate to existing record
 - If Workaround exist, IT Team Implements, relate workaround to record
- Schedule Problem Investigation
- Hold Problem Investigation with identified SMEs
- Record Corrective Actions





Problem Investigation



Problem Template Captures:

- Problem Title
- Links to SmartIT Records
- PIR – Data
 - Services Impacted
 - Lessons Learned
- Questions on
 - Automation
 - FMEA
- Problem Statement
 - 5-Why's
- Team notes
- Corrective Actions

Page title

Cause Analysis for: PBI Ticket Link MITI Ticket Link: MITI Incident Ticket Link Date: 10 Feb 2022

PM Lead:

Services that were impacted:

- Is automated monitoring in place for the service or asset affected? What system is used _____.
- Was an FMEA completed for the service or asset? If FMEA in place was this Failure noted and what restoration was required and was it used? _____.

Lessons Learned: (from Post Incident Review (PIR) stored in MITI Ticket)

Problem Statement: _____

Problem Investigation: (5 Whys, Causal Map, etc.)

Why 1	Why 2	Why 3	Why 4	Why 5	Root Cause
1					
2					

Team Notes (Additional Information or Parking Lot Items):

Note	POC

Corrective Actions: (Actions assigned that when put in place will prevent problem from occurring in the future)

Create tasks in the CA Task column by using the icon or typing "[" then "]". Type the CA summary, using "@" to assign to a user and "//" to select a due date

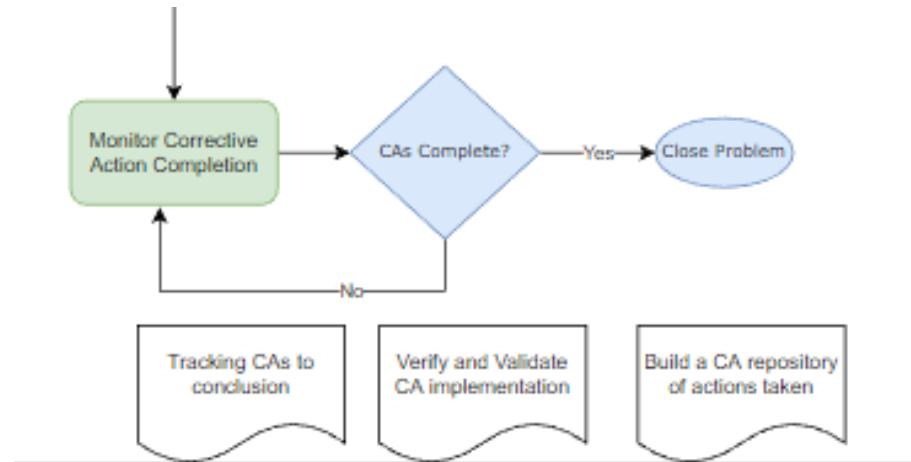
CA Number	CA Task	Reminder Date	Response
PIO#-0#	use the <input checked="" type="checkbox"/> icon or type "[" then "]"	Use Handy Reminder Macro for Reminder Date Notification	Describe the Definition of Done for the CA
PIO#--1			

Corrective Actions



Action Reporting

- Using Automated Reminders
- Visual Review of Problem Investigation Reports
- Task Report
- MITI Log Reviewed Daily in CIO Dashboard





Managing Corrective Actions

- Task Assignments generated during Problem Investigation
 - Assigned
 - Date
 - Definition of Done
- Electronic Reminders
- MITI CA Log Review

Corrective Actions: (Actions assigned that when put in place will prevent problem from occurring in the future)

Create tasks in the CA Task column by using the icon or typing "[" then "]". Type the CA summary, using "@" to assign to a user and "//" to select a due date

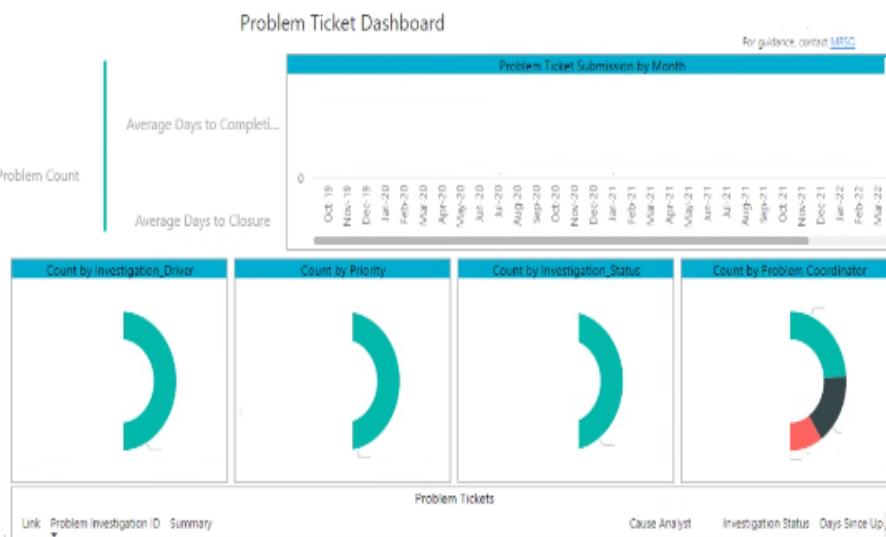
CA Number	CA Task	Reminder Date	Response
PIO#-0#	use the <input checked="" type="checkbox"/> icon or type "[" then "]"	Use Handy Reminder Macro for Reminder Date Notification	Describe the Definition of Done for the CA

Date Issue Observed	Status	Issue Description/Confluence Problem Ticket	MITI Ticket Or Incident Link	Cause Analysis Report (CAR)	Problem Ticket Link	Actual Time Between MITI (days)	FY Average Time Between MITI (days)	Rolling 90 Day MTBM	FY-nth	Change Related	CAs Status
COMPLETE		INC000003418442	5 Whys	PBI000000065612		0	14.42	14.07	12	yes	
COMPLETE		INC000003428735	5 Whys	PBI000000065611		24	14.42	14.07	11	yes	
COMPLETE		N/A	5 Whys	PBI000000064412	I	-	-	-	-	yes	COMPLETE 4/4 Complete
COMPLETE		NA	5 Whys	PBI000000065111		-	-	-	-	yes	



Metrics FY23 Plan

From This



To This



FY23 Metric Plan – Automated Reporting

- Age of Open Records
 - Age of Open Corrective Actions
 - Record Status
- Actual Time Between MITI (days)
- Rolling 90 day MTBM
- Resolution Effectiveness Reviews
 - Repeated Problems



Technology Wins the Day





Problem Investigation Templates in Confluence

Our team used Confluence Templates to create a template to record new Problem Investigations and used Labels to organize the Problem Investigations on our home page

- With templates you can create multiple Problem Investigations that follow the same format
- You can easily modify the template at any time
 - Note: Changes made to the template will only apply to new Problem Investigations
- Labels can be used to organize pages on your Confluence Space using the Content by Label Macro
- You can automatically label pages that are created from your Template



Problem Investigation Template Example

Page title



Λ---Name your investigation first with the incremental number then your Problem: 0# - Problem Investigating. Make sure to delete this section afterward 😊 ---/Λ

Cause Analysis for: PBI Ticket Link **MITI Ticket Link:** MITI Incident Ticket Link **Date:** ← Change this

PM Lead:

Services that were impacted:

- Is automated monitoring in place for the service or asset affected? What system is used
_____.
- Was an FMEA completed for the service or asset? If FMEA in place was this Failure noted and what restoration was required and was it used?
_____.

Problem Investigation Activities

Activity	POC	Date	Update
Capture communication, meeting and communication information here			

Lessons Learned: (from Post Incident Review (PIR) stored in MITI Ticket)

Problem Statement: _____



Problem Investigation Template Example Continued

Problem Investigation: (5 Whys, Causal Map, etc.)					
Why 1	Why 2	Why 3	Why 4	Why 5	Root Cause
1					
2					
3					
4					
5					

Arrow Toolbar

Team Notes (Additional Information or Parking Lot Items):

Note	POC

- Capture the 5 why's, can either be vertical or horizontal
- Parking lot area to capture info that is relevant to the 5 why's

Problem Investigation Template Example Continued

Corrective Actions: (Actions assigned that when put in place will prevent problem from occurring in the future)

Create tasks in the CA Task column by using the icon or typing "[" then "]". Type the CA summary, using "@" to assign to a user and "//" to select a due date

CA Number	CA Task	Reminder Date	Response
PIO#-0#	use the <input checked="" type="checkbox"/> icon or type "[" then "]"	Use Handy Reminder Macro for Reminder Date Notification	Describe the Definition of Done for the CA
PIO#-+1			

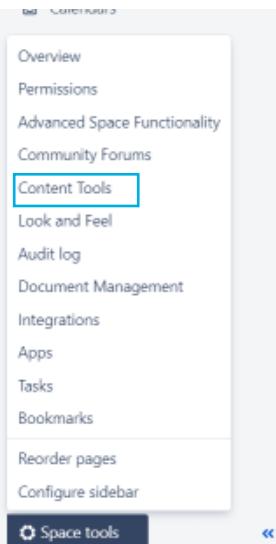
Extent of Condition (EoC) Review:

	Pre-Causal Analysis	Post-Causal Analysis
Situation:	N/A	
EoC Review:	N/A	

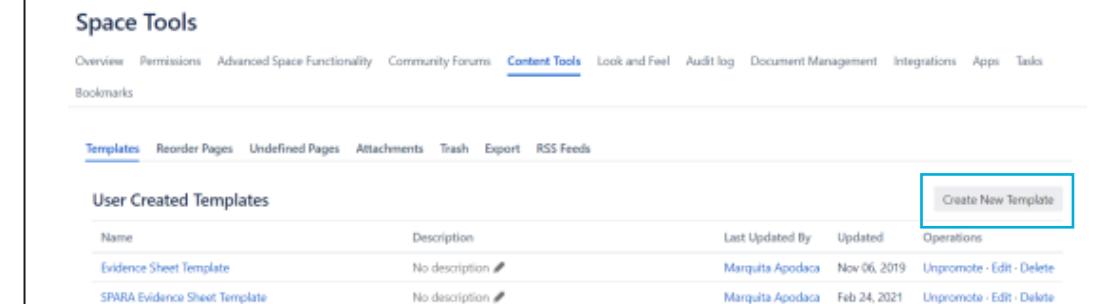
Creating a Template in Confluence

- You will need Admin permissions to the Space you wish to create a template in

Navigate to Space Tools -> Select Content Tools

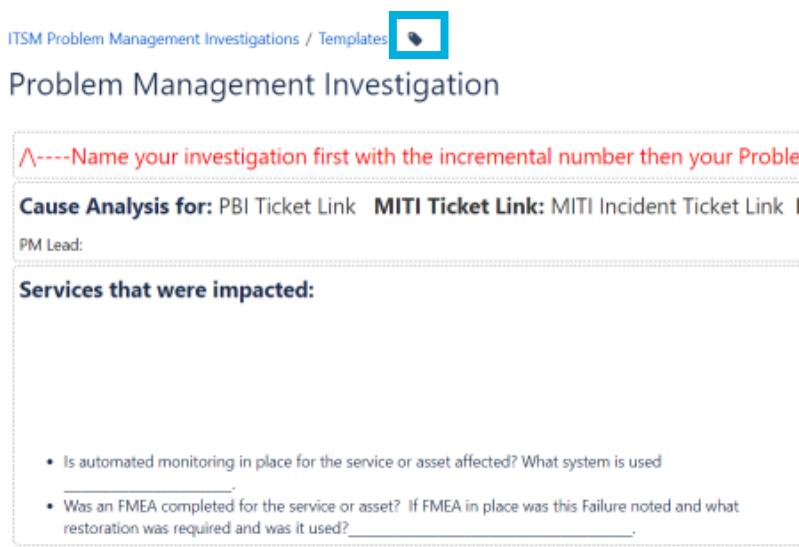


On the next screen, you will click on the **Create New Template** button to create your template

A screenshot of the 'Content Tools' page in Confluence. The page has a header with 'Space Tools' and a navigation bar with links for Overview, Permissions, Advanced Space Functionality, Community Forums, Content Tools (which is underlined), Look and Feel, Audit log, Document Management, Integrations, Apps, and Tasks. Below the navigation is a 'Bookmarks' section. The main content area has tabs for Templates, Reorder Pages, Undefined Pages, Attachments, Trash, Export, and RSS Feeds. The 'Templates' tab is selected. The 'User Created Templates' section shows two entries: 'Evidence Sheet Template' and 'SPARA Evidence Sheet Template', each with a 'Description' column showing 'No description' and an 'Operations' column with 'Marquita Apodaca' and dates. A 'Create New Template' button is located in the top right corner of the template list area, highlighted with a blue box.

Adding Labels to your Template

- When you add a label to your template, every page that is created using that template will automatically be labeled with the label name you created for it
- In our example here, we are using Label's to organize our home page using the Content by Label Macro.
- When you click on the label icon at the top of your template page, it will open a screen to add one or more labels



ITSM Problem Management Investigations / Templates

Problem Management Investigation

---Name your investigation first with the incremental number then your Problem

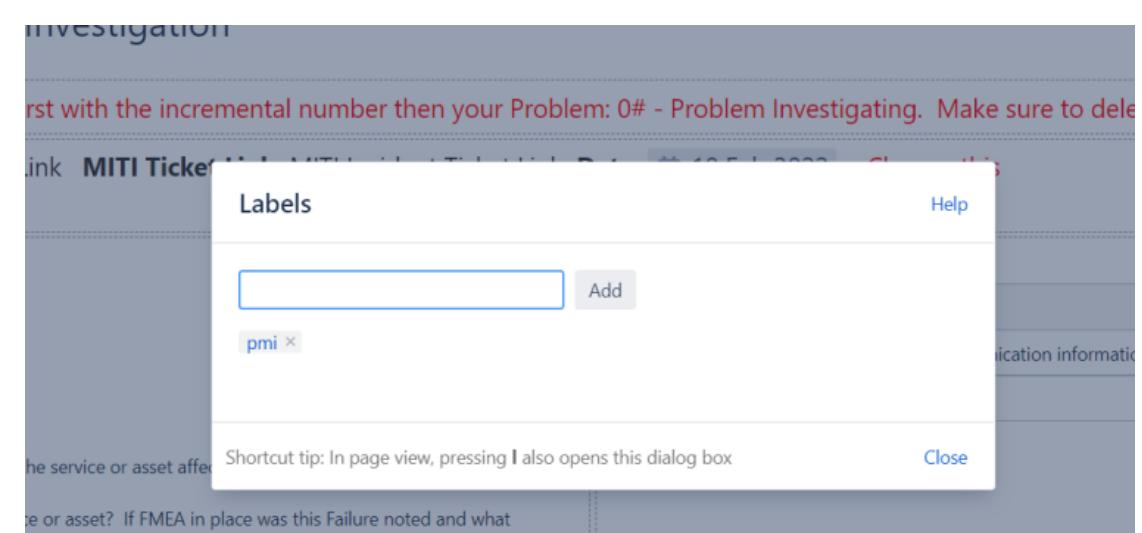
Cause Analysis for: PBI Ticket Link MITI Ticket Link: MITI Incident Ticket Link

PM Lead:

Services that were impacted:

- Is automated monitoring in place for the service or asset affected? What system is used?
- Was an FMEA completed for the service or asset? If FMEA in place was this Failure noted and what restoration was required and was it used?

Close



Labels

pmi x

Add

Close

First with the incremental number then your Problem: 0# - Problem Investigating. Make sure to delete the 0# when you are done

Organizing Pages using Content by Label Macro

Here is a view of our home page. As you can see, we have the top 5 recent Problem Investigations

- These are automatically added to this section using the Content by Label Macro

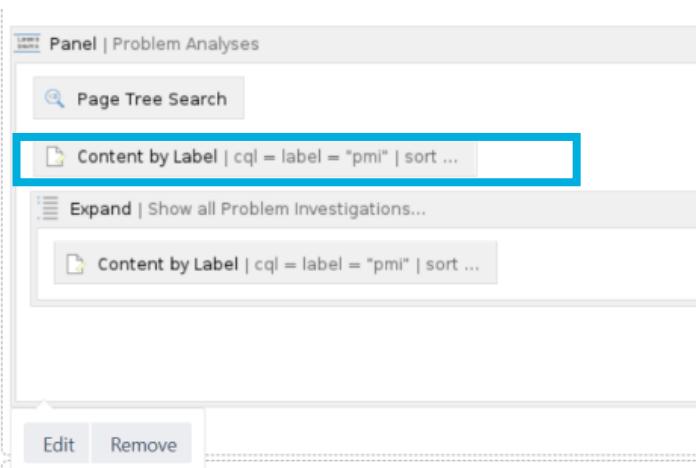
The screenshot shows a user interface with the following sections:

- Create New Investigation from Template**: A button to "Create New Problem Management Investigation".
- Recent Announcements**: A section for announcements.
- Blog Posts**: A list of two items:
 - ITSM Problem Management Investigations Feb 17, 2022
 - ITSM Problem Management Investigations Dec 03, 2021
- Problem Analyses**: A search bar and a section for problem analyses.
- 5 most recent Problem Investigations:** A list of five items, each with a blue icon and a number:
 - 23 -
 - 22 -
 - 21 -
 - 20 -
 - 19 -

A yellow box highlights the "5 most recent Problem Investigations" section.

Organizing Pages using Content by Label Macro

- To use the Content by Label, you will need to be in edit mode on your Confluence Page
- In our example we placed the Content by Label Macro within a Panel
- Once you are in edit mode for the Content by Label Macro, you can specify the name of the label you would like to organize
- We added a limit of 5 pages that will be displayed on the home page



Edit 'Content by Label' Macro

Label *
pmi

Add a filter

Options Hide

Sort By creation

Reverse Sort
Used only in conjunction with the 'Sort By' parameter.

Maximum Number of Pages 5

List Title 5 most recent Problem Investigation



Task Tracker

In the Problem Investigation Template we created a space to track corrective actions and assign tasks to individuals

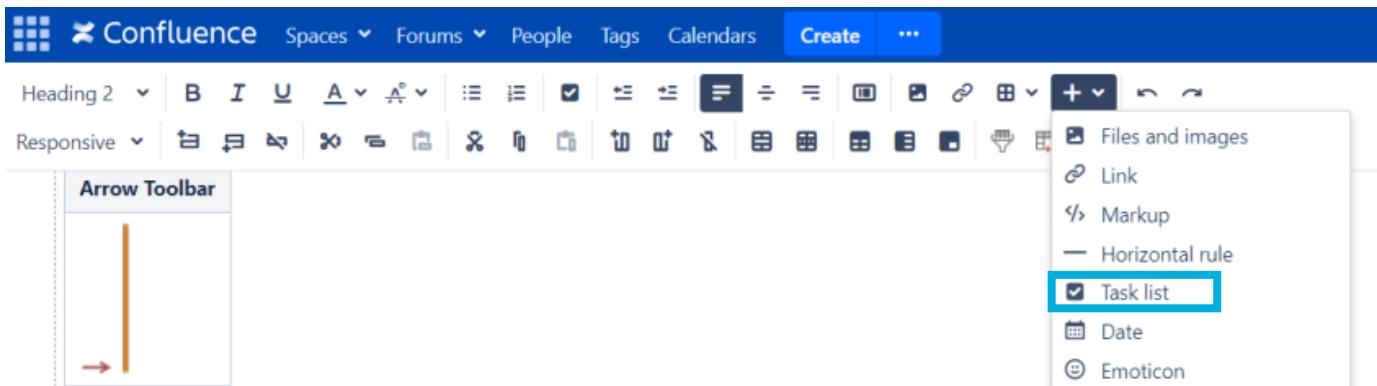
- The task tracker was added in order to easily indicate assignee, due date, and when a corrective action is completed

Corrective Actions: (Actions assigned that when put in place will prevent problem from occurring in the future)			
Create tasks in the CA Task column by using the <input checked="" type="checkbox"/> icon or typing "[" then "]". Type the CA summary, using "@" to assign to a user and "//" to select a due date			
CA Number	CA Task	Reminder Date	Response
PI0#-0#	use the <input checked="" type="checkbox"/> icon or type "[" then "]"	Use Handy Reminder Macro for Reminder Date Notification	Describe the Definition of Done for the CA
PI0#-+1			

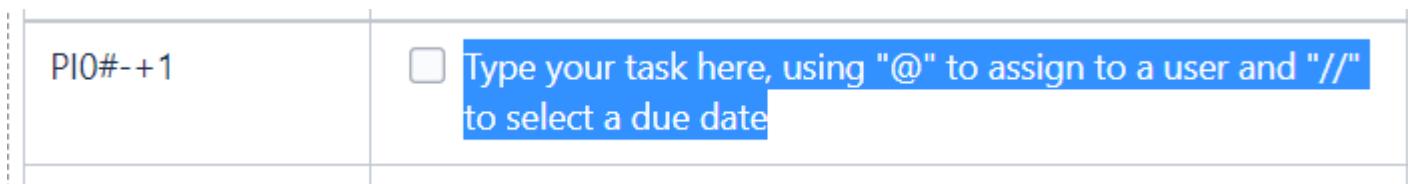
Task Tracker Continued

Adding a Task List can be accomplished in two different ways

1. Select the + at the top of the toolbar and select Task list



2. Type [] on the page



Task Report Macro

We used the Task Report Macro to organize all open task assignments and display due dates and assignees

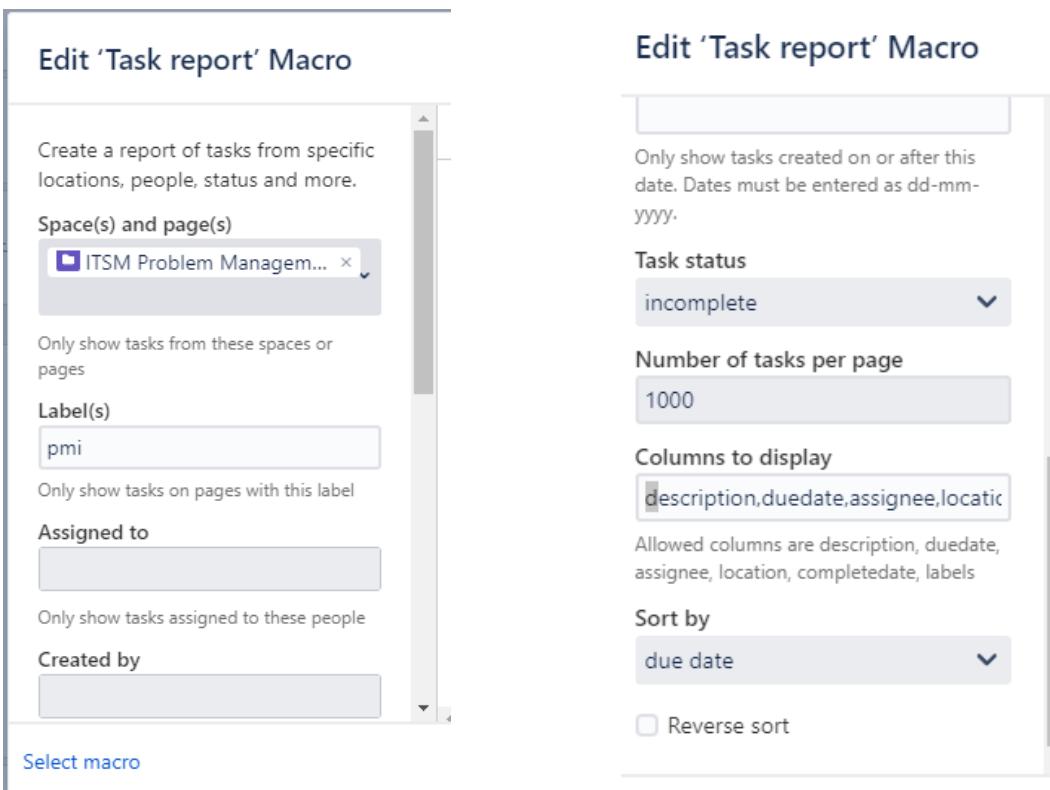
-The Task Report Macro displays a list of all open task assignments

All Corrective Actions from Investigations				
Corrective Actions:				
Description	Due date	Assignee	Task appears on	
<input type="checkbox"/> [REDACTED]	06 Jan 2022	[REDACTED]	[REDACTED]	

Task Report Macro Configuration

We configured the Task Report to only display open tasks and list the title of the task, the assignee, and the due date

-We also used Labels to only capture tasks on the Confluence Space that were labeled PMI



Edit 'Task report' Macro

Create a report of tasks from specific locations, people, status and more.

Space(s) and page(s)
ITSM Problem Managem...

Only show tasks from these spaces or pages

Label(s)
pmi

Only show tasks on pages with this label

Assigned to

Only show tasks assigned to these people

Created by

Select macro

Edit 'Task report' Macro

Only show tasks created on or after this date. Dates must be entered as dd-mm-yyyy.

Task status
incomplete

Number of tasks per page
1000

Columns to display
description,duedate,assignee,location

Allowed columns are description, due date, assignee, location, completed date, labels

Sort by
due date

Reverse sort



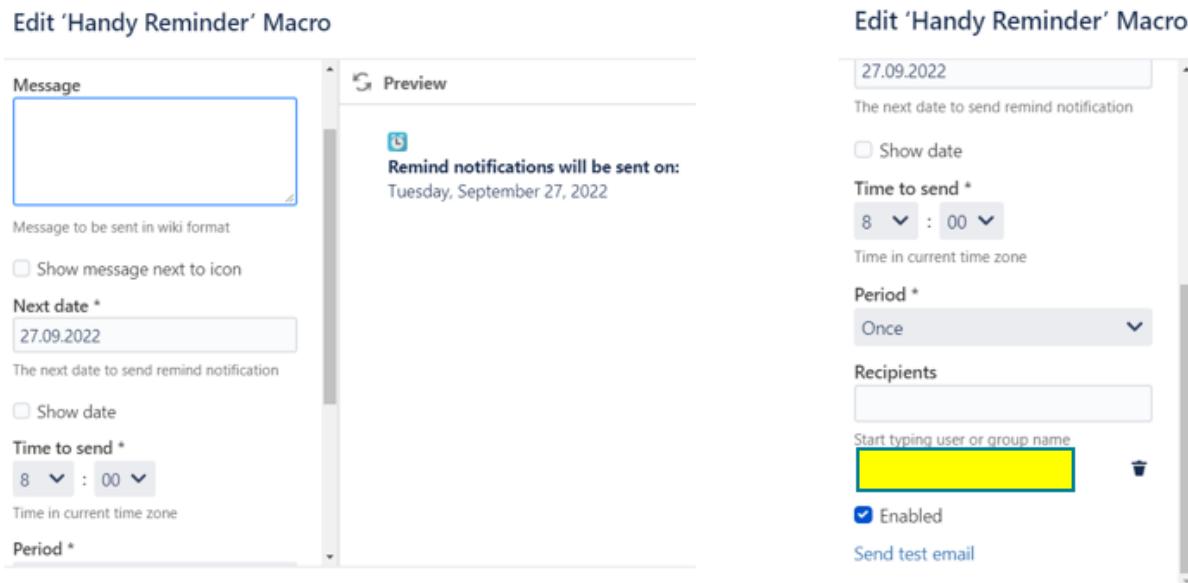
Handy Reminder

The Handy Reminder Macro is used to send notifications to individuals assigned to corrective actions when their task is coming due

- To use the handy reminder tool you can type “{handy reminder}” or add it to the page using the + symbol at the top of the tool bar

PIO#-+1	<input type="checkbox"/> Type your task here, using "@" to assign to a user and "//" to select a due date	
---------	---	--

Handy Reminder Continued



The image shows the 'Edit 'Handy Reminder' Macro' interface. It has two tabs: 'Message' and 'Preview'. The 'Message' tab contains fields for 'Message' (a large text area), 'Show message next to icon' (checkbox), 'Next date *' (text input: 27.09.2022), 'Show date' (checkbox), 'Time to send *' (dropdown: 8 : 00), 'Period *' (dropdown: Once), and 'Recipients' (text input with placeholder 'Start typing user or group name'). The 'Preview' tab shows a preview of the notification: 'Remind notifications will be sent on: Tuesday, September 27, 2022'.

When in edit mode for the Handy Reminder, you can

- Set the notification date
- Assign Recipients
- Add a message to be included in the notification



SMART IT

Why we moved from BMC SMART IT to Atlassian Confluence:

- Simplification
 - Several Confluence Macros available for use
 - Tracking tasks can be done all on one page
 - Working the Problem on one page (documentation all in one place)
 - Easier to grant permissions to several users on a Confluence Space or Page
- SMART IT is not as user friendly
 - Configuration of permissions is more involved
 - Must configure reminders in SMART IT



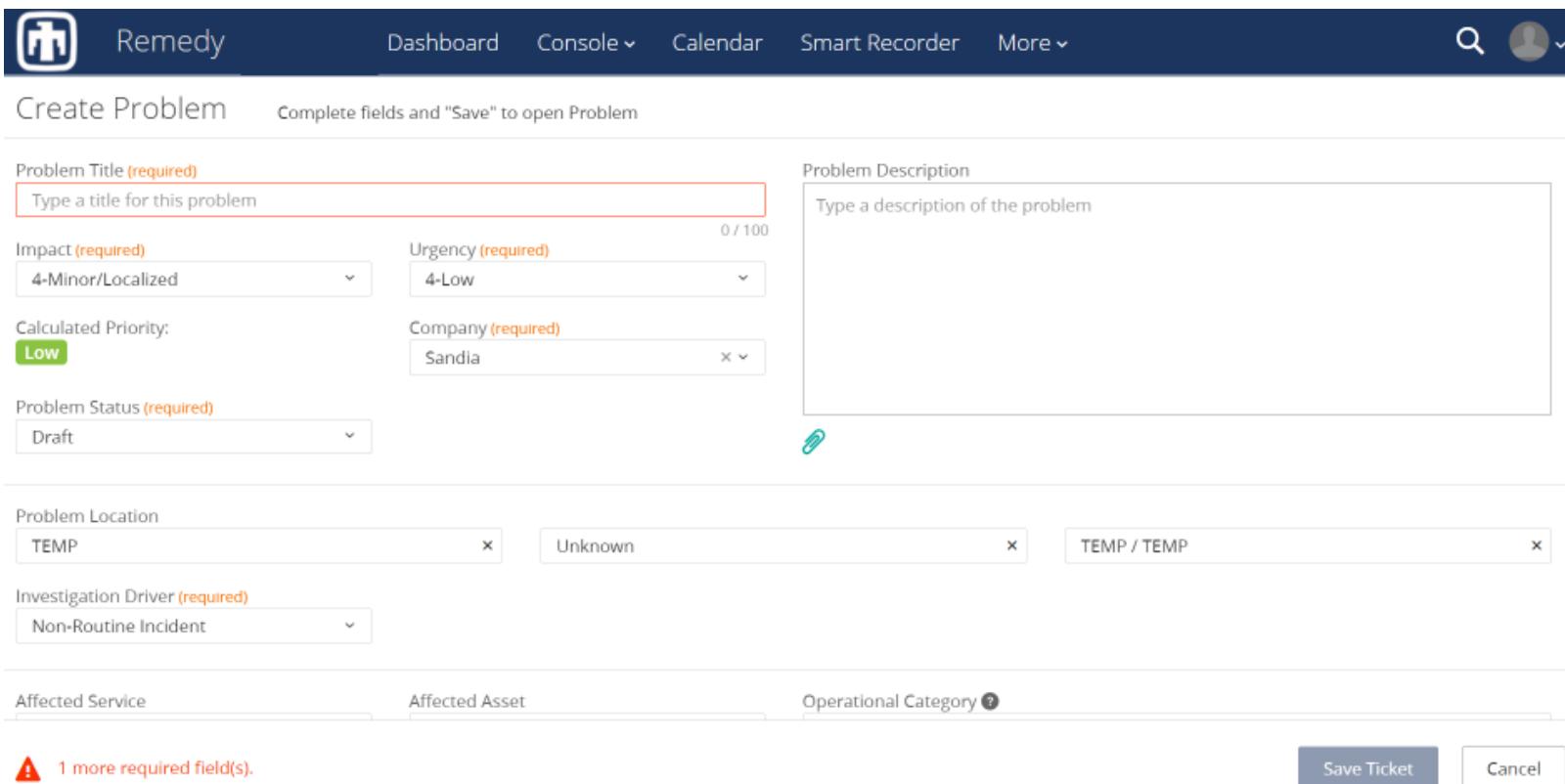
BMC



Atlassian

How we use SMART IT for Problem Investigations

Problem Ticket in SMART IT



Remedy Dashboard Console ▾ Calendar Smart Recorder More ▾

Search User ▾

Create Problem Complete fields and "Save" to open Problem

Problem Title (required)
Type a title for this problem

Impact (required)
4-Minor/Localized

Calculated Priority:
Low

Problem Status (required)
Draft

Urgency (required)
4-Low

Company (required)
Sandia

Problem Description
Type a description of the problem

Problem Location
TEMP Unknown TEMP / TEMP

Investigation Driver (required)
Non-Routine Incident

Affected Service

Affected Asset

Operational Category ?

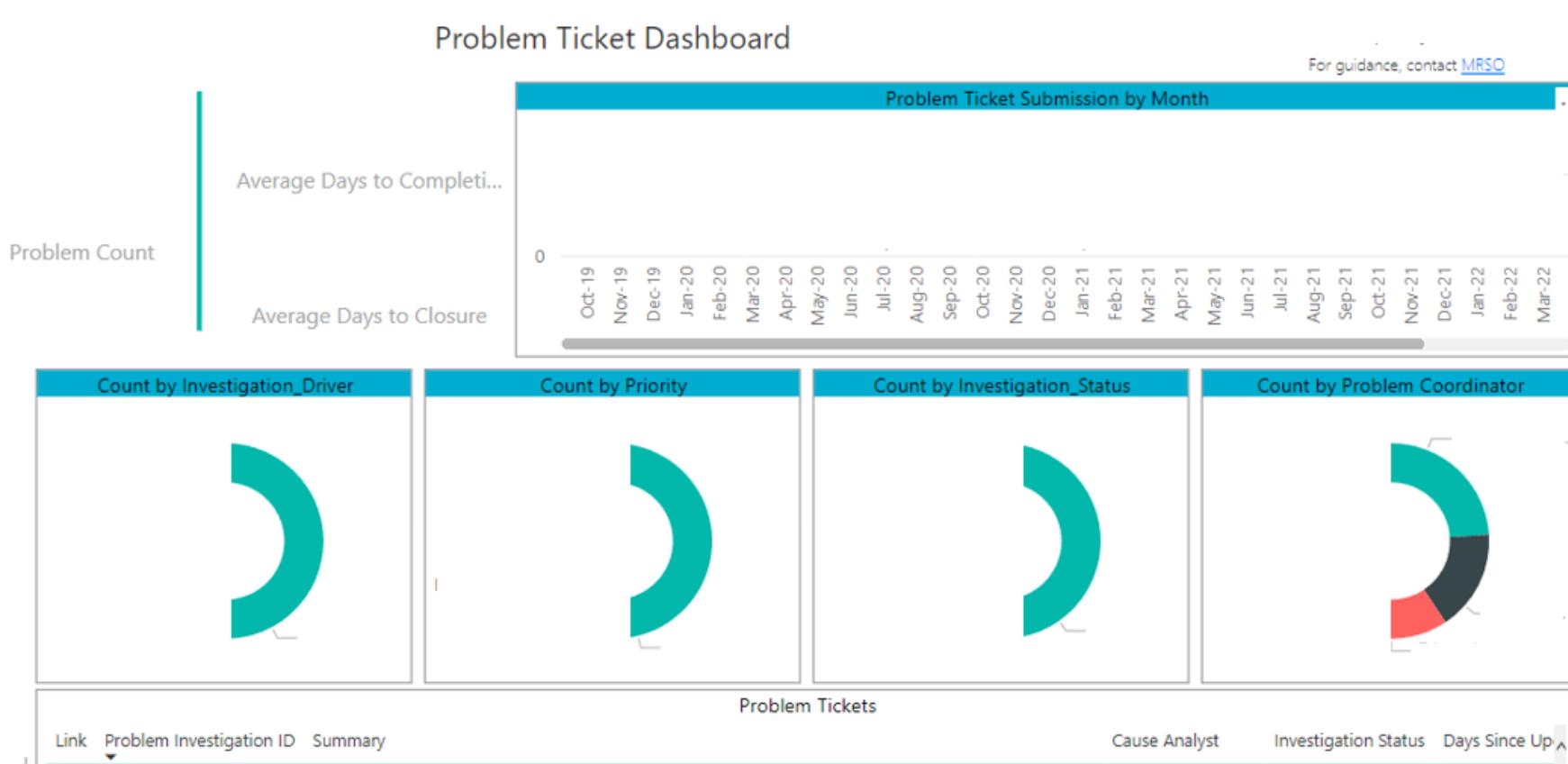
⚠ 1 more required field(s.)

Save Ticket Cancel



Metrics

We use PowerBI to create a Problem Ticket Dashboard from the data in SMART IT





Metrics FY23 Plan

From This



To This



FY23 Metric Plan – Automated Reporting

- Age of Open Records
 - Age of Open Corrective Actions
 - Record Status
- Actual Time Between MITI (days)
- Rolling 90 day MTBM
- Resolution Effectiveness Reviews
 - Repeated Problems



Questions?

