

BorgWarner

Program Management Launch Excellence



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Global Program Manager

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Content

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

OUR VISION

A clean, energy-efficient world

OUR MISSION

Propulsion System Leader for
Combustion, Hybrid and Electric
Vehicles

BorgWarner in numbers

30,000
employees

68 **19**
Locations Countries

2018 Sales
\$10.5
Billion
consolidated

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

Strategic Global Operations

24

locations in
the Americas

20

locations in
Europe

24

locations in
Asia

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

Morse Systems at a glance

Engine Timing
Systems

Variable Cam
Timing Systems

Solenoids and
Actuators

HY-VO®
Drivetrain Chain

18 Locations
10 Countries

Performance

Efficiency

Customer
Value

Strategic Global Operations



Morse Systems Technology



NEW



On board charger



NEW



Battery Modules



NEW



P0 Belt Tensioner



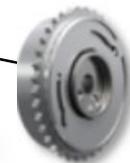
Solenoids and Oil Control Valves



Power Transmission Chains



Timing System Components



Hydraulic Variable Cam Timing



Charging Stations



Seed Project Overview



Program Leader: [] Revision Date: []

Calendar Year	Volume		Revenue		Rating
	BW Contract	Current	BW Contract	Current	
2004			\$0	\$0	Red
2005			\$0	\$0	Red
2006			\$0	\$0	Red
2007					
2008					
2009					
2010					

BorgWarner
Morse Systems

Program Management Process

Gate 0	AR Kick Off	Req'd Data Kick Off	OTS	PPAP	SCP	SCP-30
State organizer	Sales	PM	PM	PM	PM	PM
State Response	PM	PM	PM	PM	PM	PM

Program Life Cycle

NUD's

Timing / P...

Quality Gate

Customer S...

Prototype O...

Prototype R...

Program Charter

Gate Check List

Program Timing Plan
EOT

Morse PM Metrics

PROGRAM REVIEW

Label	RU	PROGRAM	CUSTOMER	Product Line	Program Manager	Prod Revenue Local Currency	Prod Revenue USD	Prod Revenue Top	GM %	AR Approval date	OTS date	PPAP date	SOP date	Max	Year	Rate	Program Review Rating
1	MSA	L Nova		MC30													

RU	PM	Customer	Program Name	Prod line	BW Delivies	Proto-OTS	OTS+Prod	BIP Delivies	PPAP	Supplier PPAP	BW PPAP	FTG	Financials	Prototype Build (1)			Prototype Build (2)			Prototype Build (3)				
														Req'd qty	Qty shipped on time	Rating	Req'd qty	Qty shipped on time	Rating	Req'd qty	Qty shipped on time	Rating		
MSA	L Nova		MC30		1	1	1	100%	1	1	1	1	N/A											

Do not modify the above cells - that contain formulas

COMMENTS: Input your comments, notes if necessary

- 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**

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 preparation / 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%	

■ 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**

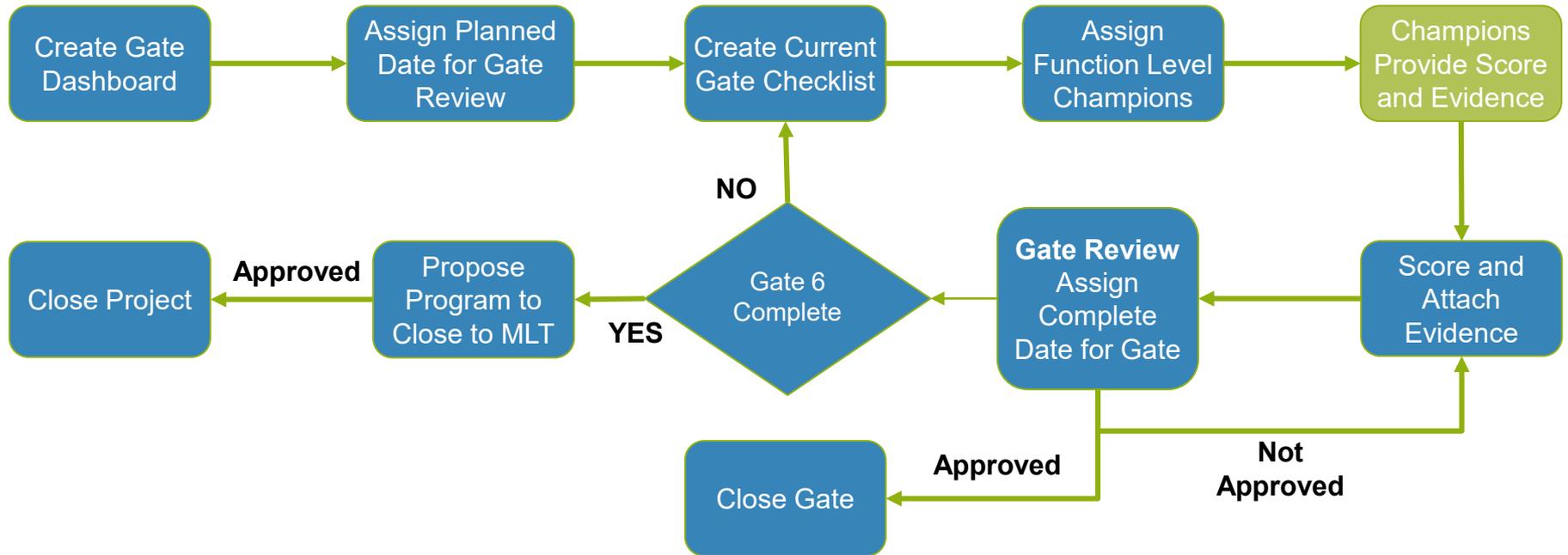
Initial Auros Training Complete - **May 23rd**

Initial System Configuration Complete - **June 6th**

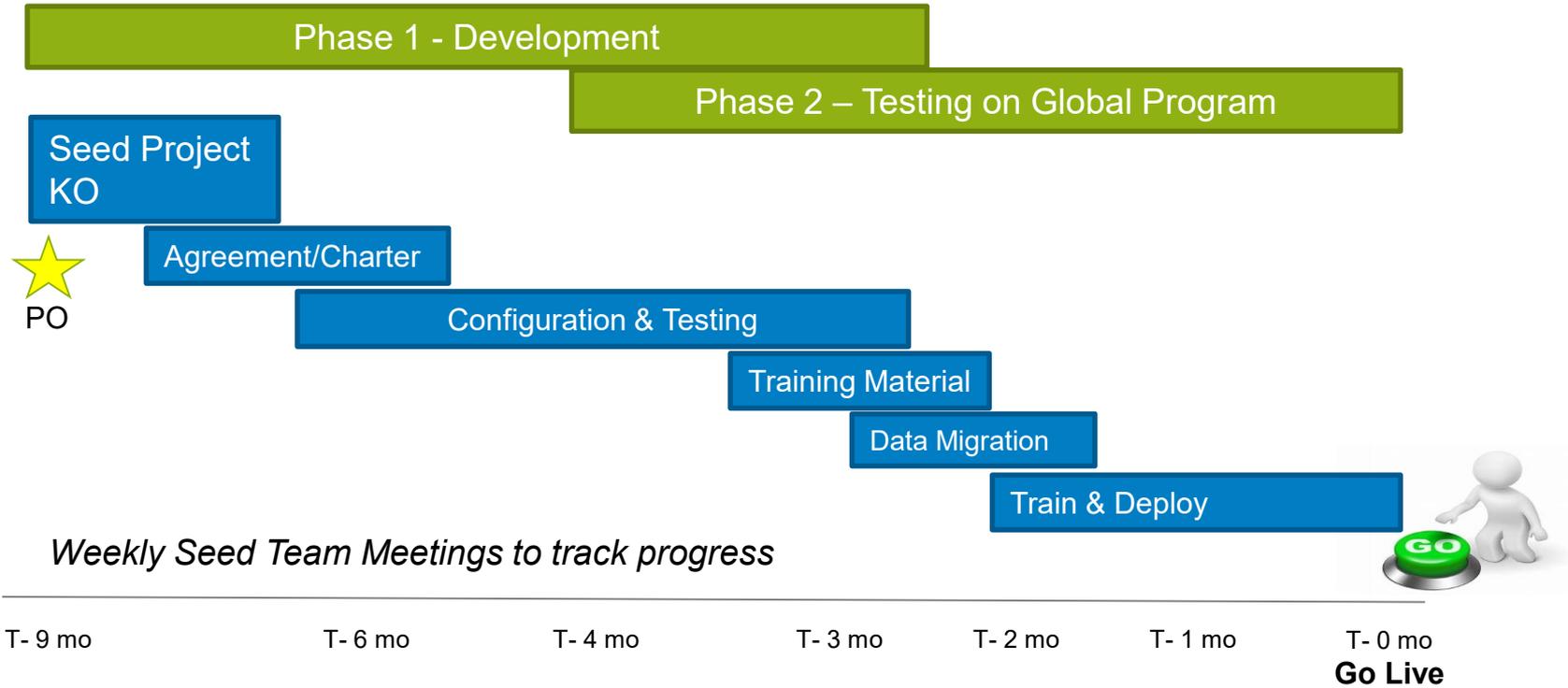
Pilot and System Adaptation Complete - **June 20th**

Feedback and Production Planning Complete - **July 4th**

Global Project Management - Auros Workflow

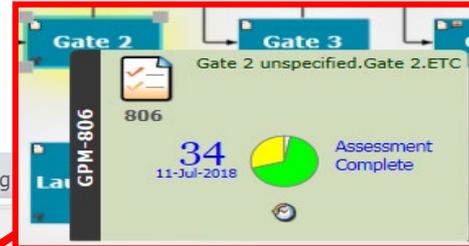
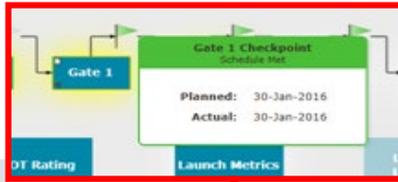


Timing – Steps to Go Live



Program Dashboard – Method View

Gate planning for global roll up



Summary of gate deliverable status by gate



NE	G	V1	Program Rating
Y	R		
NE	G	V1	Program Timing
Y	R		
NE	G	V1	Product Function
Y	R		
NE	G	V1	Quality
Y	R		
NE	G	V1	Manufacturing
Y	R		
NE	G	V1	Financials
Y	R		
NE	G	V1	Resources
Y	R		

EOT program rating by function

Launch Metric report generated monthly – replace file on ICE

Developing area to track lessons learned and team action planning

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



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

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

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 “miagular”

Approvers

Modify Assessment Approvers - CK 0

Apply and Close

Approver: Aguilar, Milton(miagular) Add to List

All Teams

List of Approvers:

Aguilar, Milton(miagular)

3. Modify fields if blank or not correct
4. Generate Assessment
5. Close the window

Create Assessment

Global Project Management Gate Review (GPM_GR)

* Denotes Required Elements

Project * PM Training Status Evaluation Ready

Gate * Gate 3

No Applicable * Not Applicable

GPM Gate

CurrentChampion Aguilar, Milton(miagular) Creator Aguilar, Milton(miagular)

Champions

AC Co-Creators

AC Creation Source By K-PAC Set
Re-Query Criteria K-PAC Set ID=425
Assessment Tree Path Project.Reporting Unit
Gate 3 - Gate Review

Assessment Descriptor

Approval PMO

AC Approvers

Customer * BW PDS

Product Line * CVT

Program Name * Training

Reporting Unit * PTC

Notification Email

Send Email to Champions?
Note To Champion

Generate Assessment

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

The screenshot displays a software interface for reviewing gate elements. The table has the following columns: K-PAC ID, Conformance State, Status Ico, Function, K-PAC Title, Description, Responsible, Document or Evidence, Champion, Due Date, Complete Date, and Discussion. Two rows are visible, both for 'Customer' and 'Obtain' related tasks. The first row (GPM_GR-17) has a description: 'Gate 2: Get PO', 'Gate 3: Check that we obtained prototype orders', and 'Responsible: Sales'. The second row (GPM_GR-18) has a description: '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', and 'Responsible: Sales'. A sidebar on the left shows 'Group By' set to 'Function' and a 'Conformance State Filter'.

K-PAC ID	Conformance State	Status Ico	Function	K-PAC Title	Description	Responsible	Document or Evidence	Champion	Due Date	Complete Date	Discussion	
GPM_GR-17	NE Y	G R	V1	Customer	Obtain Prototype PO	Gate 2: Get PO Gate 3: Check that we obtained prototype orders	Sales	Customer PO				
GPM_GR-18	NE Y	G 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	Sales	Customer PO				

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 Y	G 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 Y	G 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

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.

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	V1	Customer	Obtain Prototype PO	Gate 2: Get PO Gate 3: Check that we obtained prototype orders	Customer PO	Sales						0	0,0 View
	Y	R													
GPM_GR_18	NE	G	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
	Y	R													

6. Use discussion for any notes

7. You can add attachments to each Gate Element

Gate Tracking and Evaluation

Project : PM Training
Tree Path : PM Training.PTC

Assessment

Manage Filter Combo Filter Clear Sorting Views Advanced View Options Issues Reports AC Approvals Multi Sort

GPM_GR_CK-2480
Assessment Header
LineItem Sheet
Parameter View

Descriptor: Gate 3 - Gate Review

K-PAC ID	Conformance State	Status	Icon	Function	K-PAC Title	Description
Function						
Customer						
GPM_GR-17	NE	G		V1	Customer	Obtain Prototype PO
	Y	R				Gate 2: Get PO Gate 3: Check that we obtained prototype orders
GPM_GR-18	NE	G		V1	Customer	Obtain Tool and PPAP orders
	Y	R				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
Plan and Define						
GPM_GR-7	NE	G		V1	Plan and Define	Review OTS Plans
	Y	R				Gate 2: Re-check timing plan for the OTS build, getting updated info from Manufacturing Eng and Supply Chain on tooling leadtime and confirm customer OTS timing -Verify bottleneck and set monitoring plan Gate 3: Verify that all the activities planned for the OTS builds have been executed
GPM_GR-8	NE	G		V1	Plan and Define	Review PPAP Plans
	Y	R				Gate 2: Re-check timing plan for the PPAP build, getting updated info from M.Eng. and Supply Chain on tooling / equip. lead time, confirm customer PPAP timing-Verify bottleneck and set monitoring plan. Gate 3: Re-check lead-times for PPAP, verify and update when necessary the timing plan. Gate 4: Verify that all the activities

Group By: Function

Conformance State Filter

0
19
2
0

NE G Y R

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

1. Select "No Grouping"

2. Click on Excel Icon to Export

The screenshot shows the 'Assessment' window for 'Descriptor: Gate 3 - Gate Review'. The 'Group By' dropdown is set to 'No Grouping'. The 'Excel' icon in the top toolbar is highlighted with a red box. Below the main table, a preview of the exported Excel file is shown, containing columns for Conformance State, K-PAC ID, Status, Function, K-PAC Title, and Description.

Conformance State	K-PAC ID	Status	Function	K-PAC Title	Description
Green	GPM_GR-17	V1	Customer	Obtain Prototype PO	Gate 2. Get PO Gate 3. Check that we obtained prototype orders
Yellow	GPM_GR-18	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
Green	GPM_GR-7	V1	Plan and Define	Review OTS Plans	Gate 2. Re-check timing plan for the OTS build, getting updated info from Manufacturing Eng and Supply Chain on tooling leadtime and confirm customer OTS timing - Verify bottleneck and set monitoring plan Gate 3. Verify that all the activities planned for the OTS builds have been executed

Checklist Status

Insert the corresponding Gate Review Report out of Auros.

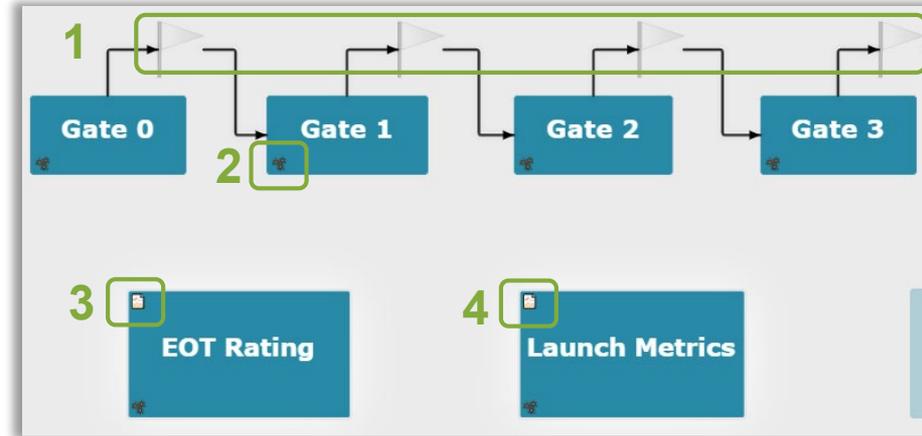
Conformance State	Function	K-PAC Title	Responsible	Explanation
Green	Customer	Obtain Prototype PO	Sales	
Yellow	Customer	Obtain Tool and PPAP orders	Sales	
Green	Plan and Define	Review OTS Plans	PM	
Green	Plan and Define	Review PPAP Plans	PM	
Green	Plan and Define	Review SOP Plans	PM	
Green	Plan and 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

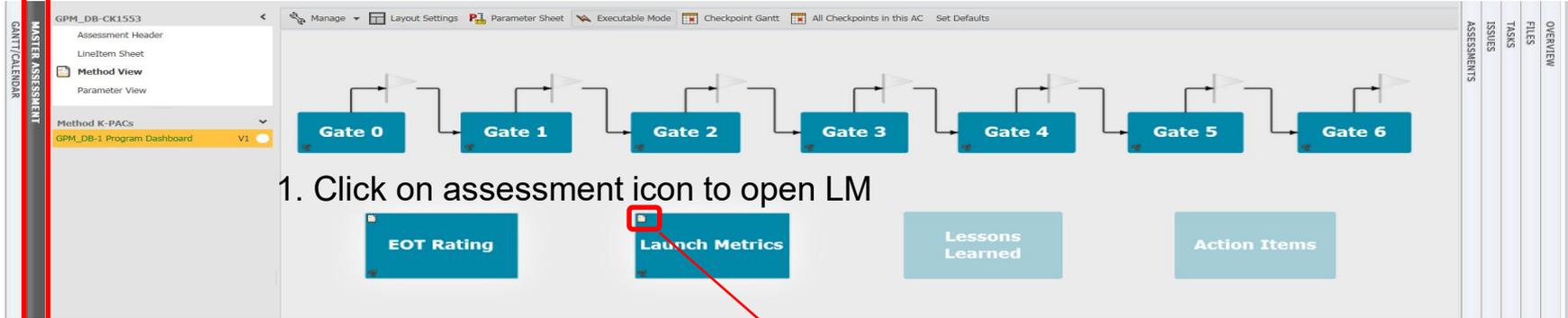
Basic Tasks to Do in Auros Weekly

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.

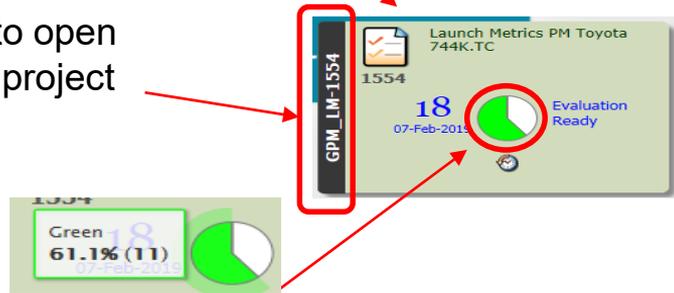


Launch Metric Tracking

Master Assessment tab for dashboard of program



2. Click on tab to open metrics for that project



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

Help Text and Launch Metrics Type

Hover over field names for help instructions and explanation

1. Click to expand the Launch Metrics Type

Descriptor: Launch Metrics

K-PAC ID	Conformance State	Status	Icon	K-PAC Title	Description	Discussion	Contract Date	Actual Date
Launch Metrics Type								
SVPR								
Deliveries								
GPM_LM-1	NE	G		V1	Prototype Build (1)	Report Required Quantity and Quantity Shipped On Time. Specify Contract Date and Actual date of shipment.		
	Y	R						0
GPM_LM-2	NE	G		V1	Prototype Build (2)	Report Required Quantity and Quantity Shipped On Time. Specify Contract Date and Actual date of shipment.		
	Y	R						0
GPM_LM-3	NE	G		V1	Prototype Build (3)	Report Required Quantity and Quantity Shipped On Time. Specify Contract Date and Actual date of shipment.		
	Y	R						0
GPM_LM-4	NE	G		V1	OTS Off Tool Samples	Quantity required and Quantity shipped on time. Consider only the first OTS event at the time the customer is requesting the shipment.		
	Y	R						0
GPM_LM-5	NE	G		V1	SOP at Customer	Quantity required and Quantity shipped on time. Consider the customer requirements during the week of the Customer SOP (Week 1).		
	Y	R						0
GPM_LM-6	NE	G		V1	SOP + 90 Day Deliveries	Quantity required and Quantity shipped on time. Consider the customer requirements including the week of the Customer SOP + 90 days. (From Week 1 to Week 12).		
	Y	R						0
FTG								
Financials								
Gate Status								
Morse KPI								
PPAP								
Quality Incident from OTS to SOP +90								

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

The screenshot shows a 'Launch Metrics Type' window with a table of metrics. The table has columns for 'Group By', 'Conformance State', 'Status Icon', 'K-PAC Title', 'Discussion', 'Contract Date', and 'Actual Date'. Two rows are visible: 'GPM_LM-1' and 'GPM_LM-2'. The 'Conformance State' column shows 'NE' and 'Y' for both. The 'Status Icon' column shows a lightning bolt icon for both. The 'Discussion' column shows a document icon for both. A red box highlights the 'NE' and 'Y' cells in the first row. A red arrow points from the lightning bolt icon in the first row to the 'Auros Rule Processing Engine (RPE)' dialog box. The dialog box has a title bar and a close button. It contains two sections: 'Required Input Parameter Values' and 'Derived Parameter Values'. The 'Required Input Parameter Values' section has two input fields: 'Prototype_Build_1_Required_Quantity' and 'Prototype_Build_1_Shipped_On_Time', both labeled 'NUMBER'. The 'Derived Parameter Values' section has one input field: 'Prototype_Build_1_Percent', labeled '%'. Below the input fields are three buttons: 'Resolve', 'Reset', and 'Resolve & Close'. At the bottom of the dialog box is a table with the following data:

Rule Name	Parameter Name	Computed Values	Value Reported	K-PAC Outcome	End-User Msg
Prototype Build 1	Prototype_Build_1_Shipped_On_Time			Not Evaluated	
Percentage	Prototype_Build_1_Percent				

IMPORTANT!
Only the information reported in the Lightning 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

The screenshot displays the Auros Rule Processing Engine (RPE) interface. On the left, a tree view shows a 'Descriptor: Launch Metrics' with a 'Launch Metrics Type' section containing 'Deliveries' and 'GPM_LM-1' through 'GPM_LM-6'. The main area shows 'Required Input Parameter Values' with 'Prototype_Build_1_Required_Quantity' set to 400 and 'Prototype_Build_1_Shipped_On_Time' set to 235. Below this, 'Derived Parameter Values' shows 'Prototype_Build_1_Percent' at 58.75%. A table at the bottom lists rule results:

Rule Name	Parameter Name	Computed Values	Value Reported	K-PAC Outcome	End-User Msg
Prototype Build 1	Prototype_Build_1_Shipped_On_Time	400.0	235	Fail	
Percentage	Prototype_Build_1_Percent	58.75	58.75		

2. Enter Required Metric

3. Enter Actual Metric

4. Record metrics and close window

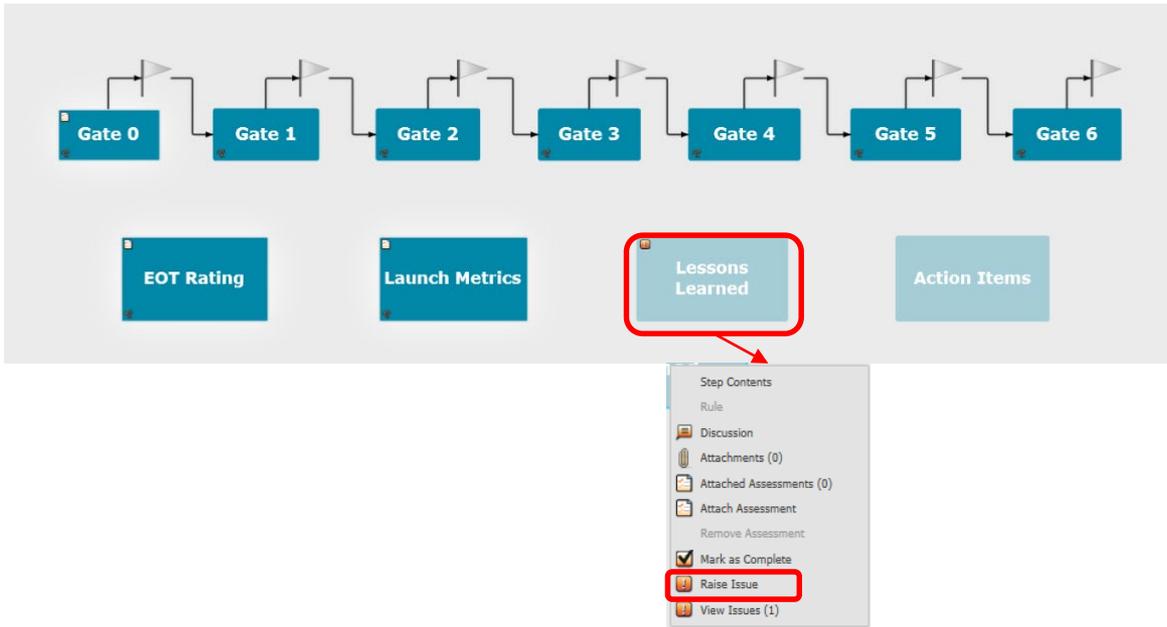
Enter Deliveries & PPAP Dates

The screenshot shows a software interface with a table of data. The table has columns for 'Contract Date' and 'Actual Date'. A calendar is open over the table, showing the date 03-Oct-2018. Red circles and arrows indicate the selection process.

Group By	Conformance State	Status Icon	K-PAC Title	Discussion	Contract Date	Actual Date
Deliveries						
PPAP						
GPM_LM-22	NE	G	V1	Supplier PPAP Delivered on Time	04-Oct-2018	01-Oct-2018
GPM_LM-23	NE	G	V1	Supplier PPAP Approval		
GPM_LM-24	NE	G	V1	BW PPAP Submission On Time		
GPM_LM-25	NE	G	V1	BW PPAP Approved		

Double click and select date from calendar

Lesson Learned Tracking



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

Select Lesson Learned and Click on Raise Issue

Raise Issue Global Project Management Dashboard (GPM_DB)

Pick an Issue Type

Select Type	Issue Type Name	Description:
<input type="radio"/>	PM - Action Item	Meeting Notes for Action Items
<input checked="" type="radio"/>	PM - Lessons Learned	Used to create and track lessons learned

Raise Issue **Reset**

Attach Existing Issue

Enter Issue Id : **Find**

Issue Description :

Attach **Reset**

Add Priority, Assignee, and Description

The screenshot shows a web form titled "Raise Issue Against Project" for "Issue ID - 959". The form includes several sections: "Issue Information" with a "Priority" dropdown menu set to "2 - Medium Priority"; "Creator" with a dropdown menu showing "Admin, Auros(admin)"; "Interested Parties" with a search field and an "Add To" button; "Assignee" with a search field containing "mbarr" and a dropdown menu showing a list of users including "Barron, Matt(mbarron)"; and "Issue Description" with a large text area. Red boxes and arrows highlight the "Priority" dropdown, the "Assignee" search field and dropdown, the "Add To" button, and the "Issue Description" text area.

3. Click in the Issue Description field.

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

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

Add Elements and Attachments

Save Lessons Learned

1. Hover over the field name for help tips

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.

The screenshot shows a software interface for managing lesson learned information. It features several sections:

- Issue Description:** A text area containing "Lessons learned on VCT".
- Plan: Action Expected:** An empty text area.
- Report: Actions Taken:** An empty text area.
- Assessment Related K-PACs:** A table with columns for "K-PACs List" (GPM_DB-1) and "Other Elements". The "Other Elements" table has columns for "Function" (Production) and "Product Line" (VCT), both highlighted with red boxes.
- Issue Attachments:** A section with buttons for "Upload Attachment", "Upload Link", "Screen Capture", "Filter", and "Attachments: 0". A red box highlights the "Upload Attachment" button.
- Assessment Control Details:** A table with columns for "Assessment ID" (GPM_DB-CK1064), "K-PAC ID" (GPM_DB-1 - Program Dashboard), and "Exec Method Node" (Lessons Learned #24).
- Bottom Buttons:** A row of buttons including "Save & Close", "Save & Modify", "Save & Raise Another Issue", and "Cancel". A red box highlights the "Save & Close" button.

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.

4. Save Lessons Learned

Add Comment and Send Notification

Click and
type in
comment

Modify Issue Status

Modify Issue Status

Open
 Closed

Comment:

Send Notification Email Include Comment in Discussion

Save & Close Cancel

Global Read Across

To search select issues

Then select "find"

My Issues

Raise

Find

Team Boards

My Activity

Auros Help

Knowledge Packets (K-PACs)

Assessment Controls (AC)

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

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Issue Search By Filter

Issue Status	Project Name	Issue Type
Open	Auros Help	Auros System Issue
Closed	Auros System Software	Decision
	B123_CHAIN_SSN_Development	ESD Issue
	Chain Engineering Knowledge Manager	Knowledge Update
	CoP Knowledge Updates	PM - Action Item
	CVT Guide Benchmarking	PM - Lessons Learned
	DAHATSU_D06K_TransferCase	
	FCA GME TV6	
	GM Advanced - MGU Hybrid Drive	
	HMC - CVT180 Application	
	Hyundai Kappa I4	

Search & Build Grid

Select "PM-Lessons Learned" and click "Seach & Build Grid"

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

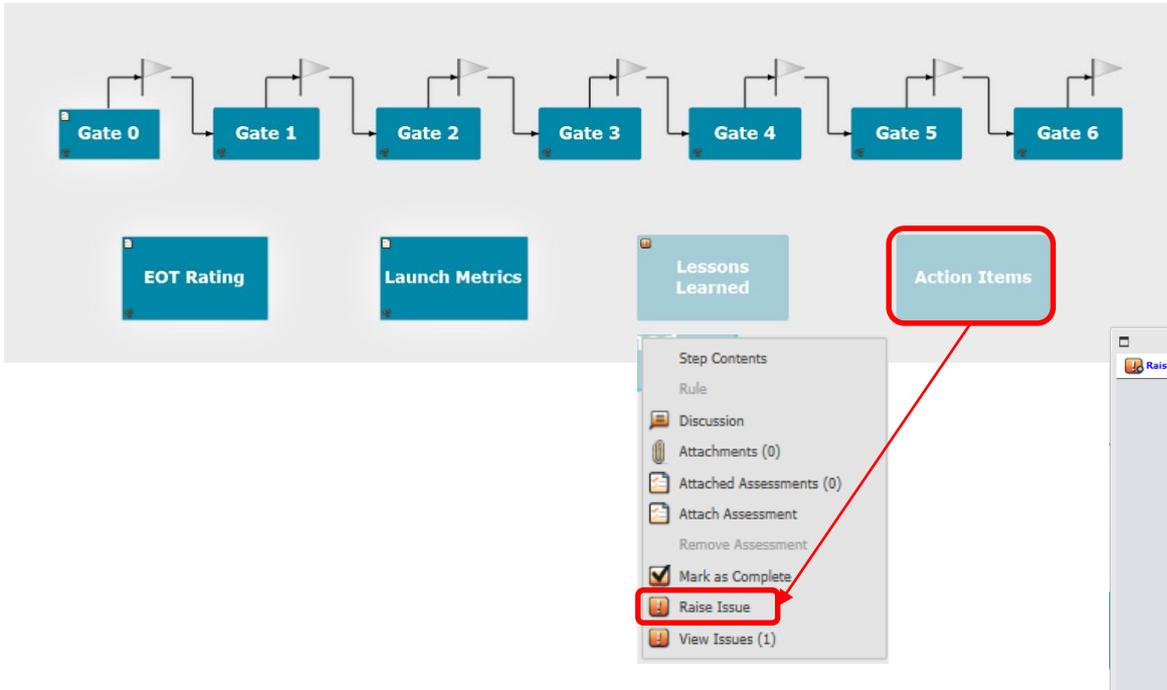
Lessons Learned Guidelines



LESSONS LEARNED

- 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?

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

The screenshot shows the 'Raise Issue' form in the Global Project Management Dashboard (GPM_DB). The form has a 'Pick an Issue Type' section with a table of available types. The 'PM - Action Item' type is selected, and the 'Raise Issue' button is highlighted with a red box. Below is an 'Attach Existing Issue' section with input fields for 'Enter Issue Id' and 'Issue Description'.

Select	Issue Type Name	Description:
<input checked="" type="radio"/>	PM - Action Item	Meeting Notes for Action Items
<input type="radio"/>	PM - Lessons Learned	Used to create and track lessons learned

Add Priority, Assignee, and Description

The screenshot shows a web form titled "Raise Issue Against Project" with the following fields and components:

- Issue ID - 960** (header)
- Issue Information** (section header)
- Issue Type:** PM - Action Item
- Priority*** (dropdown menu): 3 - High Priority
- Assignee*** (search field): Search for Users or Global Teams... with "mbarron" entered and "Add To" button.
- Users** (list): Barron, Matt(mbarron)
- Issue Description*** (text area): A large empty text area for the description.
- Plan: Action Expected** (text area): A smaller text area for the plan.
- Report: Actions Taken** (text area): A smaller text area for the report.

Red boxes and arrows highlight the Priority dropdown, the Assignee search field and list, and the Issue Description text area.

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 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

The screenshot displays the 'Assessment Related K-PACs' interface. At the top, there is a 'K-PACs List' with 'GPM_DB-1' selected. Below this is an 'Issue Task' section with a table containing one row. The table has columns for 'Task Description', 'Task Owner', 'Target Date', and 'Actual Date'. A red box highlights the '+' icon in the 'Issue Task' header. Another red box highlights the first row of the table. A third red box highlights the 'Task Owner' column, and a fourth red box highlights the 'Target Date' and 'Actual Date' columns. Below the table, there are sections for 'Part Name', 'Topic', 'Due Date', 'Issue Attachments', and 'Assessment Control Details'. The 'Assessment Control Details' section shows 'Assessment ID' as 'GPM_DB-CK1698', 'K-PAC ID' as 'GPM_DB-1 - Program Dashboard', and 'Exec Method Node' as 'Action Items(#25)'. At the bottom, there are buttons for 'Save & Close', 'Save & Modify', 'Save & Raise Another Issue', and 'Cancel'.

Add Comment and Send Notification

Click and type
in comment.

Modify Issue Status

Modify Issue Status

Open
 Closed

Comment:

Send Notification Email Include Comment in Discussion

Save & Close Cancel

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

The screenshot displays the software interface with the 'GANTT/CALENDAR' tab selected. A table lists tasks for 'PM Training' and 'Program Dashboard (GPM_DB-1)'. The 'Import Gantt tasks from Excel' dialog box is open, showing options to import from a folder or a file. A success message is visible at the bottom right.

Event Items	Date	Lead Assignee
PM Training	08-Dec-2017	
Program Dashboard (GPM_DB-1)	08-Dec-2017	
Gate_0_Checkpoint	08-Dec-2017	Aguilar, Milton(mia)
Gate_1_Checkpoint	11-Jul-2018	Aguilar, Milton(mia)
Gate_2_Checkpoint	13-Feb-2019	Aguilar, Milton(mia)
Gate_3_Checkpoint	07-Jun-2019	Aguilar, Milton(mia)
Gate_4_Checkpoint	31-Jul-2020	Aguilar, Milton(mia)
Gate_5_Checkpoint	05-Feb-2021	Aguilar, Milton(mia)
Gate_6_Checkpoint	17-Jun-2021	Aguilar, Milton(mia)

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.

Event Item Type

- Milestone (No Due Date)
- Category (Roll-up of Event Items)
- Task (Simple Due Date)
- Task Work Span (Start Date Plus Duration)

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

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

The screenshot shows the BorgWarner Smart Tiles Home Page. The interface includes a top navigation bar with the BorgWarner logo, a user profile dropdown for 'Barron, Matt(mnbarron)', and a home icon. The main content area features several smart tiles: 'Smart Tiles' (with a sub-menu for 'My Team Bords (Portfolio View)', 'PM Program Dashboard', 'PM Ford', and 'PM Ford'), 'Team Boards', 'Knowledge Packets (K-PACs)', 'Assessment Controls (AC)', 'Issues', 'My Activity', and 'Auros Help'. A 'Quick Links' panel is open on the right, listing various navigation options like 'Smart Tiles', 'CoP Chooser', 'My Stuff', 'Notifications', 'Team Boards', 'My Activity', 'Knowledge Map', 'My Issues', 'What's New', 'New User', 'Home', and 'Administration'. Red boxes and arrows highlight specific elements: the 'Team Boards' tile, the 'Issues' tile, the home icon in the top bar, and the 'Smart Tiles' link in the Quick Links panel.

1. Click on Teamboards to see all your projects

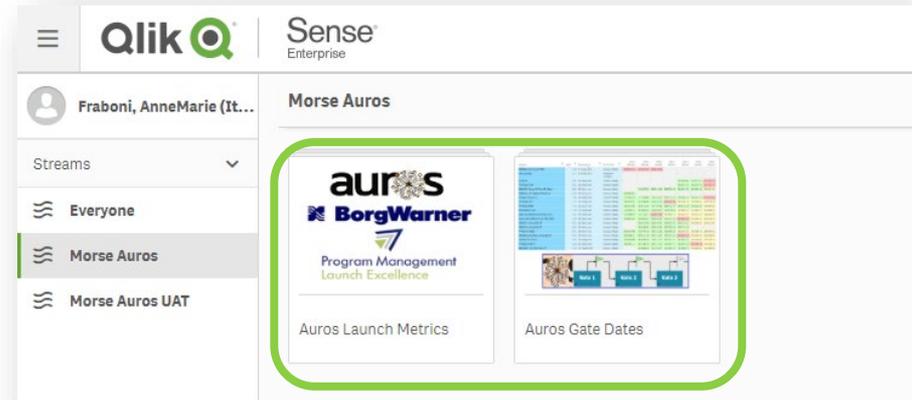
HOME button can be set to take you to a specific page

Allows you to see all your issues for your programs

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

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!



Combustion



Hybrid



Electric