

Connect

Before we start!

- The Fiori apps shown in this presentation are custom made so they are not standard SAP Fiori app
- However, we did utilise many standard CDS views to build these apps.
- The process and discussion may not be the same as your budgeting process so if you have a view, I'm happy to listen.
- During the presentation if you have a question just sing out but I will have questions at the end.



The last thing before we start is.



Is there anyone here that is currently doing Zero Based Budgeting in SAP?



How did this begin?

Current State of Maintenance Budgeting

Preparation Engineering **Accountant** Maintenance Excel (Previous Non-Asset Strategy Tool External Factors **Budgets**) S4/Hana **Maintenance** (Strategies/ (e.g. Top Down (Adhoc Reports) Costs (Overheads Maintenance Cuts) e.g. Training) Plans) **Accountant Excel File** FY Budget **Cost Center Cost Element Cost Center Description on expenditure Cost Element/GL Sub-system Sub-system**

Connect

Budget Management

Excel Report
Maintenance

Cost Center
Sub-system

Actual Costs

Accountant

FY Budget, Actuals, Reforecast

Cost Center

- Sub-system
- Cost Element (G/L Account
- Actual Costs

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SAP

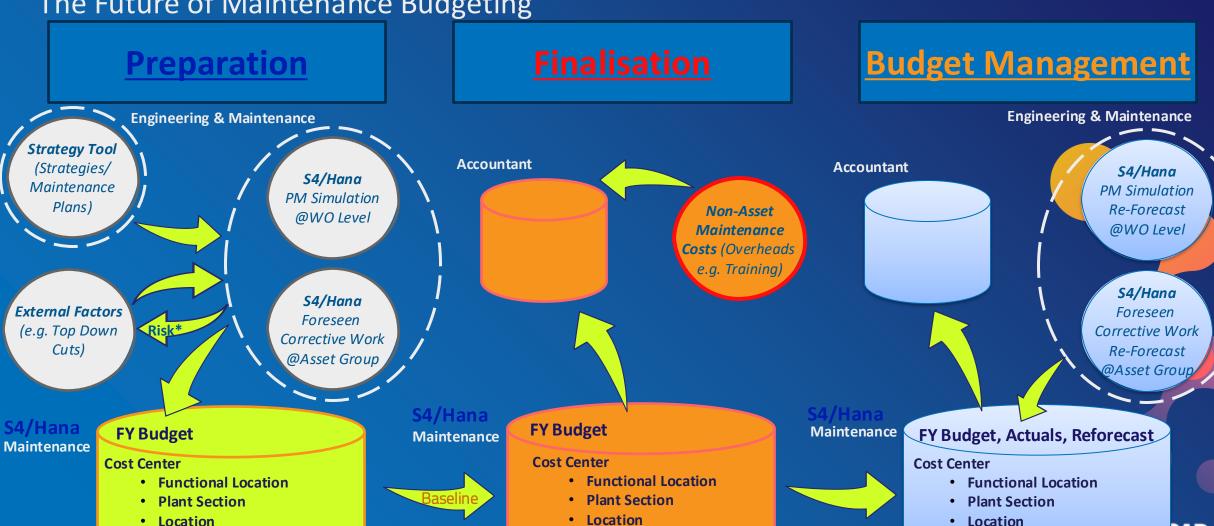
Value Category

How did this begin?

Value Category

#Master

The Future of Maintenance Budgeting



Value Category

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Why do Zero Based Budgeting?

ZBB is an informed way to construct and forecast future maintenance spend and monitor against a predicted budget.

Provides insight into:

- Where we are going to spend the money.
- When we are going to spend the money.
- What we spent the money on.
- Why we need to spend the money.





So why Fiori for Zero based Budgeting?

- We did explore WBS Elements, but it was too cumbersome and very limiting. Plus, they are owned by Finance!
- Fiori has the flexibility of UI5 and an improved User experience.
- Fiori can combine many aspects of Maintenance, Procurement
 & Supply Chain to deliver a full budgeting experience.
- It was the most current technology we had at the time so we could basically build it how you want it to be.



Overall ZBB Process Steps



Evaluate: Business requirements, operational inputs and parameters, and business maintenance strategies.

Request Business Requirements



Gather Business Requirements

Prepare: Align defined business goals and maintenance performance targets in ZBB

Preventative Maintenance – Simulate Preventative & Predictive Work (PM)



Corrective Maintenance Determine Foreseen
Maintenance Activities (FM)



Review Job Timings, Labour Capacity & Costs Accuracy



Maintenance Budget Planning - Calculate ZBB

Present Risk Assessments: Establish the consequences if identified maintenance work is not carried out

Perform "What if" Risk Scenarios



Identify & Analyse Risks



Update FM or Preventative Maintenance Work



Calculate ZBB Versions

If Not Accepted

Evaluate & Approve: ZBB suitable budget version, communicate to all stakeholders, align with Finance and implement budget

Review & Select ZBB Version



Present ZBB



Accept ZBB



Approve ZBB



Manage Budget & Costs

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Maintenance Budgeting Fiori Apps



Maintenance Analyst/Manager

All Maintenance

Preventive Maintenance Simulation Cost Simulation





Foreseen Maintenance Budget Activity List





Maintenance Budget Planning



Maintenance Budget Dashboard **Budget Overview**



PM Budget Simulation

- By Plant & Year.
- Budget based on Strategy based work.
- Lock in a version.

FM Budget Creation

- By Plant & Year.
- Budget based on expected Corrective work.
- Use versions to manage.
- Different scenarios can be created.

PM & FM Budget **Planning**

- By Plant & Year.
- PM & FM combined based on their locked in versions.
- Annual or Forecast version locked in.

Maintenance Budget Analysis

- Plant & Year.
- Real-time analysis based on the locked in Budgets.
- Budget v Actual analysis.

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NOTE: These Fiori apps are not standard but utilised the UI5 Fiori Elements

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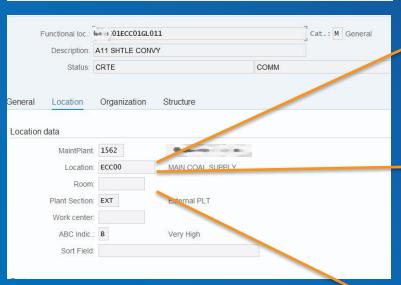
Some Master Data updates before we started.

- There are two key reporting fields that are set on a Functional Location or Equipment that were not utilised to their full potential.
- Alignment of these fields to each of the Site's Maintenance structures is crucial to reporting.
- The 2 fields are
 - Plant Section A sub-division of a maintenance plant which is assigned to a person or group responsible for the maintenance on the pieces of equipment or functional locations that are installed in the plant section.
 - Location A place where the Technical object is physically installed. This
 could be a physical location or system.



Integration

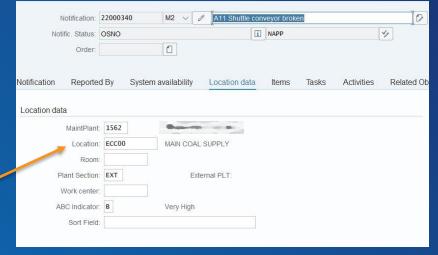
The Plant Section and Asset Location on the Functional Location or Equipment is transferred automatically when a Notification, Work Order or Maintenance Item is created.



The Plant Section and Location fields can be used in many reports to group the different types of information

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Fields are copied to a Notification



Maintenance item:	661	A11 Shuttle conveyor Inspect	7
Strategy:			
Maint. plan cat.:	Preventive Maintenan	nce ~	
Object list item	Item location		
ion data			
ion data MaintPlant:	1562		
		AIN COAL SUPPLY	
MaintPlant:		AIN COAL SUPPLY	
Location:	ECC00 MA	AIN COAL SUPPLY External PLT:	
MaintPlant: Location: Room:	ECC00 MA		
MaintPlant: Location: Room: Plant Section:	ECC00 MA		

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Fields are copied to a Work Order

Order:	PM03 43	000860) A	11 Shuttle c	onveyor broke	en		0	\mathbb{H}
Sys.Status:	CRTD NMA	T PRC							4
HeaderData	Operations		Components	Costs	Objects	Additional Data	Location	Planning	
Location data									
	MaintPlant:	1562	-						
	Location:	ECC00	MAIN	COAL SUF	PLY				
	Room:								
Pla	nt Section:	EXT		External	PLT:				
W	ork center:								
ABO	C Indicator:	В	Very	High					
	Sort Field:								

Fields are copied to a Maintenance Item



Preventive Maintenance Simulation

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Step 1 in building a Zero-Based Budget.

- The Preventive Maintenance Simulation app will list all Preventive Maintenance calls over a given year into the future.
- This also includes calls with no Work Orders created.
- The information is detailed down to the Task List Operation level which includes full costing and Labour hours.
- The app can chart the costing or hours as well as list the Maintenance Plans and items
- The Maintenance Item number is used as the Budget Item number to connect the Work Orders.
- Once analysed the simulation is locked in to either an Annual Version or Forecast Version.

Preventive Maintenance Simulation Cost Simulation





Preventive Maintenance Simulation

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Simple Process.

Prepare

- Simulate based on
 - Plant.
 - Fiscal Year.
 - Preventive
 Maintenance Orders.

Analysis

- Review Preventive simulation.
- Stop or update
 Maintenance Plans.
- Review costs & labour.

Lock in

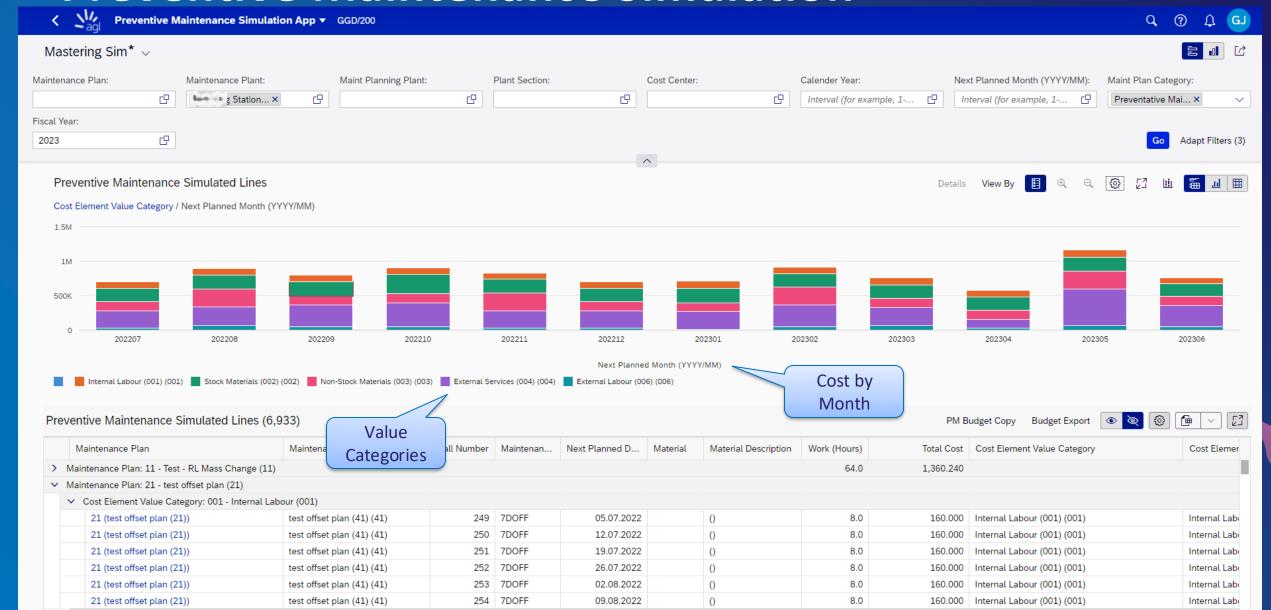
- Lock in the simulation to a version.
- Annual Version
- Quarterly Forecast version are available.





Preventive Maintenance Simulation

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Budgeting

Preventive Maintenance Simulation

Functions Preventive Maintenance Simulated Lines (18) Value PM Budget Copy **Budget Export** Categories Maintenance Plan Maintena Call Number Next Planned D... Material Description Work (Hours) Total Cost MS 2 (345) Maintenance Plan: 345 - BUDGET STRATEGY TIME BASED MULTIV Cost Element Value Category: 001 - Internal Labour (001) Labour 345 (BUDGET STRATEGY TIME BASED MU... BUDGET STRATEGY MONTHL ... 3 Monthly 20.08.2023 () 25.0 500,000 Hours 345 (BUDGET STRATEGY TIME BASED MU... BUDGET STRATEGY MONTHL ... 4 Monthly 19.09.2023 0 10.0 200,000 345 (BUDGET STRATEGY TIME BASED MU... BUDGET STRATEGY MONTHL ... 3 Monthly 18.11.2023 () 25.0 500.000 345 (BUDGET STRATEGY TIME BASED MU.. 3 Monthly 16.02.2024 25.0 500.000 BUDGET STRATEGY MONTHL... **Materials** 17 2 Monthly 21.07.2023 10.0 200,000 345 (BUDGET STRATEGY TIME BASED MU., BUDGET STRATEGY MONTHL... 23 2 Monthly 17.03.2024 200,000 345 (BUDGET STRATEGY TIME BASED MU... BUDGET STRATEGY MONTHL ... 10.0 Required 345 (BUDGET STRATEGY TIME BASED M... 105.0 2.100.000 Cost Element Value Category: 002 - Stock Materials (002) Calculated CLIP.RETAINING.GALV.GRID MESH FLOOR. 345 (BUDGET STRATEGY TIME BASED MU... BUDGET STRATEGY MONTHL ... 4 Monthly 19.09.2023 1000230 678,100 345 (BUDGET STRATEGY TIME BASED MU.. BUDGET STRATEGY MONTHL ... 4 Monthly 19.09.2023 1000231 FLOORING, GRIDMESH, 900x900 RANGLE T... 3,300,900 Cost 345 (BUDGET STRATEGY TIME BASED MU... BUDGET STRATEGY MONTHL ... 21 16 Monthly 1000150 BEARIN, WHSR, THRS: NO.1 BRG PUMP SID... 24,688.600 17.01.2024 345 (BUDGET STRATEGY TIME BASED M... 0.0 28,667,600 Cost Element Value Category: 003 - Non-Stock Materials (003) 20.08.2023 130,000,000 345 (BUDGET STRATEGY TIME BASED MU.) BUDGET STRATEGY MONTHL ... 18 3 Monthly 0.0 20.08.2023 5000120 1.200.000 345 (BUDGET STRATEGY TIME BASED MU.. BUDGET STRATEGY MONTHL ... 18 3 Monthly test non stock material RA (5000120) 0.0 345 (BUDGET STRATEGY TIME BASED MU.. BUDGET STRATEGY MONTHL ... 3 Monthly 18.11.2023 0.0 130,000.000 test non stock material RA (5000120) 345 (BUDGET STRATEGY TIME BASED MU.. BUDGET STRATEGY MONTHL .. 18.11.2023 5000120 0.0 1,200,000 3 Monthly 16.02.2024 130,000,000 345 (BUDGET STRATEGY TIME BASED MU., BUDGET STRATEGY MONTHL ... 3 Monthly 0.0 1.200.000 345 (BUDGET STRATEGY TIME BASED MU.. BUDGET STRATEGY MONTHL... 22 3 Monthly 16.02.2024 5000120 test non stock material RA (5000120) 0.0 393,600,000 345 (BUDGET STRATEGY TIME BASED M... 0.0 > Cost Element Value Category: 004 - External Services (004) 0.0 110,000.000

Step 2 in building a Zero-Based Budget.

- Foreseen Maintenance Activities are used to Budget foreseen corrective work.
- The Foreseen Budget can be assigned to an Asset or a group of Assets using the Functional Location Hierarchy.
- Foreseen Budgets can be copied from previous years for ease of analysis and setting up a new year Budget.
- Budget cost are separated into Value Categories Labour, Materials, etc.
- Once the Foreseen Budget is finalised it is locked in to either an Annual Version or Forecast Version.
- Corrective Work Orders are assigned automatically to these FM Activities using a batch job.



Foreseen Maintenance Budget Activity List





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Simple Process.

Prepare



Build



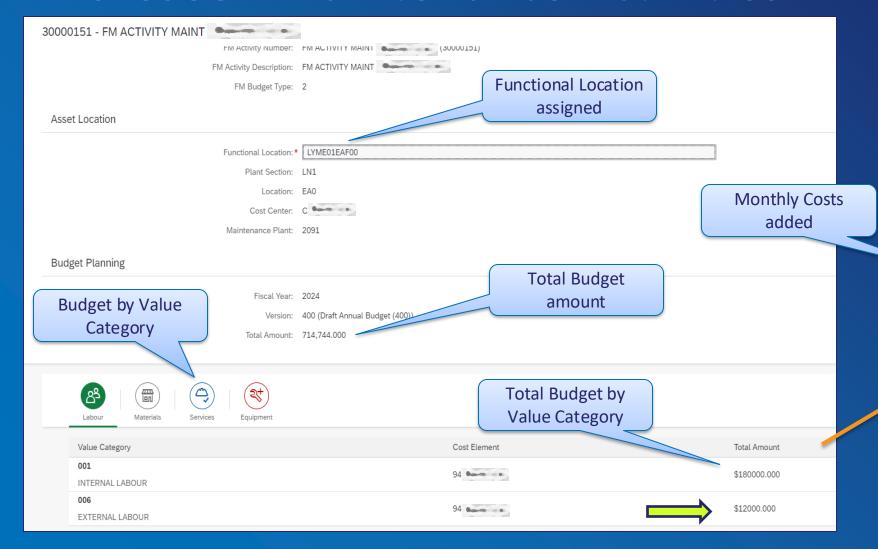
Finalise

- Discuss and identify the requirements.
- Copy previous year & adjust.
- Create new FM Activities.
- Copy for a Forecast

- Review the Budget costs.
- Upload costs to adjust.
- Adjust costs manually.

- Finalise the correct version.
 - Annual or
 - Forecast
- Analyse to ensure Budget is correct.





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Monthly Cost
Month Copy Cost Down Clear All
July:
7800
August:
7800
September:
7800
October:
7800
November:
7800
December:
7800
January:
7800
February:
7800
March:
7800
April:
7800
May:
7800
June:
7800
OK Cancel



How are the Corrective Work Orders assigned?

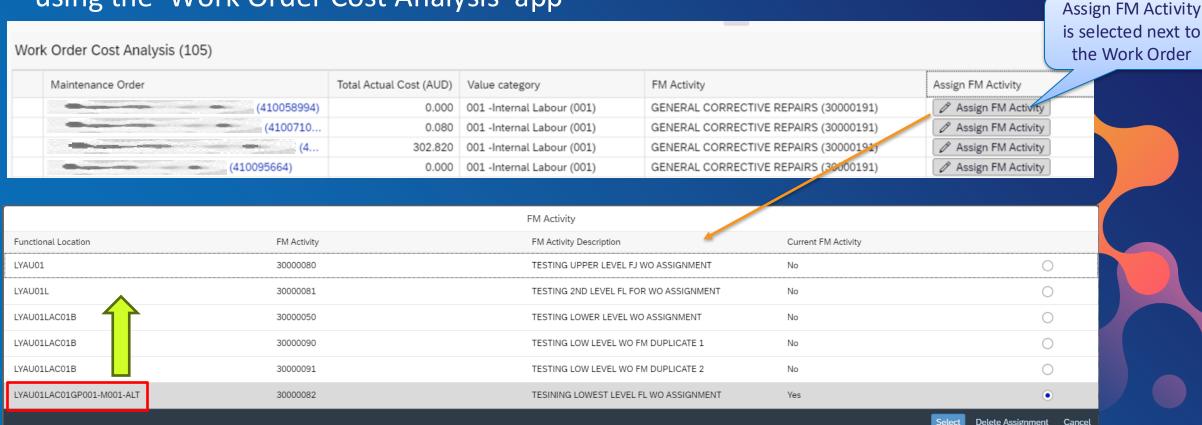
- Work Orders are assigned automatically or manually based on their Functional Location and Maintenance Plant to these rules.
 - Corrective Work Order Types that are the prominent WO Type for budgeting.
 - Work Orders are open.
 - Work Order has a Cost Center as a Settlement Rule.
- This assignment is to align Budget value with WO values so comparisons can be made that highlight high spend Corrective WOs vs Budget.





How are the Corrective Work Orders assigned?

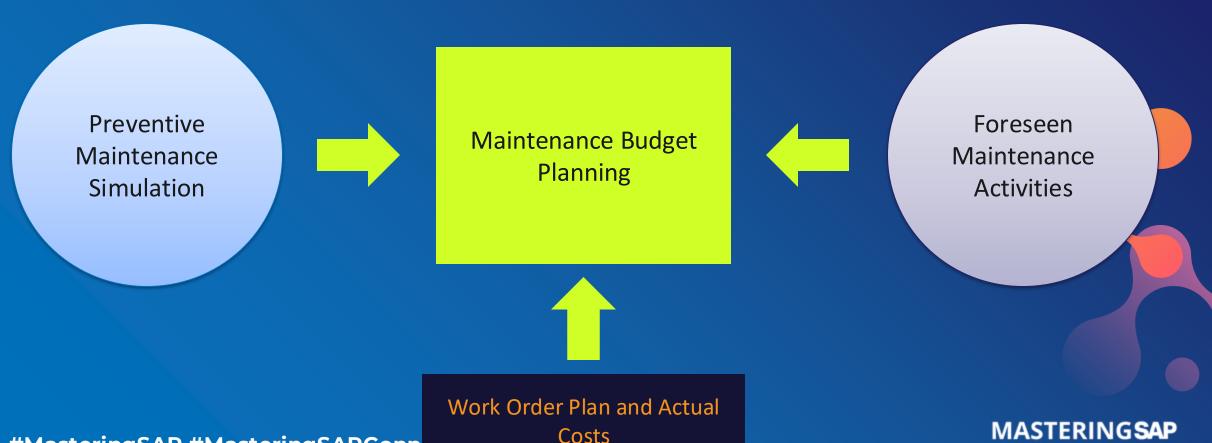
Manual assignment and removal is managed by the Maintenance Analyst using the 'Work Order Cost Analysis' app





What is Maintenance Budget Planning?

Maintenance Budget Planning is about bringing all the locked in versions together so the entire budget can be reviewed and adjusted as required including Work Order Costs.



Step 3 in building a Zero-Based Budget.

- Maintenance Budget Planning brings together the Preventive Maintenance (PM) Simulation and the Foreseen Maintenance(FM) Activities into one list.
- Budget costs are displayed by month and by Value Category.
- Work Order costing for the Fiscal year is also displayed when related to a Budget item PM or FM.
- Unbudgeted Work Orders that are not assigned to a PM or FM Budget item are listed for review.
- This app can also be used as a Budget analysis tool throughout the year
- Annual and Forecast Budget can be locked in as well as viewed.
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Maintenance Budget Planning





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Simple Process.

Plan

- Plan by Year & Plant
- Add PM & FM versions
- Add different versions to plan different scenarios

Review

- Review the Budget costs both PM & FM
- Adjust FM Activity costs manually
- Review Unbudgeted Work Orders

Lock-in

- Finalise the planned Budget.
- Lock-in the Annual Budget.
- If Planning a Forecast lock in the Forecast.

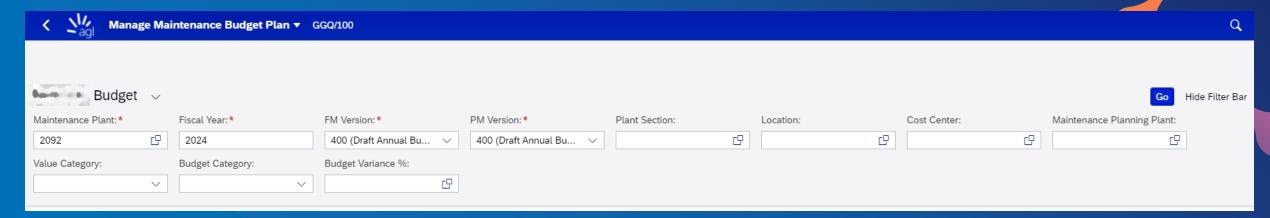




Step 3 in building a Zero-Based Budget.

Maintenance Budget Planning is filtered by 4 key fields to build the Budget

- Maintenance Plant being Budgeted
- Fiscal Year being Budgeted
- Preventive Maintenance version (created in the previous steps)
- Foreseen Maintenance version (created in the previous steps)







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Step 3 in building a Zero-Based Budget.

Understanding the key components is crucial to Planning a Budget.

- Budget Item numbers are
 - Preventive Maintenance (PM) = Maintenance Item number
 - Foreseen Maintenance (FM) = Foreseen Maintenance number
- Each Budget Item in separated into the Value Categories
 - Internal Labour
 - External Labour
 - Stock Materials
 - Non-stock Materials
 - Services
 - Equipment





Step 3 in building a Zero-Based Budget.

Understanding the key components is crucial to Planning a Budget.

- Work Order Costs are added
 - Total Planned = The planned cost on the WO in the Fiscal Year
 - YTD Actuals = Actual WO cost posted in the Fiscal Year
 - Rem Plan = WO Planned cost WO actual cost over the life of the WO.
- There are several Version columns
 - Version Budget = value based on the version selected
 - Annual Budget = locked in snapshot of the Version Budget once agreed.
 - Forecast = Quarter 1 Forecast to the end of the year.
- Budget is separated into Fiscal Year Months which can be exported to Excel.



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Maintenance Budget Planning

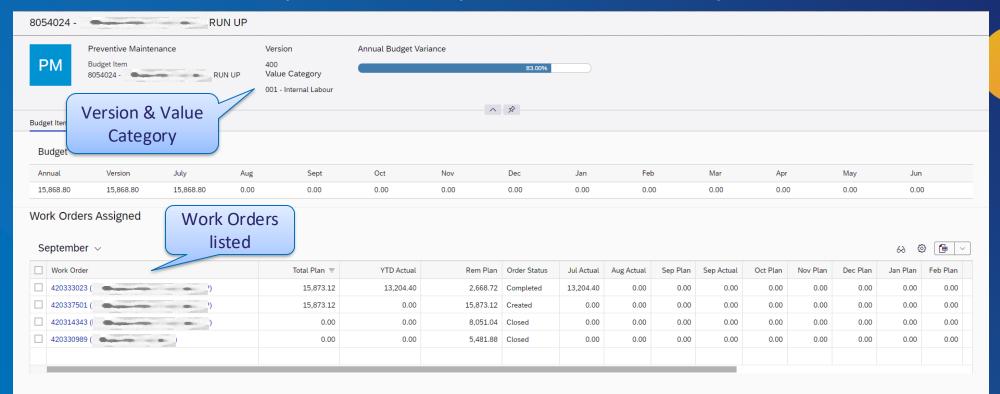
Budget variance in cost and percentage have been added for analysis





Maintenance Budget Planning Detail page provides and overview of the Budget Item by Value Category.

Work Orders can be opened directly and actioned if required.





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Maintenance Budget Planning

Step 3 in building a Zero-Based Budget.

Unbudgeted Work Orders are shown in the list with no Budget Item assigned.

These Work Orders are

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- Corrective Work Orders not assigned to an FM Activity
- Backlog Preventive Maintenance Work Orders that have been reschedule to the Budget Fiscal year where their Maintenance Item is not include in the Budget Fiscal Year.
- A decision is required to whether this work will be done in this Budget Year.

	Budget Plan (3) My List* ~									
		Budget Item	Budget Categ	Value Category	Total Plan	YTD Actual	Rem Plan	Annual Budget	Version Budget	А
		999999999	UB (Unbudget	001 (Internal Labour)	92,384.69	65,768.68	26,616.01	0.00	0.00	
		999999999	UB (Unbudget	002 (Stock Materials)	13,859.14	87,975.86	-954,367.33	0.00	0.00	
		999999999	UB (Unbudget	006 (External Labour)	41,454.49	3,320.20	36,661.85	0.00	0.00	
					147,698.32	157,064.74	-891,089.47	0.00	0.00	
g										





Step 3 in building a Zero-Based Budget.

Annual Budget is locked in once it has been agreed to before the Fiscal year starts.

- The purpose is to create a Baseline Budget that is agreed at the start of the year.
- Different versions can now be created to run different scenarios if required.
- If a mistake is made a new Annual Budget can be locked in which will overwrite the previous.

Forecast Budgets can be locked in throughout the year.

- The purpose is to review the Baseline Budget and forecast the expenditure for the rest
 of the year.
- The Forecast version allows a better understanding of future expenditure.



Maintenance Budget Dashboard

Step 4 in building a Zero-Based Budget.

- Maintenance Budget Dashboard is used to monitor the Budget usage in real-time.
- The Dashboard can be filtered to understand where the Budget is being consumed.
- There are 4 cards on the Dashboard
 - Maintenance Budget Overall
 - Maintenance Budget Monthly
 - Maintenance Budget Work Order forecast
 - Unbudgeted Work Orders
- Information can be reviewed via a list report selected from the cards



Maintenance Budget Dashboard Budget Overview

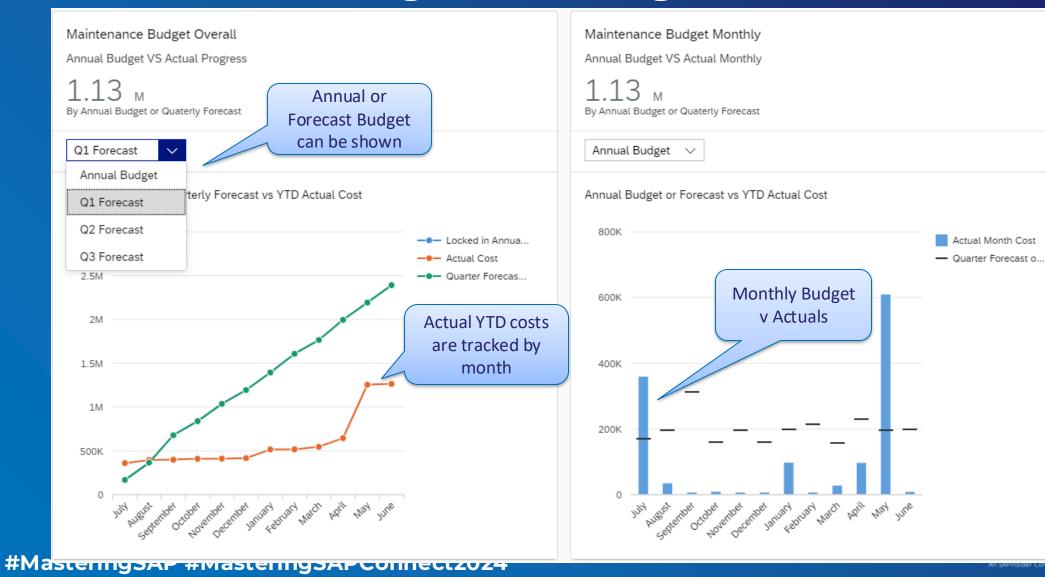




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Actual Month Cost

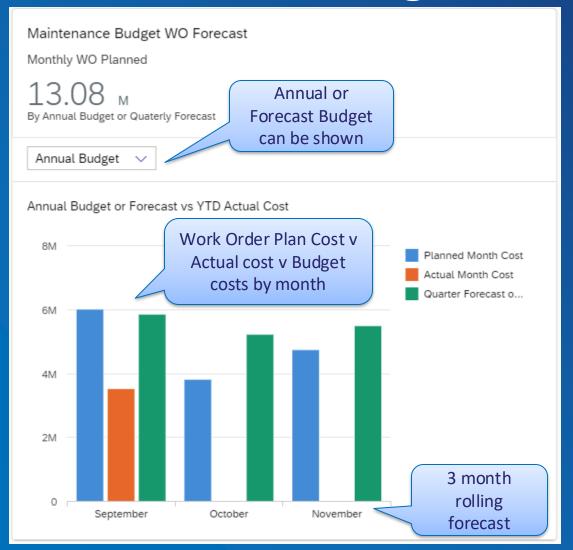
Maintenance Budget Planning

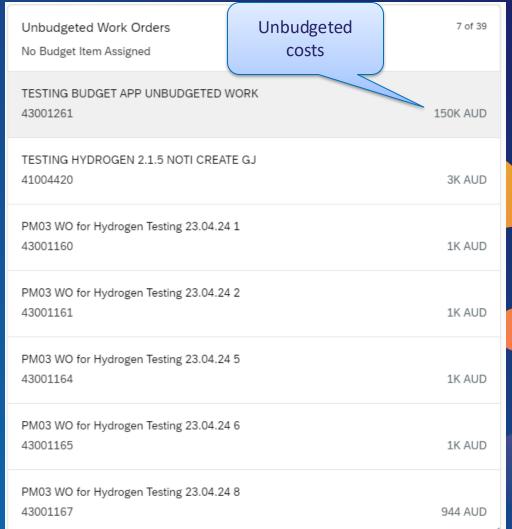


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Maintenance Budget Planning





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So, that was look at Zero-Based Budgeting using Fiori.





How to Connect with Me



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