BorgWarner

Program Management Launch Excellence

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Global Program Manager

Sept 26th 2019

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Content

- BorgWarner and Morse Systems
- Seed Project Overview
- Program Management Implementation
- Future Opportunities

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OUR VISION

A clean, energy-efficient world

OUR MISSION

Propulsion System Leader for Combustion, Hybrid and Electric Vehicles

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BorgWarner in numbers

30,000
employees

2018 Sales
$10.5 Billion
consolidated

Employee, location and financial information as of December 31, 2018

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Strategic Global Operations

BorgWarner partners with customers around the world to bring the right technology to market at the right value.

Location information as of December 31, 2018

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Morse Systems at a glance

Engine Timing Systems

Variable Cam Timing Systems

Solenoids and Actuators

HY-VO® Drivetrain Chain

Performance

Efficiency

Customer Value

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Strategic Global Operations

Morse Systems Technology

Combustion Hybrid Electric

NEW

On board charger

Hybrid Electric

NEW

Battery Modules

Hybrid Electric

NEW

P0 Belt Tensioner

Hybrid

Power Transmission Chains

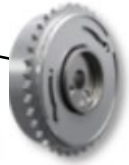
Hybrid Electric

Solenoids and Oil Control Valves

Combustion Hybrid

Timing System Components

Combustion Hybrid



Hydraulic Variable Cam Timing

Combustion Hybrid

Charging Stations

NEW

Hybrid Electric

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Seed Project Overview

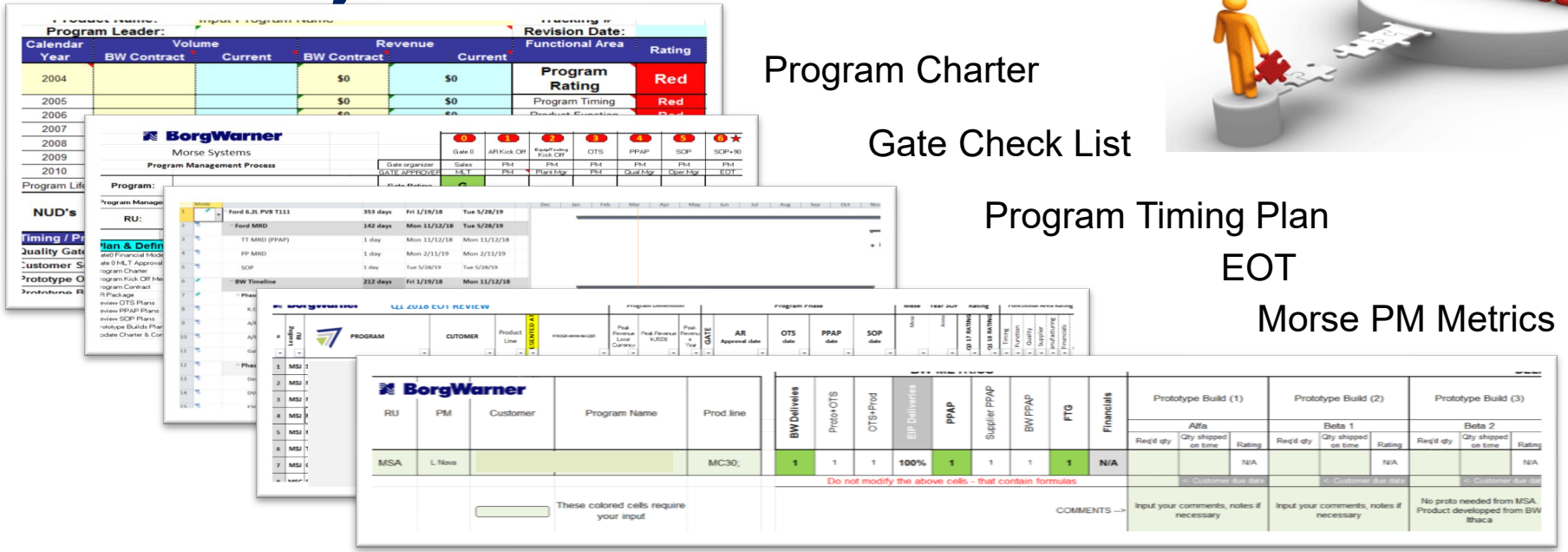
Program Charter

Gate Check List

Program Timing Plan

EOT

Morse PM Metrics



- Collaboration tool (reduces reporting, redundancy, data chasing)
  - Eliminates the need for the excel based tool that is stored on ICE
- Free up time for **Launch & Supplier** Focus

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Project Objectives

- **Effectively Manage the Launch Process**
  - Increase internal alignment on Global and Local Programs
    - Product Engineering already implemented Auros in 2018
  - Incorporate improved Gate Review Process
  - Develop standard template to eliminate excel
  - Status overview, reminders to complete tasks, and agile escalation
  - Streamline the PDP, EOT, and metrics process
    - Automated dashboards and reports
  - Central storage for evidence related to Gate deliverables
  - Target 20-25% PM productivity gain
  - 32 active GPM/PM users

PROGRAM MANAGEMENT ROLE			
	Current Est	Ideal/Target	Direction
AR prepaparation / submission	10%	7%	Reduce
Internal Team meetings and follow up	20%	15%	Reduce
Functional meetings / reporting preparation	5%	2%	Reduce
EOT meetings / reporting preparation	5%	7%	Reduce
Flawless Launch Metrics	5%	0%	auomate
Program timing charts (for internal purposes)	10%	5%	Reduce
Program timing charts (for customer purposes)	5%	2%	automate
Resolve/support supplier issues & meetings	10%	15%	Increase
Resolve/support plant issues	5%	10%	Increase
Resolve/support customer issues & meetings	15%	20%	Increase
Financial focus improvement of programs	5%	10%	Increase
Development/special projects/training	5%	7%	Increase
	100%	100%	
Reduce task/reports/tactical	60%	38%	
Customer interactions, strategic, valueadded	40%	62%	

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Auros SEED Project Charter - BorgWarner (GPM)

Business Case

Program Mangers are spending a lot of time on various manual activities in the Gate Review process. This takes away from time that could be spent on flawless launches and supplier readiness.

Opportunity Statement

The aim of our SEED project is to:
- Prevent mistakes and duplicate data from being entered manually in the Gate Review Process.
- Prevent multiple regions from following non-standard processes.
- Allow for quicker on-boarding of new Program Managers.
- Allow for global/executive reporting roll-up in a timely manner.

Goal Statement

The goals of our SEED project is to:
- The current Program Management (PM) activities take about 60% of PM's time. We want to reduce this to 38%.
- We want to implement more controlled gate review timing to reduce the number of adjusted due dates.
- We want to eliminate multiple Excel files/sheets and everything is tracked in one global location.

Project Scope

High Fidelity

Gate Review Process
- EOT (Executive Oversight Team) Process
- Launch Metrics
- Program Contracts
- Functional Review
- Program Timing

Adjacent
- Supplier Readiness
- Business Plan/Program Award Process
- Engineering Evidence

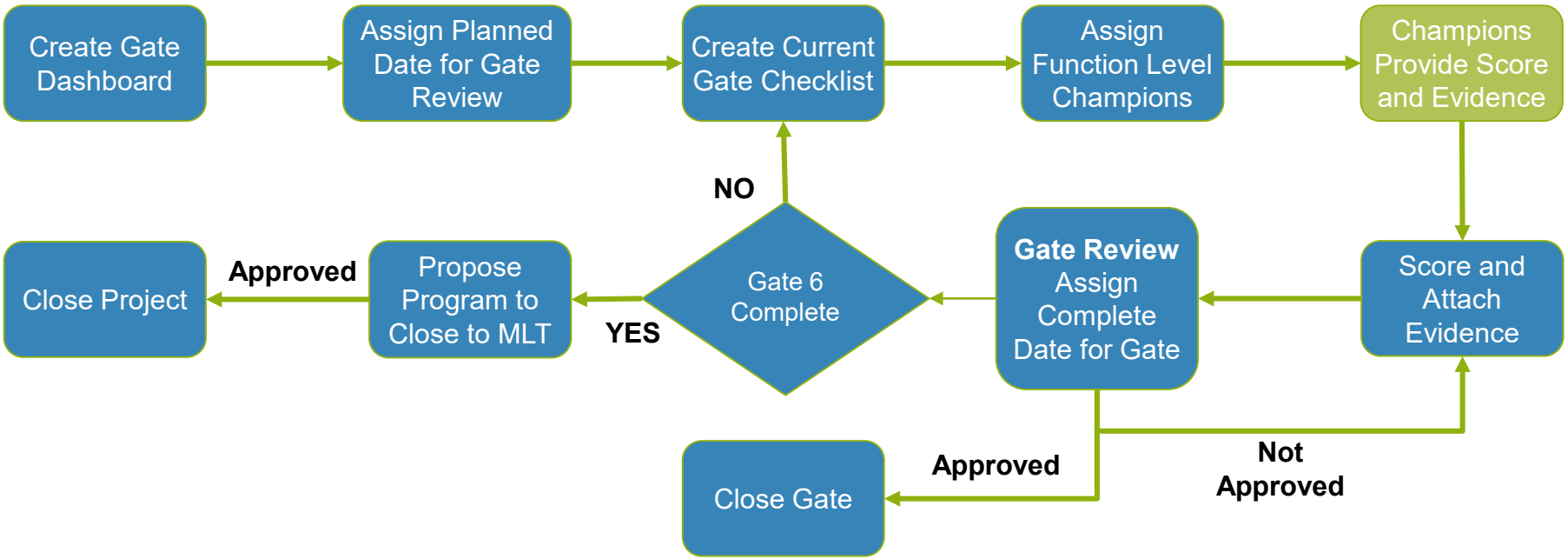
Project Team

Project Sponsor: Ivan Vazquez
Project Lead: Matt Barron
Project Subject Matter Experts: Laura Nova, Milton Aguilar, Lucy Xia, Edwin Rodriguez
K-PAC Authors: Alex Harvey, GPM Intern, Marcos Santos

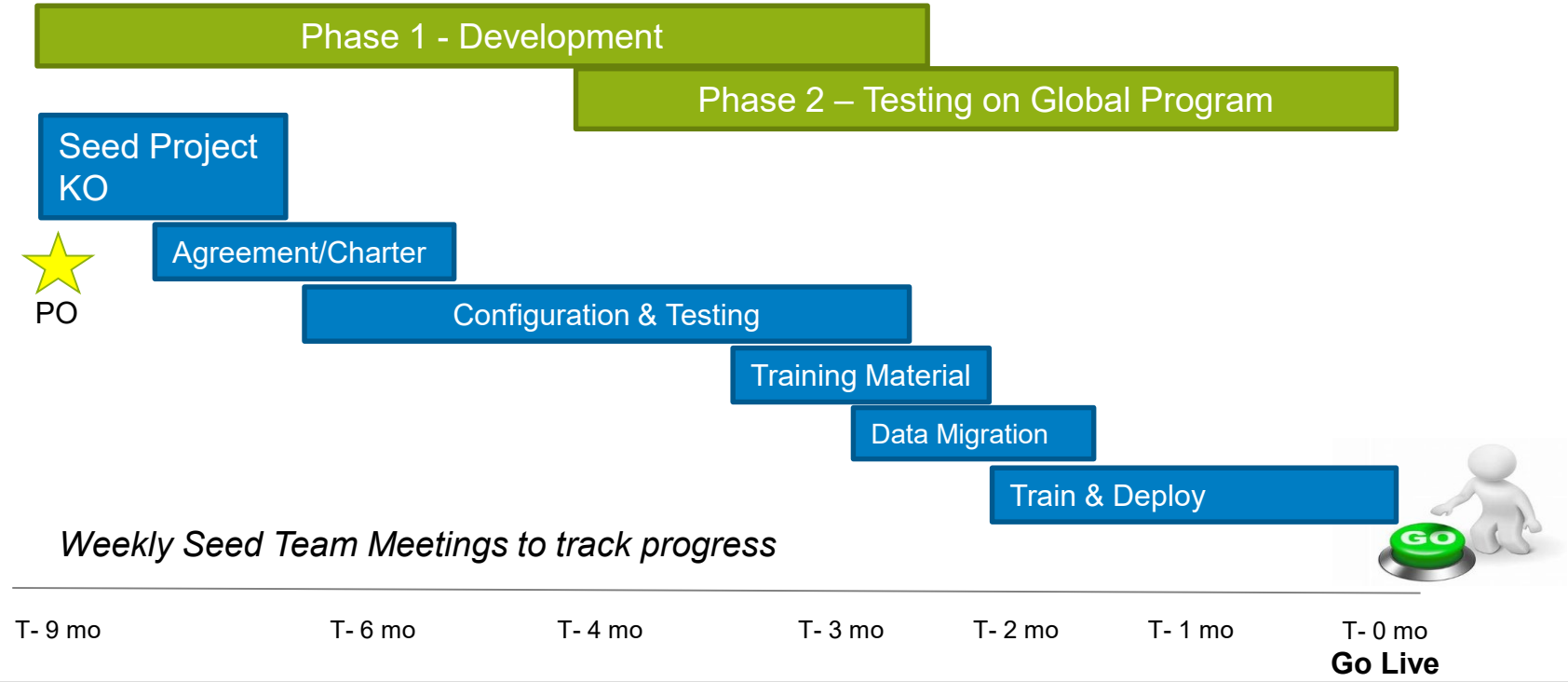
High Level Project Plan

Planning and Knowledge Sharing Complete - **April 18th**
Initial Auros Training Complete - **May 23rd**
Initial System Configuration Complete - **June 6th**
Pilot and System Adaptation Complete - **June 20th**
Feedback and Production Planning Complete - **July 4th**

Global Project Management - Auros Workflow



Timing – Steps to Go Live



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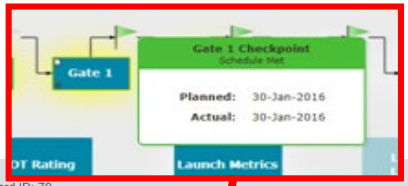
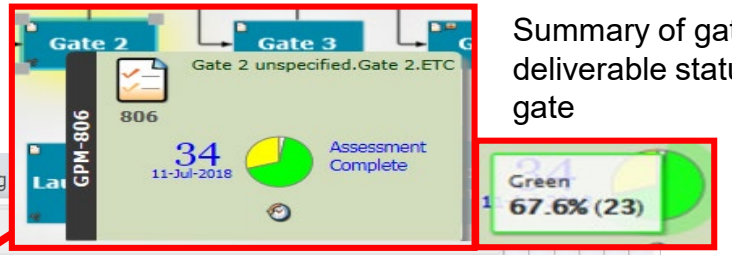
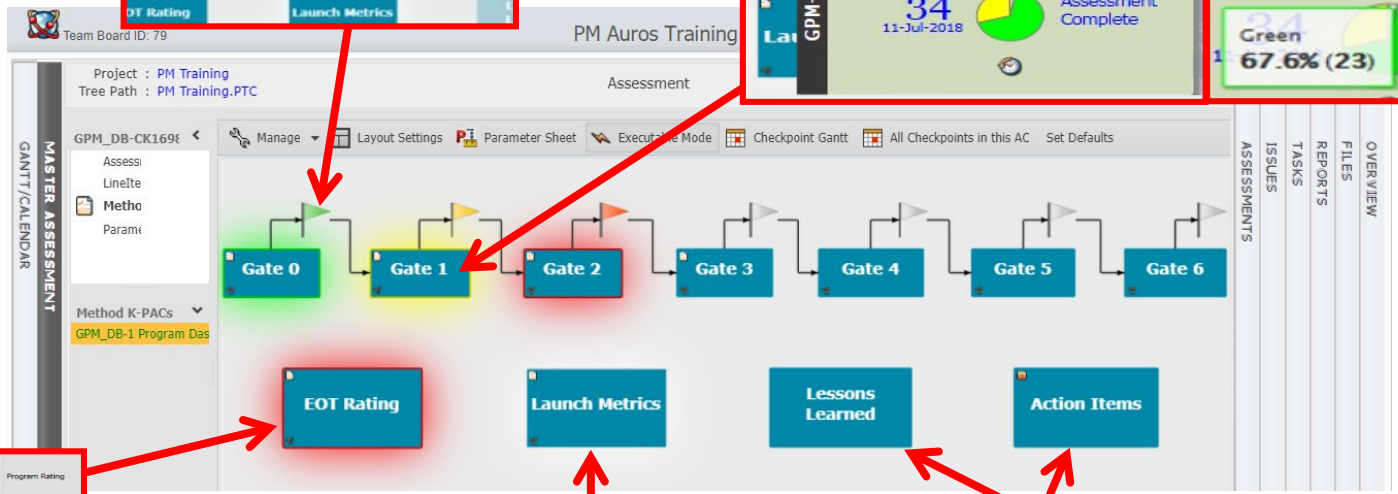
Program Dashboard – Method View

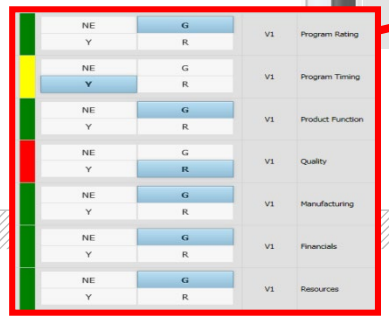
Gate planning for global roll up



Summary of gate deliverable status by gate







EOT program rating by function

Launch Metric report generated monthly – replace file on ICE

Developing area to track lessons learned and team action planning

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Gate Reviews

1. Click on the Top Left Icon to Access the Gate Review Checklist

Color of the Flags:
Green = Gate done on time
Yellow = Gate done late
Red = Gate overdue

Summary shows how many metrics, rating of each for this program, and date updated

Color of the Boxes:
Green = All elements evaluated green
Yellow = At least one element evaluated yellow
Red = At least one element evaluated red

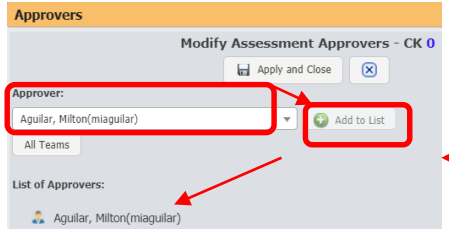
2. Click on tab to open metrics for that project

Hover over pie chart for conformance state counts (Red / Yellow / Green)

Fill Out Header

1. Click and select the appropriate Gate from the drop-down

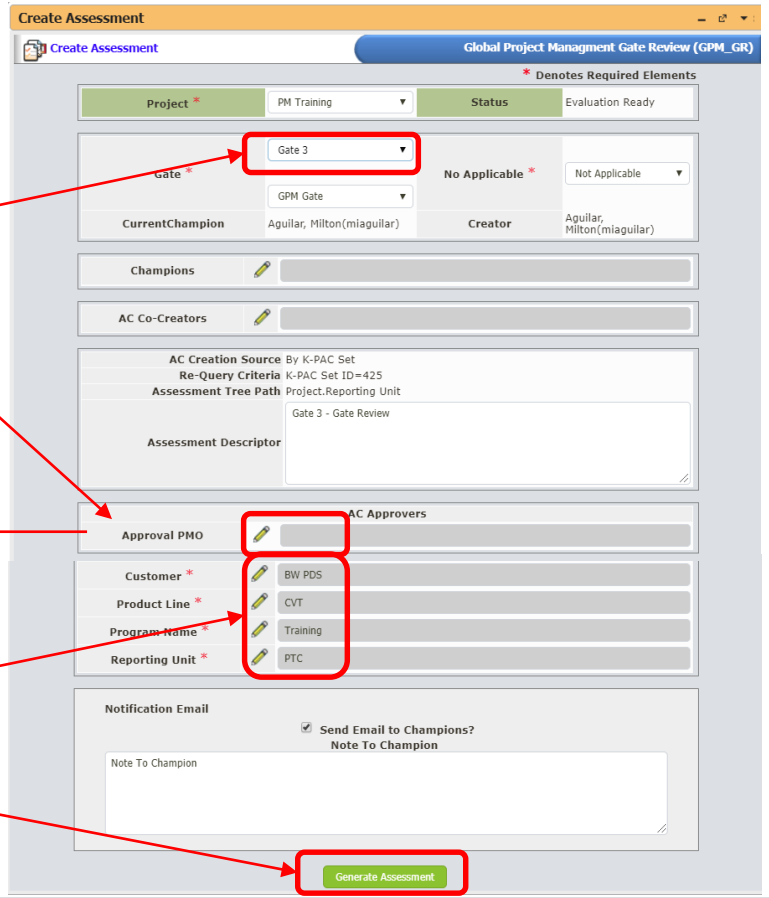
2. On Approval PMO, add “miaguilar”



3. Modify fields if blank or not correct

4. Generate Assessment

5. Close the window



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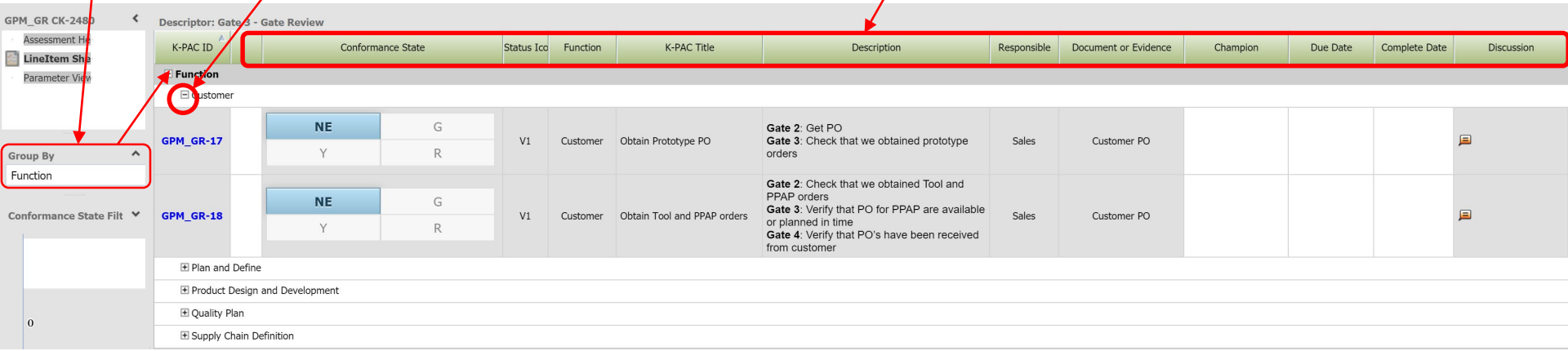
Grouping, Gate Elements and Help Text

1. If you want, select the field to group

2. Click to expand the Gate Elements

Hover over field names for help instructions and explanation



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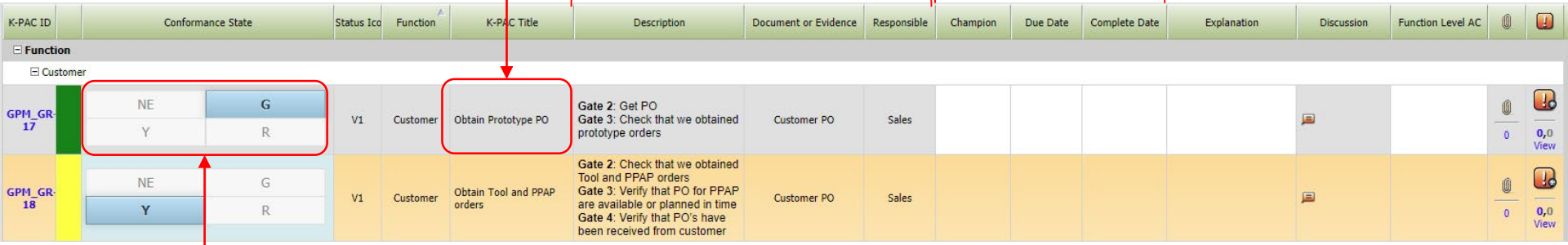
Gate Tracking and Evaluation

1. Check each Gate Element (K-PAC)

2. Review the support information for each Gate Element.

3. Assign specific Champion, Due and Complete Date



K-PAC ID	Conformance State	Status Ico	Function	K-PAC Title	Description	Document or Evidence	Responsible	Champion	Due Date	Complete Date	Explanation	Discussion	Function Level AC		
Function															
Customer															
GPM_GR-17	NE / G / Y / R	V1	Customer	Obtain Prototype PO	**Gate 2**: Get PO **Gate 3**: Check that we obtained prototype orders	Customer PO	Sales							0	0,0 View
GPM_GR-18	NE / G / **Y** / R	V1	Customer	Obtain Tool and PPAP orders	**Gate 2**: Check that we obtained Tool and PPAP orders **Gate 3**: Verify that PO for PPAP are available or planned in time **Gate 4**: Verify that PO's have been received from customer	Customer PO	Sales							0	0,0 View

4. For each Gate Element (K-PAC) assign a Color Rating / Conformance State

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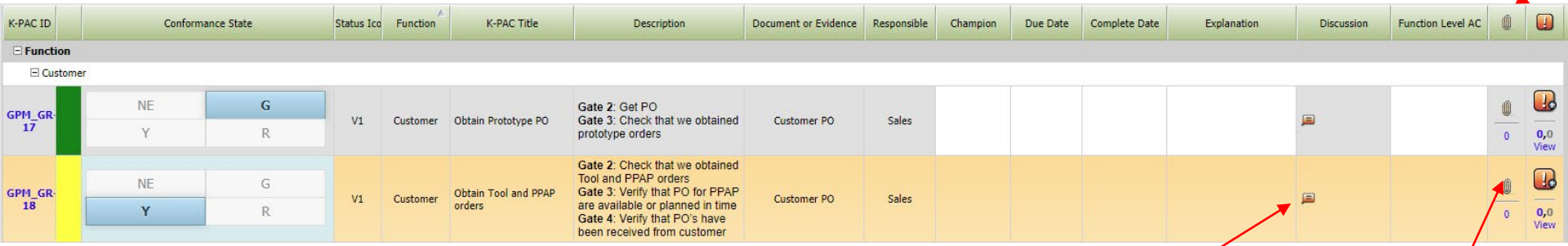
Gate Tracking and Evaluation

5. Use Explanation to summarize the status, this will be presented in the Gate Review

8. If an element is rated red or yellow, create an issue so you can easily track the action plan to improve it.



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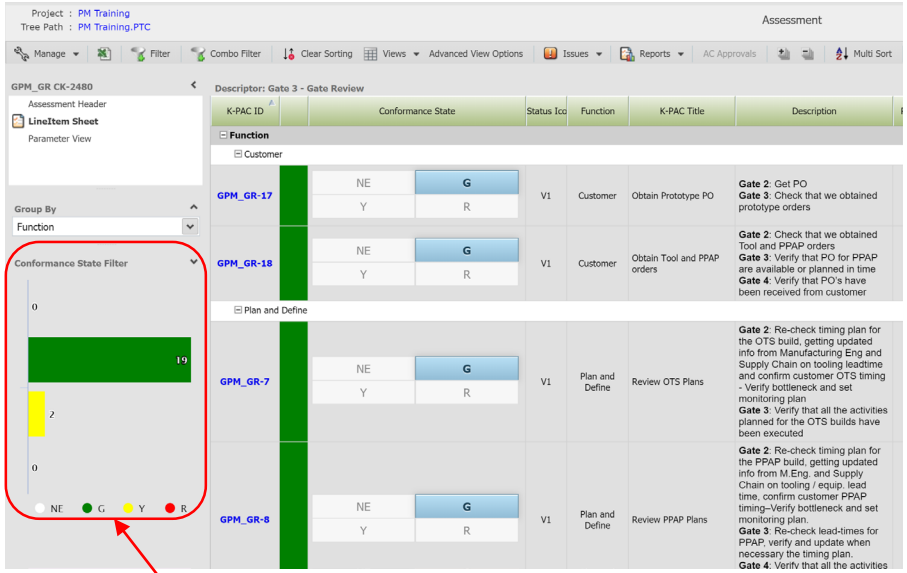
GPM_GR-18		NE / G / Y / R	V1	Customer	Obtain Tool and PPAP orders	**Gate 2**: Check that we obtained Tool and PPAP orders **Gate 3**: Verify that PO for PPAP are available or planned in time **Gate 4**: Verify that PO's have been received from customer	Customer PO	Sales						0		0,0 View

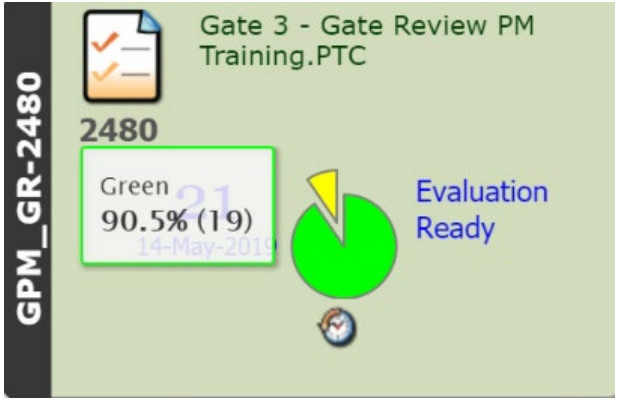
6. Use discussion for any notes

7. You can add attachments to each Gate Element

Gate Tracking and Evaluation



In the Left Side of the Assessment you will see the Conformance Status Summary



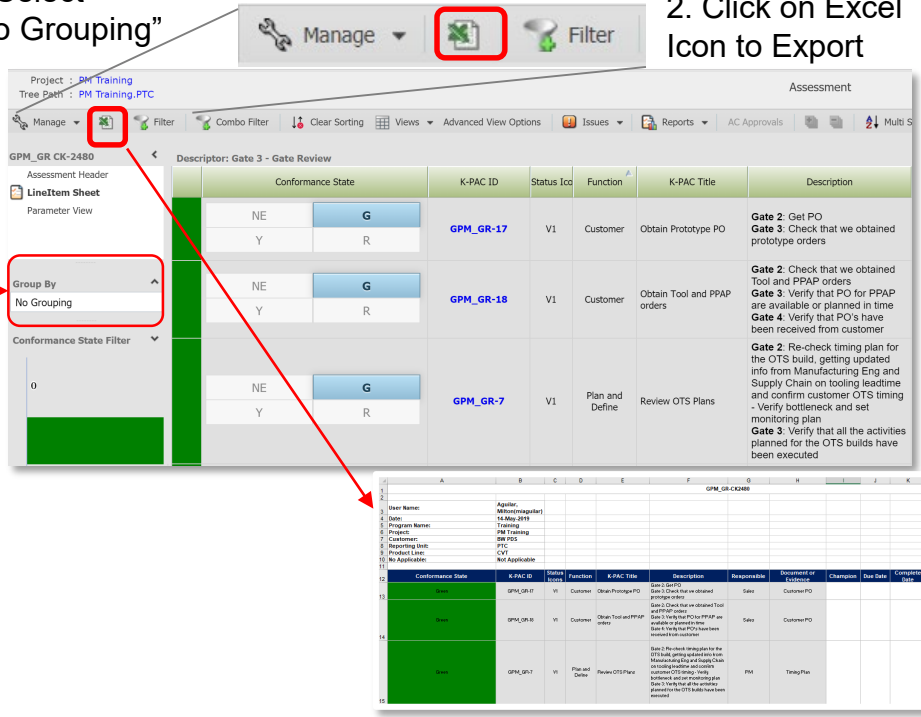
Also on the Master Assessment View, when hover over pie chart, the status is updated

Leadership Reviews

Morse Systems	MP-PM-006	BorgWarner
Originator: D. Robert	Revision: A	Effective Date: 2/5/19
TITLE: Gate Review Format		

1. Select "No Grouping"

2. Click on Excel Icon to Export



Checklist Status

Insert the corresponding Gate Review Report out of Auros.

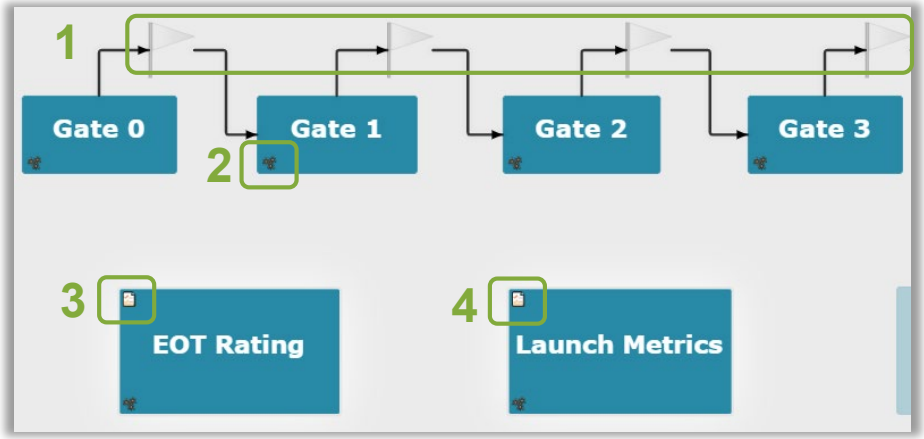
Conformance State	Function	K-PAC Title	Responsible	Explanation
Green	Customer	Obtain Prototype PO	Sales	
Yellow	Customer	Obtain Tool and PPAP orders	Sales	
Green	Plan and Define	Review OTS Plans	PM	
Green	Plan and Define	Review PPAP Plans	PM	
Green	Plan and Define	Review SOP Plans	PM	
Green	Plan and Define	Prototype Builds Plan Of Record POR	PM	
Green	Plan and Define	Auros Team Board updated	PM	
Green	Product Design and Development	ESO 1 - Release of R1 DWG (Proto)	Product Eng	
Green	Product Design and Development	ESO 2 - Release of R2 DWG (Production Intent)	Product Eng	
Yellow	Product Design and Development	ESO 3 - Release of R3 DWG (Mass Production)	Product Eng	
Yellow	Product Design and Development	Check DV/PV Testing Status	Product Eng	
Green	Product Design and Development	Review Pending Design Changes	Product Eng	
Green	Quality Plan	Control Plans Complete	Plant Quality	
Green	Quality Plan	Update Critical Parameters Scorecard (CPS)	Plant Quality	
Green	Quality Plan	Review Quality of OTS Parts	Plant Quality	
Green	Quality Plan	Approve Supplier's OTS parts	Plant Quality	
Green	Quality Plan	Incoming Inspection Control Plans	Plant Quality	
Green	Quality Plan	Measurement Systems Analysis (MSA)	Plant Quality	
Green	Quality Plan	Correlation Studies, Calibrations Complete, with Schedules		
Green	Supply Chain Definition	APQP Supplier Launch Management	SDE	
Green	Supply Chain Definition	Supplier Packaging Form	Adv Purch Mgr	

Just leave the following columns as shown above:

- Conformance State
- Function
- K-PAC Title
- Responsible
- Explanation

Basic Tasks to Do in Auros Weekly

1. Assign/Update the Gate Dates on the Gate Flags.
2. Create the corresponding Gate Checklist and evaluate it.
3. Evaluate the EOT Rating with the latest Program status before the Launch Metrics date. This will be reported in the Functional Reviews and EOT.
4. Evaluate the Launch Metrics that apply to your Program status before the Launch Metrics date.



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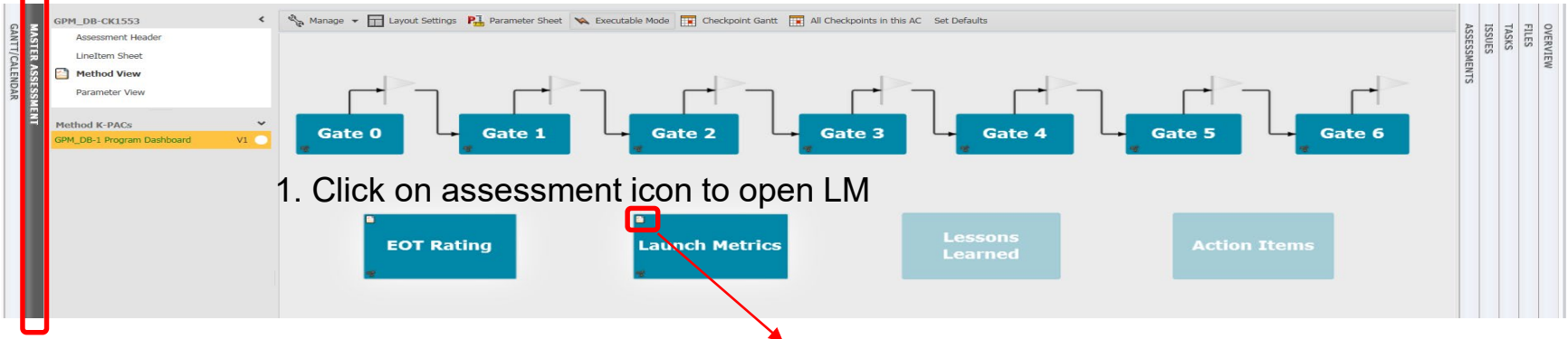
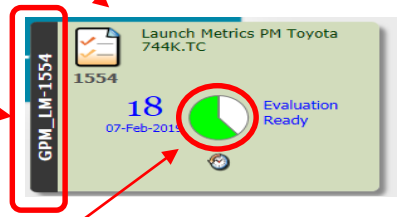
Launch Metric Tracking

Master Assessment tab for dashboard of program

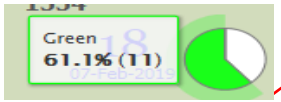


2. Click on tab to open metrics for that project



Summary shows how many gate elements, rating of each for this program, and date updated

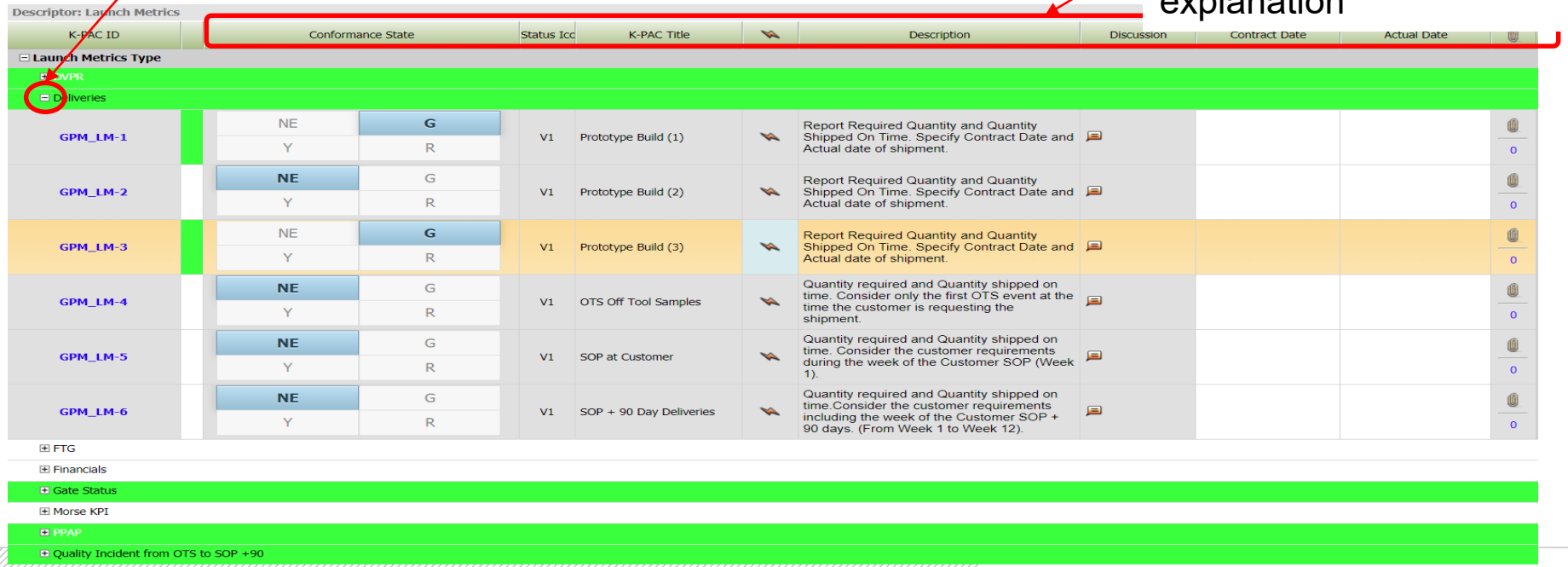
Hover over pie chart for conformance state counts (Red / Yellow / Green)



Help Text and Launch Metrics Type

1. Click to expand the Launch Metrics Type

Hover over field names for help instructions and explanation



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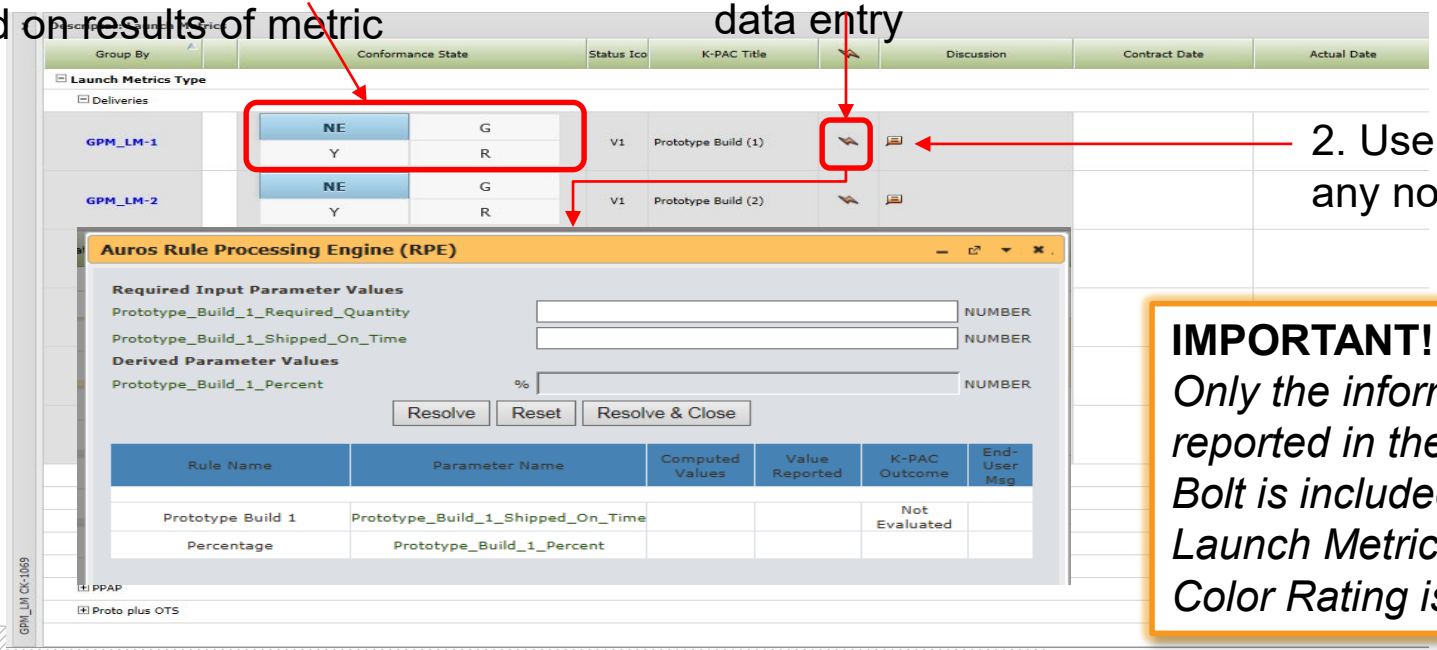
Open Launch Metrics Window

3. Color rating/conformance state will happen automatically based on results of metric

1. Click on icon to open each metric for data entry

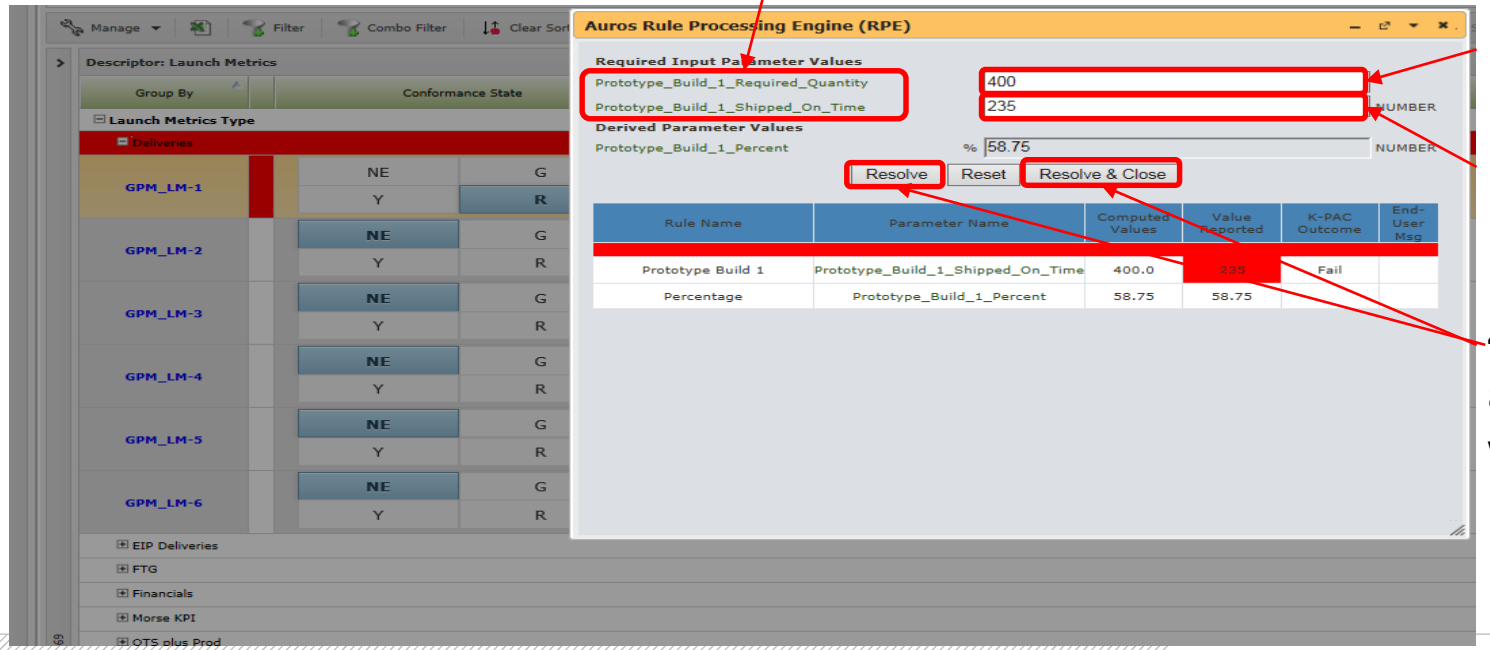


2. Use discussion for any notes

IMPORTANT!
Only the information reported in the Lightening Bolt is included in the Launch Metrics Report. Color Rating is not reported.

Enter Values for Launch Metrics

1. Read Each Sentence in Green to Understand what is Requested



2. Enter Required Metric
3. Enter Actual Metric

4. Record metrics and close window

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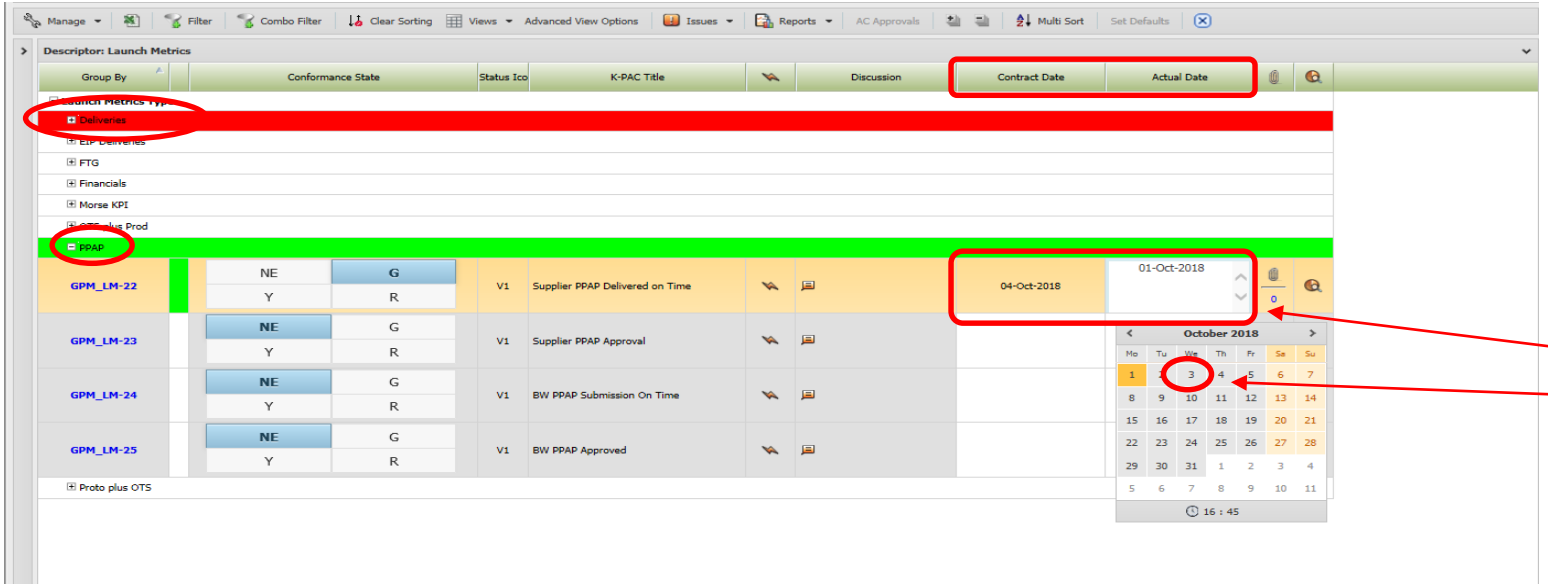
Enter Deliveries & PPAP Dates



Double click and select date from calendar

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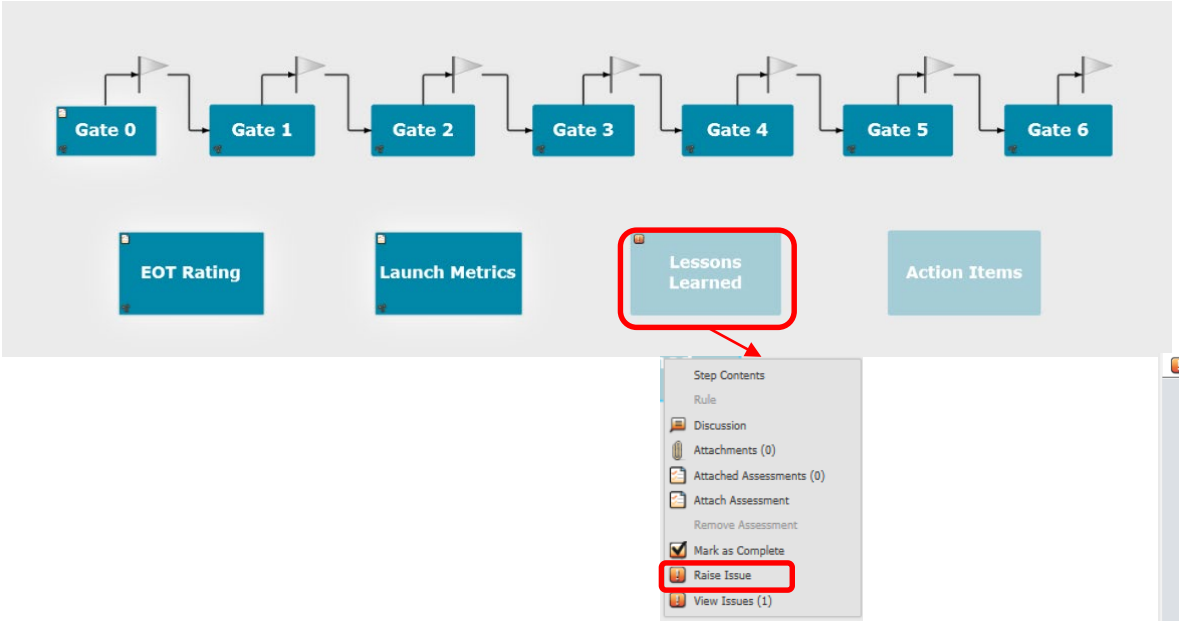
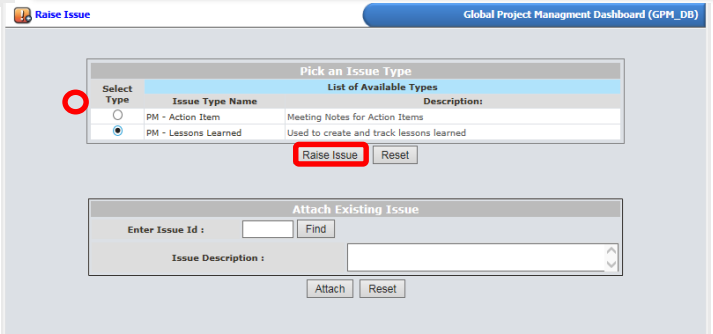
Lesson Learned Tracking

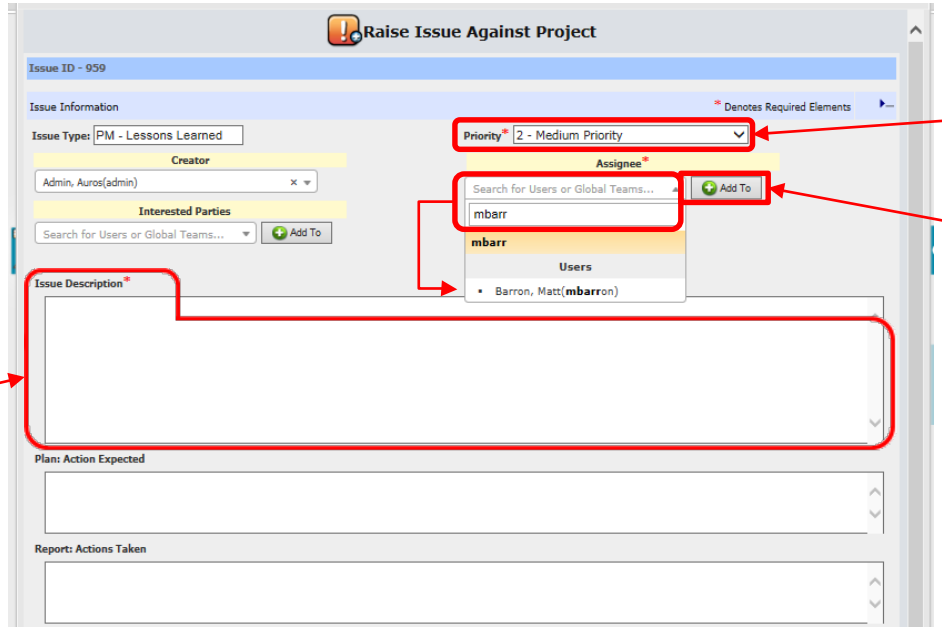


Provides PM with tool to quickly document lessons learned for the organization

Select Lesson Learned and Click on Raise Issue



Add Priority, Assignee, and Description



1. Select Priority from drop down

2. Double click in Assignee field. Type in the user ID of the Assignee.

Select the Assignee from the list.

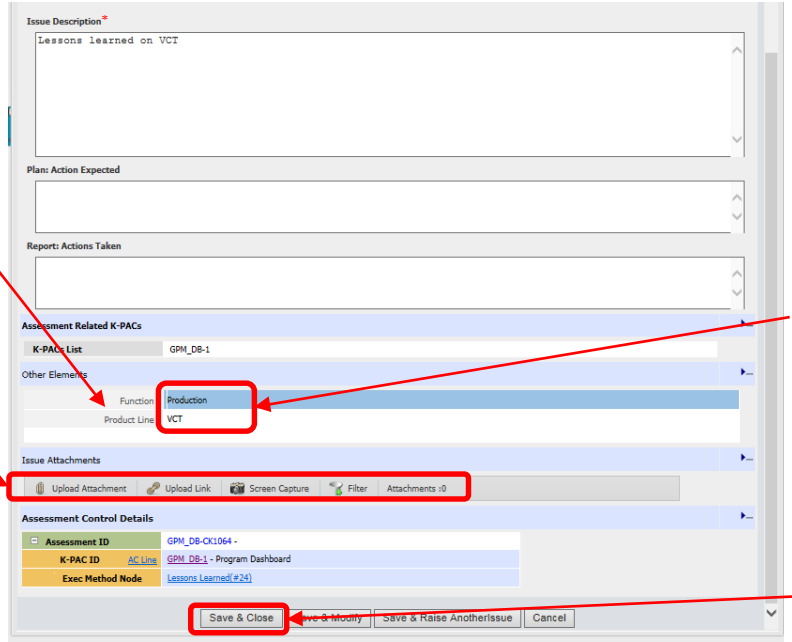
Click Add To

3. Click in the Issue Description field.

Type in the description of the problem experienced or the area of improvement detected

Add Elements and Attachments Save Lessons Learned

1. Hover over the field name for help tips



2.Double click in the open fields and enter the Function and Product Line. This information is very important to make filters and facilitate searches.

3. Add Attachments or Links that explain the Lesson Learned in detail. Make sure that everybody can understand the issue and the knowledge that must be learned/applied.

4. Save Lessons Learned

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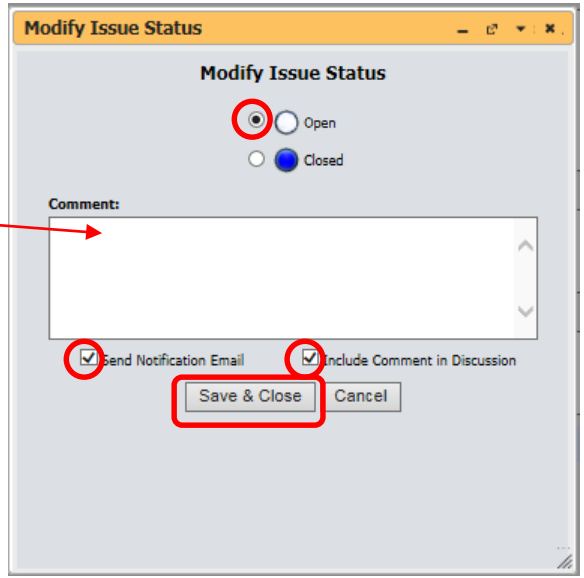
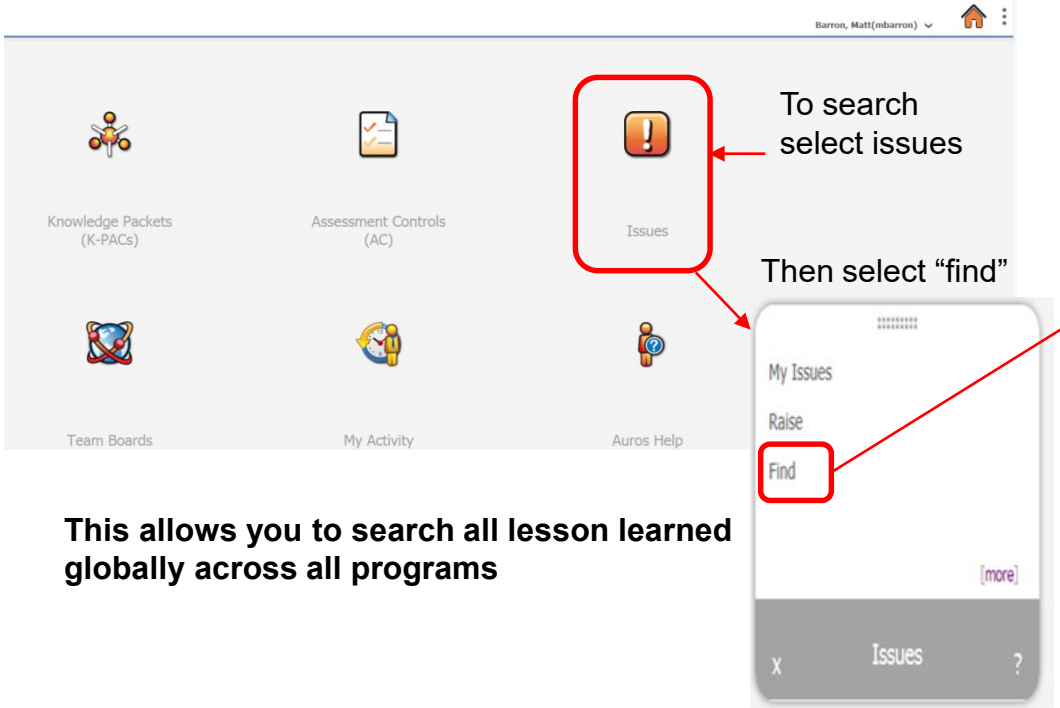
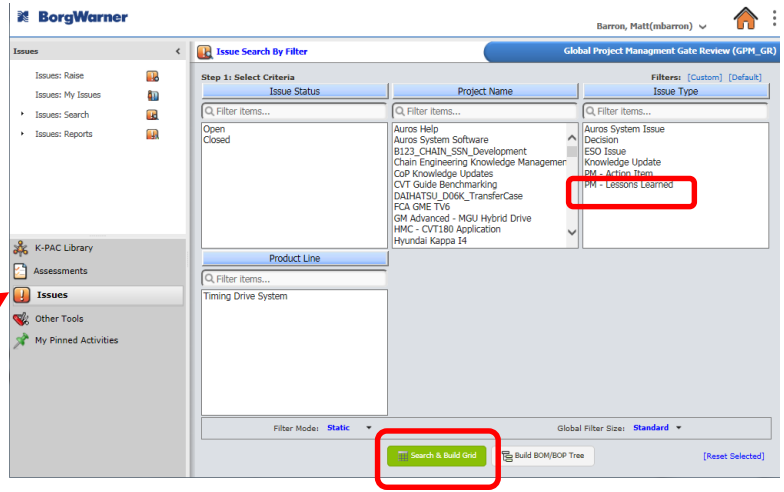
Add Comment and Send Notification

Click and type in comment



Global Read Across





This allows you to search all lesson learned globally across all programs

Select “PM-Lessons Learned” and click “Seach & Build Grid”

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Lessons Learned Guidelines

- What are Lessons Learned
  - Project learning
  - Experiences applicable to future circumstances
  - Recommended changes to practices and procedures
  - Documentation of valuable information
- Lessons Learned Benefits:
  - Prevent repetitive mistakes and reduce waste of resources
  - Promote the occurrence of desirable or positive actions
  - Transfer knowledge to all organization members

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Lessons Learned Guidelines

- Include the Cross Functional Team when generating LL's
- Generate LL's along the Program Life, not at the end. Information may be forgotten.
- Focus on the following:
  - What went well?
  - What was not done well or generated negative consequences?
  - If you have to repeat the process, what would you do different?
  - What recommendations would you give to other people who would do the same process or project?
- When getting answers to the previous questions, ask several times Why? So you can understand the action, knowledge or behavior to be documented.
- Focus on behaviors or tactics that were successful or problematic, rather than people who were successful or problematic
- Document the Lessons Learned in a positive way so its use as best practices is promoted. Identify what successful and repeatable process was used or could be used in the future to ensure improvement?

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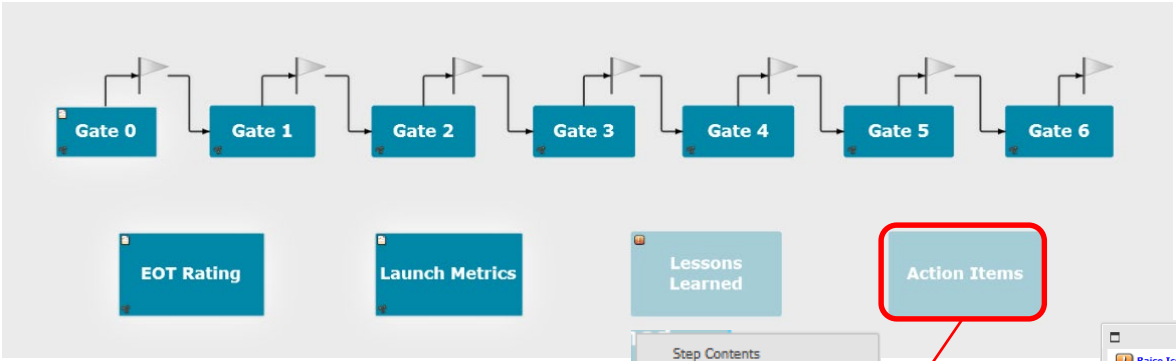
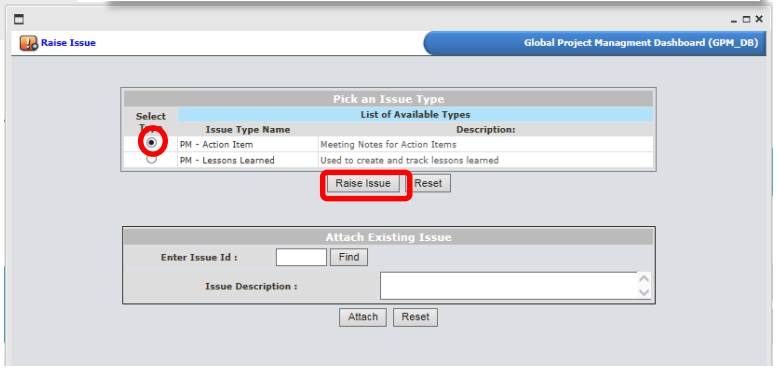
Action Item Tracking



Allows PM to replace off line excel tracking of open action items for the team.

Select Action Item and Click on Raise Issue



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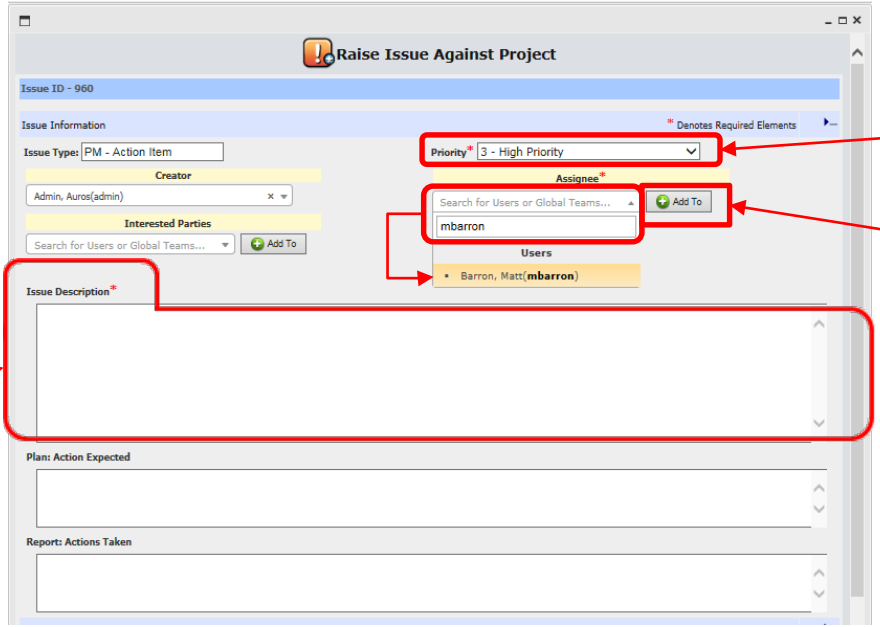
Add Priority, Assignee, and Description



1. Select Priority from drop down

2. Double click in Assignee field. Type in the user ID of the Assignee.

Select the Assignee from the list.

Click Add To

3. Click in the Issue Description field.

Type in the description of the problem experienced or the area of improvement detected

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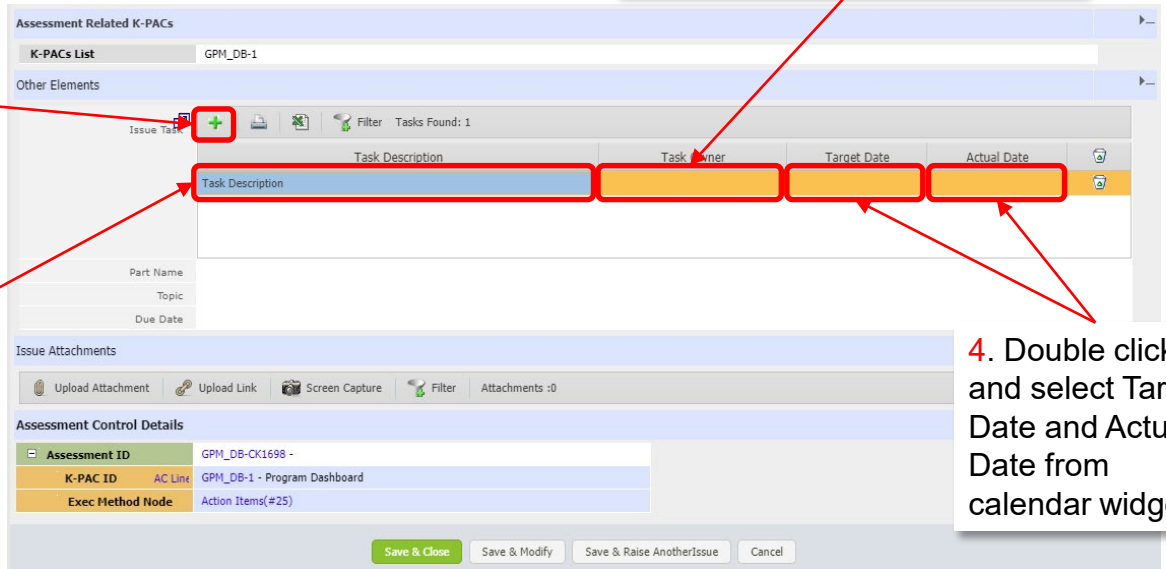
Add Task(s)

1. Click + to add new task

2. Double click and type to add a task description

3. Double click and type in the user ID of Task Owner. Select user name from menu.

4. Double click and select Target Date and Actual Date from calendar widget



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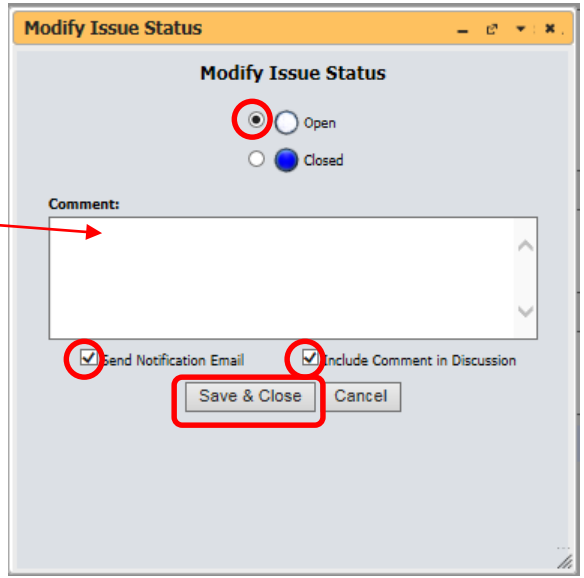
Add Comment and Send Notification

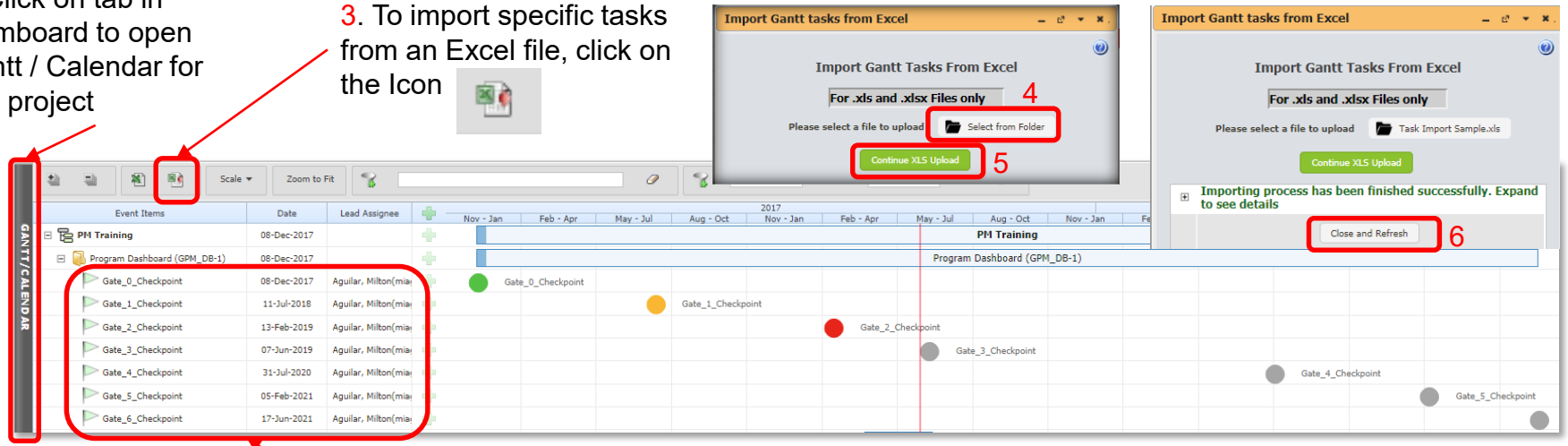
Click and type in comment.



Importing Tasks to Gantt / Calendar

1. Click on tab in teamboard to open Gantt / Calendar for that project

3. To import specific tasks from an Excel file, click on the Icon



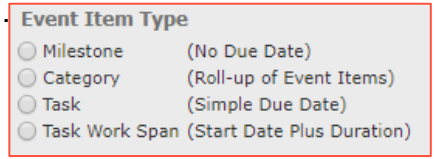
2. The standard Calendar view from Auros will show the Gate Dates (if they are already entered)

Timing from Excel File

The Excel File attached can be used as a template to import tasks to Auros.
It already contains the tasks that were part of the Timing Section in the Contract file.

Taks Import Sample

You only need to add the Deliverable (Task) and a date. Depending on which type of "Event Item" you want to show in the Gantt is the date that should be entered.



Task Id	Deliverable	Target Date	Duration	Source Id	Source Type
	Customer Sourcing Decision	16-may-19	0		
	Program Kickoff meeting	17-may-19	0		
	Prototype Build (1)	18-may-19	0		
	Prototype Build (2)	19-may-19	0		
	Prototype Build (3)	20-may-19	0		
	BW Engineering Release (R2) - ESO2	21-may-19	0		
	A/R Submission Review	22-may-19	0		
	A/R Submitted to Group	23-may-19	0		
	Prespend approval	24-may-19	0		
	AR Approval - Group	25-may-19	0		
	AR Approval - Corp	26-may-19	0		
	Supplier feasibility commitment - TFC	27-may-19	0		
	Final supplier selection - SOBO	28-may-19	0		
	Design Verification testing review and print release (R3) - ESO3	29-may-19	0		
	Customer Tooling Release	30-may-19	0		
	Component Supplier Tooling Release	31-may-19	0		
	Capital Supplier Release	01-jun-19	0		
	Supplier OTS parts in-house	02-jun-19	0		

Owners are automatically assigned by Auros to the User that is uploading the timing. As mentioned in previous slide, they can be modified if needed

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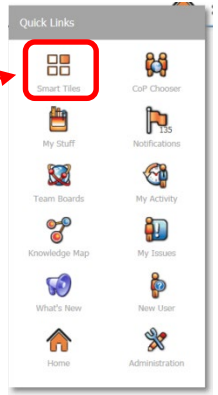
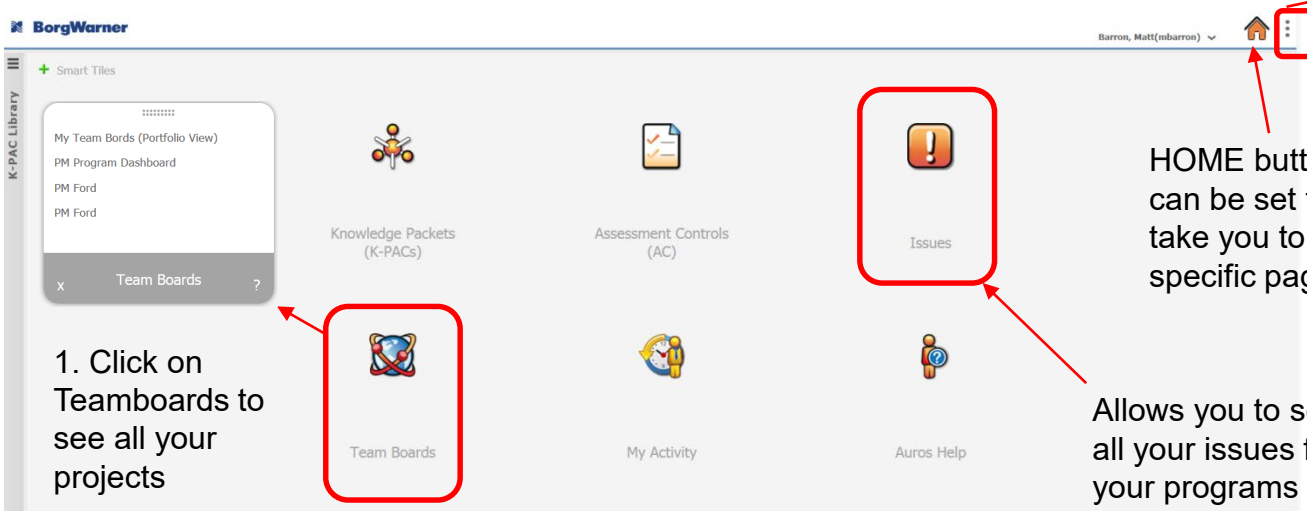
Smart Tiles Home Page

PM's like new landing page that allows you to navigate to all the sections of Auros to manage your programs

Quick links will allow you to get back to smart tile home page



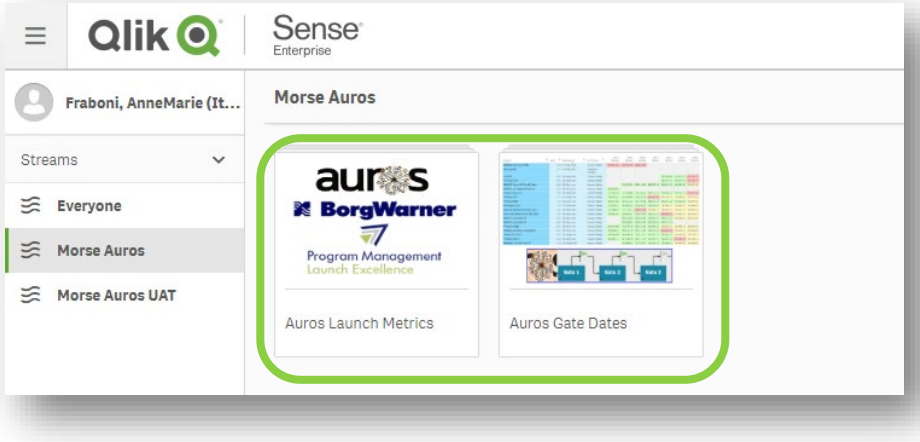


HOME button can be set to take you to a specific page

1. Click on Teamboards to see all your projects

Allows you to see all your issues for your programs

Future Opportunities



- Qlik dashboards using Auros
  - Launched Sept 2019
- Integration with other functions
  - Supply chain / manufacturing engineering
- Approval workflows
- Increase robustness of Lessons Learned process
- Risk Management – standard process and tool to capture possible risk for the programs

Thank you!

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