

Launch Program Requirement 投产阶段项目要求

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CJLR Program STA

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Agenda

- 1) Introduction of Programme STA Team
- 2) Programme Overview
- 3) BOM Introduction
- 4) APQP
- 5) PSW

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CJLR Programme PUR

Program Enablement



Program Operation team



- APQP/PSW start soon after nomination is completed.
定点完成即开始APQP。
- work with STA/PPD/Suppliers to guarantee APQP/PSW of each milestone (TT, PP, MP1) is on track.
和STA/PPD/供应商合作，保证项目每个阶段国产化的顺利实施。

Focus – Programme PUR

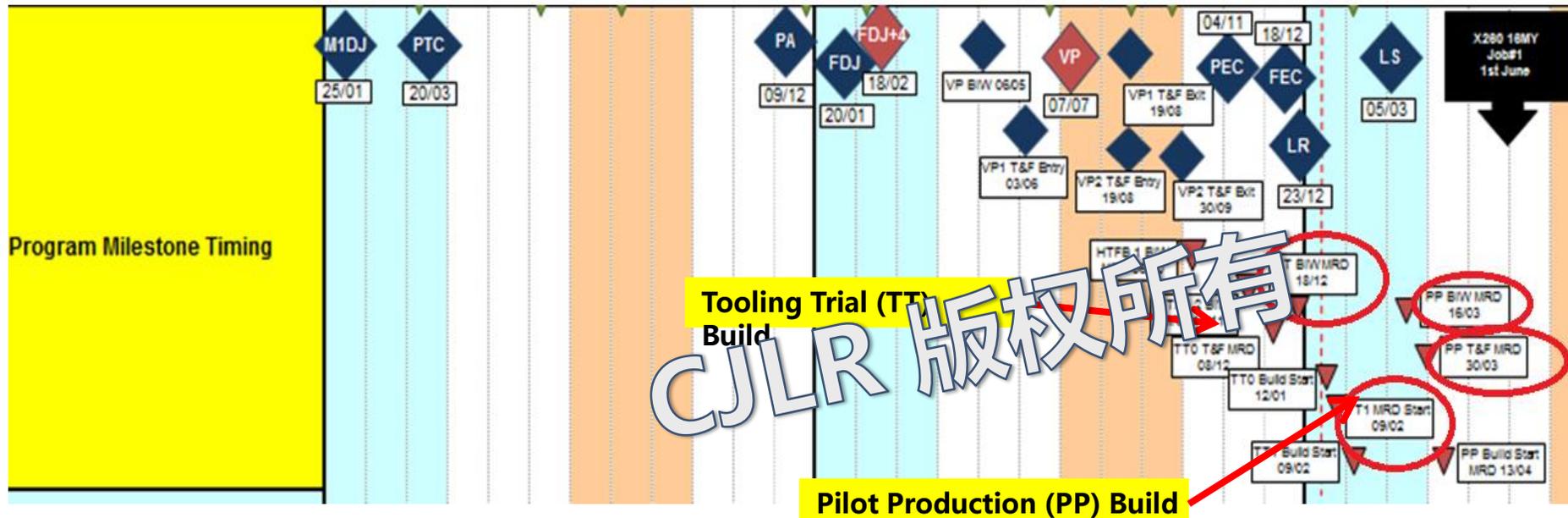


Programme Overview



— 奇瑞·捷豹路虎 —

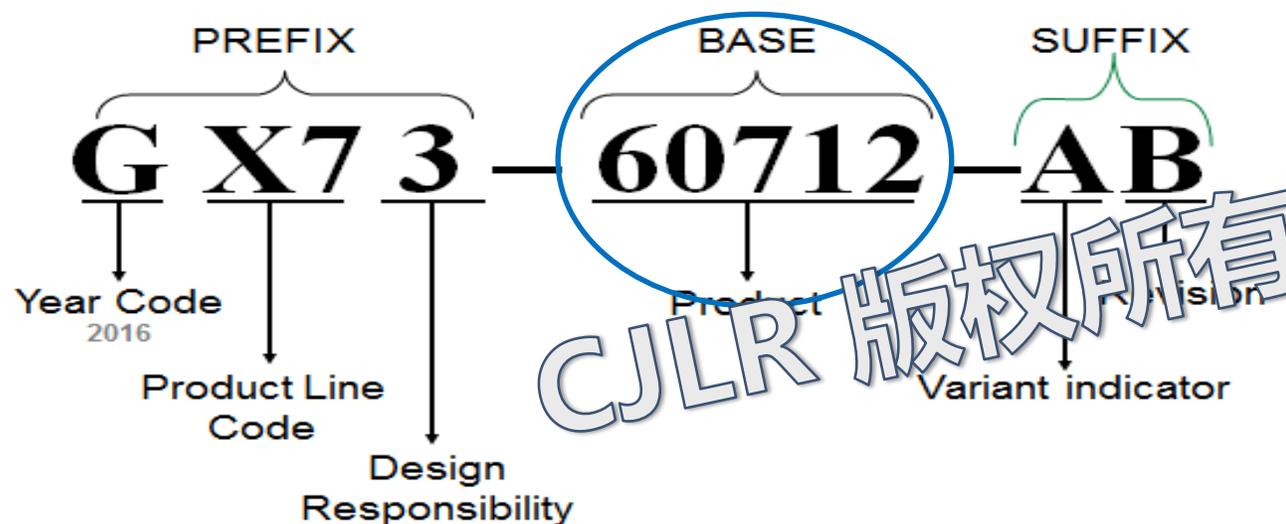
Programme
Overview



PTC/M1DJ	Programme Target Compatibility/M1 Data Judgement (need to request Long-lead Funding for LL VT)
PA/AA2	Program Approval/Appearance Approval 2
FDJ	Final Data Judgement
VP	1st Verification Prototype (No need to have all OTS)
PEC	Preliminary Engineering Completion
FEC	Final Engineering Completion
LR	Launch Readiness
LS	Launch Sgin off
J1	Job 1
FSR	Final Status Report

BOM Introduction

A production part number in WERS consists of the following elements



Flag:

Y: Tier 1 locally produced Part – 1级国产件（非贸易件）

DN: Tier 2 imported supplied part – 2级进口件

DY: Tier 2 locally supplied part – 2级国产件

PSW by Value Stream – 通过Value Stream跟踪PSW

Value Stream: set by base No. – 根据中缀定义Value Stream

APQP - Programme



The APQP process describes a disciplined set of activities performed throughout a programme to ensure that critical parts delivered by Chery Jaguar Land Rover's supplier partners achieve the desired quality and capacity levels at Job #1.

APQP流程描述在整个项目过程中所执行的一系列有规律的活动，以确保奇瑞捷豹路虎供应商合作伙伴交付的关键关键零部件，在Job#1整车量产时，能达到要求的质量水平和产能水平。

1. Managed by commodity level

– Commodity Definition: grouped by value streams, higher level of VS.

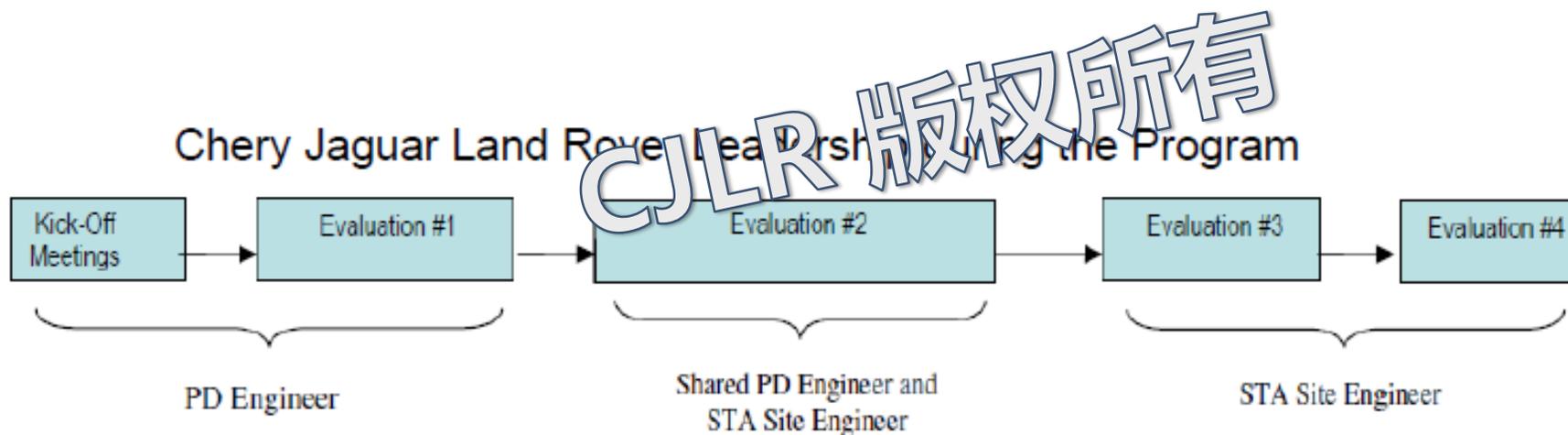
APQP 按照commodity级别进行跟踪，Commodity高于 Value Stream，是大类别下的Value Stream的汇总。

2. According to change content (design, tool information) of each commodity of the programme we define PPAP level and priority supplier.

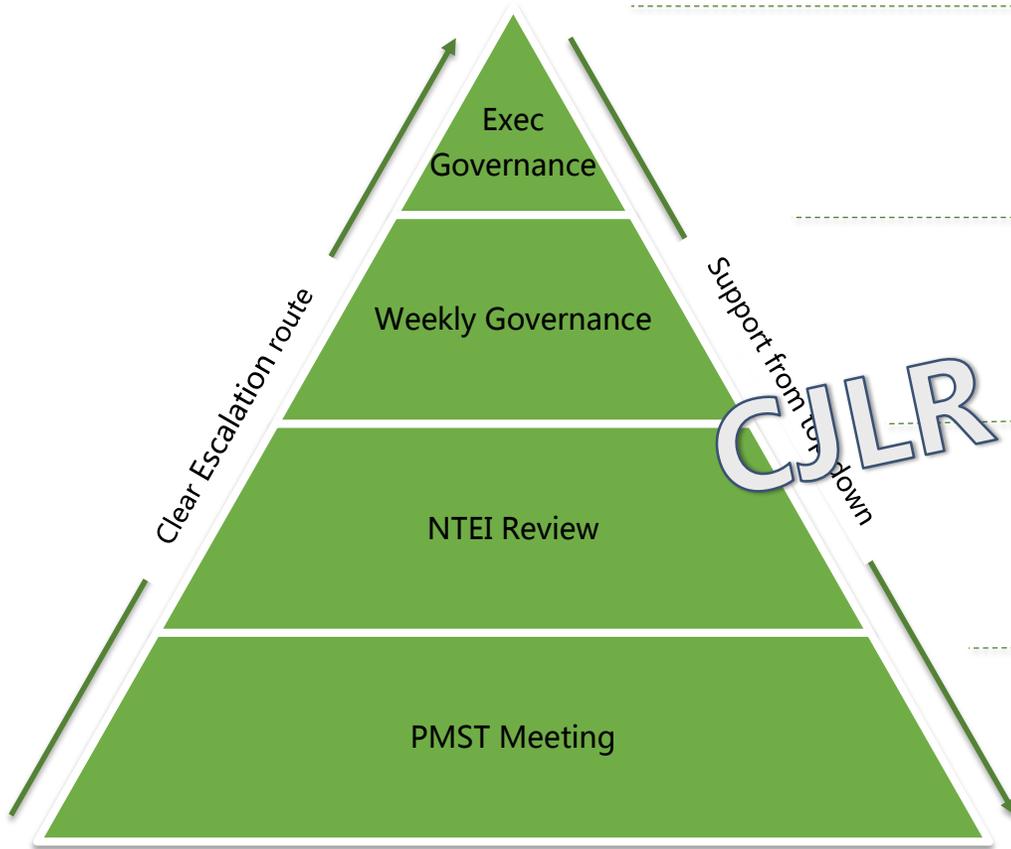
根据每个commodity的项目内容（设计、模具）等变更程度，定义PPAP级别和优先级供应商。

APQP-Priority Supplier

- 4 cross functional deep dive evaluations
 - PPAP5 required
- 如果被定为优先级供应商，说明：
- 需组织4次跨部门的供应商质量深度审核
 - PPAP级别必须是5级



APQP – Review Meeting and Escalation Forum



Who?	Why?
<ul style="list-style-type: none"> • Vehicle Line Director • Purchasing / STA Director / EVP • NMP Director / EVP • Chief Engineer / EVP 	<p>Last level of Escalation.</p> <p>To provide the highest level of support / focus on the issue to unlock difficult to fix items that the team are unable / unauthorized to resolve.</p>
<ul style="list-style-type: none"> • Vehicle Line Director • NMP Director / EVP • Purchasing Senior Manager • Purchasing Senior Manager 	<p>2nd Level of Escalation</p> <p>Senior managers now engaged due to issues proving difficult to resolve or systemic failings occurring requiring senior focus.</p>
<ul style="list-style-type: none"> • CoC Engineer / PL • STA Engineer • Purchasing / Buyer • Supplier 	<p>1st Level of Escalation.</p> <p>Wider cross functional support to resolve issues at supplier that may require purchasing help</p>
<ul style="list-style-type: none"> • CoC Engineer • STA Engineer • Purchasing / Buyer • Supplier 	<p>Engineering and STA to ensure supplier is on track for PSW and actions are being completed in line with commodity plan.</p>

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APQP- Deliverables



31 APQP Elements, 49 timed deliverables, 215 timed expectations.

Lead	Deliverable	DEL No.	Start	Finish	Deliverable Requirement
PUR	Sourcing Agreement	1	PTC	PTC	Supplier agreement letter has been issued and the supplier manufacturing site has been identified.
PUR	Commercial and Program Agreement (CPA)	2	UNV0	PA	All required Supplier Commercial and Program Agreements (CPA) have been signed. Note: UN and UP due 2 months before <PA>, PTO scale 1-4 due 1 month before <PTC>, PTO scale 5 and 6 due 2 months before <PA>.
PUR	Production Tooling order	3	UNV0	FDJ	All Production tooling orders have been issued to suppliers.
PUR	Volume and Mix agreed with Supplier (SCPA)	4	UNV0	PA	Final Mix (estimated Take Rate), Average Production Weekly (APW) and Maximum Production Weekly (MPW) have been communicated and agreed by the supplier via the SAC/PA document.
PD	Customer Input Requirements	5	UNV2	PTC	Supplier has received all necessary information identified in the expectations of the Customer Input Requirements element, to plan, design, manufacture and ship the product.
PD	Appearance Approval Report (AAR)	6	VP	TT MRD	Colour, gloss and texture / graining sign-off completed (AAR - Appearance Approval Report) per Design Quality.
PD	Colour Changes from Colour Harmony (AAR)	7	PEC	PP MRD	Supplier has completed all colour changes required from Colour Harmony event.
PD	DFMEA	8	UNV1	PTC	DFMEA is complete by Chery Jaguar Land Rover Product Development Engineer and the Supplier. Note: For inverted delta parts, CJLR PD Engineer sign off is required. UN is due at UNV2, UP is due at UPV2.
PD	Special Characteristics Agreement	9	UNV1	PTC	All Special Characteristics have been successfully documented and cascaded to affected sub-suppliers.
STA	Resolution of supplier manufacturing Quality issues	10	PA	PP MRD	All quality issues (including AIMS) have been closed via 8D (or DMAIC equivalent process) with all countermeasures introduced and proven to be effective.
PD	DV Testing	11	PA	PEC	All DV Testing is successfully completed.
STA	Sub-supplier workplans	12	UNV2	PTC	Tier 1 Supplier confirms and documents that sub-supplier PPAP timing plans can meet Phased PPAP timing.
STA	Sub-supplier PSW - Quality	13	PEC	TT MRD	Supplier confirms that all sub-Suppliers PPAP Phase 1 (or equivalent) are complete and meet Chery Jaguar Land Rover requirements.
STA	Sub-supplier PSW - Capacity	14	PP MRD	MP1 MRD	Supplier confirms that all sub-Suppliers PPAP Phase 3 (or equivalent) are completed and meet Chery Jaguar Land Rover requirements.
PD	Facilities and Tools Strategy	15	PTC	FDJ	Verify that facilities and tooling timing plan can meet Phased PPAP requirements.
STA	Facilities and Tools for Production Readiness	16	VP	TT MRD	All facilities/tools/gauges are operational at the final production start.
STA	Supplier Surrogate OEE confirmed	17	PTC	PA	Verify supplier's OEE plan is confirmed by Surrogate OEE support in support of Phased PPAP requirements.
PD	Gauge Strategy / Plan	18	FDJ	FDJ	Verify that the gauge plan includes requirements for PPAP requirements.
STA	Supplier's OEE supports Capacity	19	PTC	TT MRD	Verify Supplier's demonstrated OEE (PPAP Phase 3) supports capacity requirements.
PD	Prototype Build Control Plan	20	M-1DJ	VP	Verify that the Prototype Build Control Plan is complete and ready for implementation. Note: For inverted delta parts, CJLR PD Engineer sign off is required.
PUR	Prototype Build Tool Orders	21	UNV2	FDJ	Plan and complete tooling for prototype build.
PUR	VP Part Order	22	UNV2	FDJ	Plan and complete part orders for prototype build.
PD	Off-Tool parts VP	23	M-1DJ	VP	Parts for prototype build require PPAP requirements for VP MRD and supplied with PPIR documentation. (Note: Non Design Release is complete for PPAP requirements.)
PD	Drawing & Specifications	24	C	F	Design Release is complete for PPAP requirements for VP MRD and supplied with PPIR documentation. (Note: Non Design Release is complete for PPAP requirements.)
PD	P-Release	25	C	F	Some long-lead parts may be required to be released earlier (T-Release for PTO). Confirm with the CJLR PD Engineer that the release plan supports program requirements.
PD	Engineering Change Document	26	PP MRD	PP MRD	All Chery Jaguar Land Rover engineering changes have been recorded, approved and recognised on an authorised engineering change document.
PD	Team Feasibility Commitment / Customer Engineering Approval	27	UNV2	VP	The team confirms Design, Process and Timing feasibility in support of Phased PPAP.
STA	Manufacturing Process Flowchart / Process Flow Diagram	28	FDJ	PEC	Confirm that final Manufacturing Process Flowchart supports PPAP Phase 0 event.
STA	Process Failure Mode and Effects Analysis (PFMEA)	29	UNV2	VP	PFMEA is completed and has linkages to DFMEA and Control Plan. Note: For inverted delta parts, Chery Jaguar Land Rover PD Engineer sign off is required. Confirm that CJLR PD have documented and cascaded Special Characteristics.
STA	Measurement System Evaluation / Measurement System Analysis (MSA) Plan	30	PEC	TT MRD	Gauge R&R results <= 10% per PPAP Chery Jaguar Land Rover customer specifics.
STA	Qualified Laboratory Documentation	31	TT MRD	TT MRD	Supplier internal laboratory is compliant to JLRQ requirements and External Laboratory is compliant to ISO/IEC 17025 (or national equivalent).
STA	Checking Aids	32	TT MRD	TT MRD	Ensure that all checking aids are compliant with part engineering specifications. Note: Checking aids can include fixtures, variable and attribute gauges, models, templates, mylars specific to the product being submitted.
STA	Pre-Launch Control Plan	33	VP	PEC	Pre-Launch Control Plan is completed and has linkages to DFMEA and Prototype Control Plan. Note: For inverted delta parts, Chery Jaguar Land Rover Product Development sign off is required. Confirm that CJLR Product Development have documented and cascaded Special Characteristics.
STA	Operator Process Instructions	34	VP	PEC	Operator Process Instructions are completed to support PPAP Phase 0 event.
MP&L	Packaging Approval	35	PEC	TT MRD	Packaging approval process has been completed to support PPAP timing.
STA	PPAP Phase 0 (Run-at-Rate)	36	VP	TT MRD	PPAP Phase 0 (Run-at-Rate) is completed.
STA	Production Control Plan / Control Plan	37	PEC	TT MRD	Production Control Plan is completed and has linkages to DFMEA and Pre-Launch Control Plan. Note: For inverted delta parts, CJLR PD Engineering sign off is required. Confirm that CJLR PD Engineering have documented and cascaded Special Characteristics.
STA	Initial Process Capability Study - Capability	38	PEC	TT MRD	Initial process capability results (Ppk) have achieved results >= 1.67
STA/PD	Dimensional Results	39	PEC	TT MRD	100% of all required measurement points are within tolerance.
PD	Product Validation (PV) Testing	40	VP	TT MRD	PV Testing is successfully completed.
STA/PD	PPAP Phase 1	41	PEC	TT MRD	PPAP Phase 1 is complete.
PD	IMDS	42	PA	PEC	All parts must demonstrate compliance with Chery Jaguar Land Rover's Restrictive Substance Management Standard (RSMS) by submitting the required material information into the International Material Data System (IMDS). This requirement must be fulfilled by the programme <FDJ> gateway for initial reporting & updated to reflect all changes by the <PEC> gateway. Components containing polymeric or elastomeric materials must also be marked in accordance with PLMCJLR.00.0029, which must be reflected in the IMDS submission & completed by <PEC>.
STA	PPAP Phase 2	43	TT MRD	PP MRD	PPAP Phase 2 is complete.
STA	PPAP Phase 3	44	TT MRD	MP1	PPAP Phase 3 is complete.
STA	Supplier's OEE supports Capacity	45	TT MRD	MP1	Supplier's demonstrated OEE (PPAP Phase 3) supports capacity requirements.
STA	Bulk Materials Requirements	46	TT MRD	TT MRD	Bulk Materials checklist is included in the PPAP submission.
STA	Sample Product	47	TT MRD	TT MRD	The Sample Product produced during the PPAP Phase 0 contains all proper CJLR Identification.
STA/PD	Master Sample	48	TT MRD	TT MRD	The Master Sample produced during PPAP Phase 0 has received customer approval and the approval date was recorded on the sample.
STA	Record of Compliance	49	TT MRD	TT MRD	All Chery Jaguar Land Rover Customer-Specific requirements have been successfully documented and available for customer review.



CJLR APQP Deliverables



APQP- Programme Metric

L551 20MY MHEV - APQP Summary Report

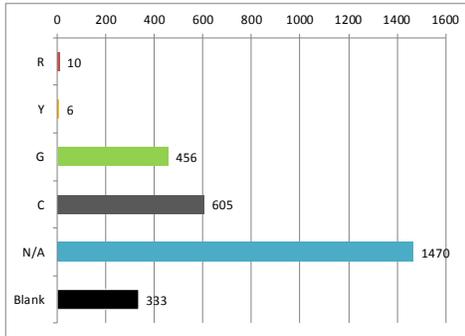
Next Milestone

PEC

Review date

2018/10/8

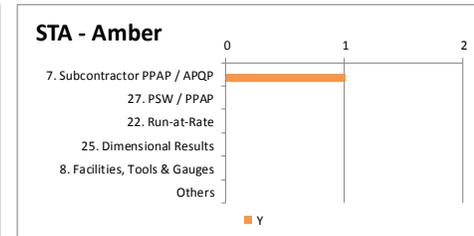
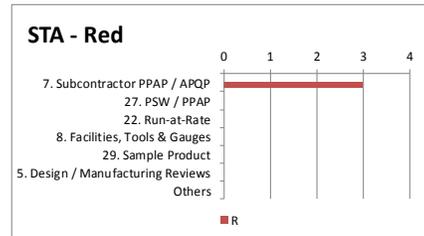
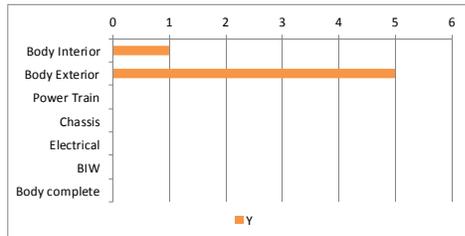
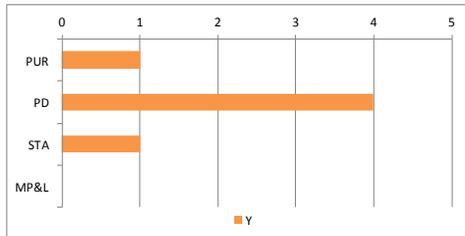
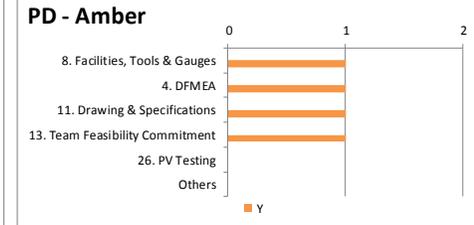
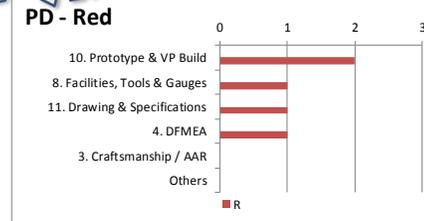
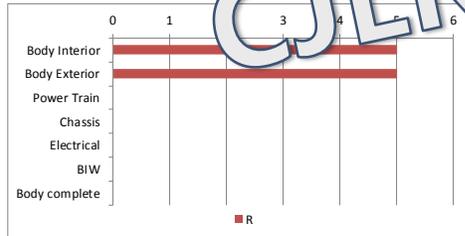
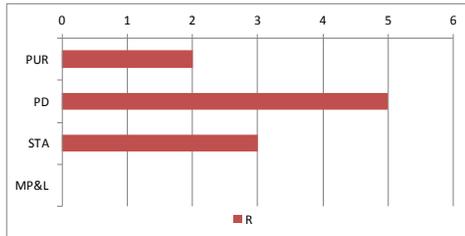
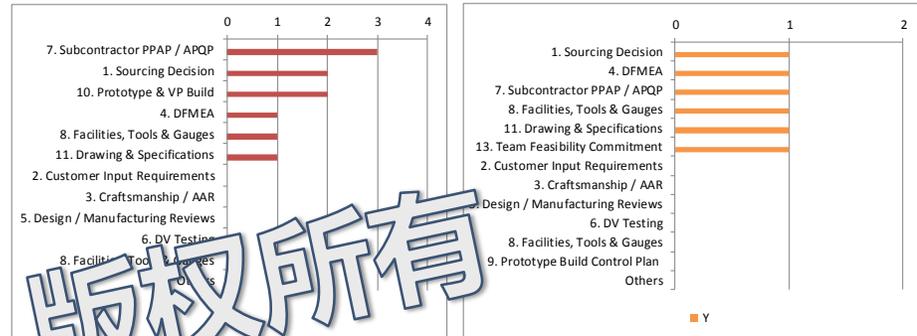
Total Program Status



Comments:

1. 195 APQP required, 97 available for PEC.
2. Main Risk

APQP Elements Status



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What is PSW?

- **Part Submission Warrant**

零件提交保证书

- A legal document. Every part on the car must have PSW or IPSW + Alert

合法文件。车上的每个零件必须具有PSW 或者 IPSW+Alert

- Final approval of Supplier PPAP (Production Part Approval Process)

供应商PPAP的最终批准。

- PSW has 18 elements, requiring management by the Supplier with support

from relating CJLR functions (PD, STA, PUR, MP&L).

PSW 有18个要素，要求供应商在CJLR相关功能块的支持下过程管理。

- APQP (Advanced Product Quality Planning) helps deliver PPAP

APQP将帮助PPAP的提交。

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PSW Stakeholders

Who is Responsible for PSW?



- **AIMS:** PPQ, Site STA
- **AAR:** Appearance Approval Requirement
- **WCPA:** World Class Premium Audit
- **Engineering Change :** PACN

You all have a part to play to ensure PSW is signed off, robustly, on time, to target!

STA MP&L PD All Purchasing Supplier Quality

PSW- Clear PSW Work plans to support Vehicle Build on Time

- CJLR use Phased PPAP:

- **Phase 0** = Run@Rate: A limited production run to provide an early indicator that the design of the process/tool/facility has the potential to produce at rate the required number of acceptable parts, as determined by the pre-launch control plan

按照试生产控制计划的要求在有限时间内运行生产线，用来验证过程、模具、设备是否有能力，按照客户要求的节拍生产一定数量的可接受的产品。

- **Phase 1** = Quality Verification: Validation of product quality and production capability from a minimum of one production stream I.e. Line 1. All design verification requirements achieved.

确认供应商是否理解所有的设计记录和规范要求，确认至少从一条生产线上节拍生产出来的产品满足以上要求。

- **Phase 3** = Capacity Verification: Demonstration of volume and quality capability in a sustainable production environment for all production streams I.e. Lines 1, 2 & 3. Supplier proves they can achieve customer daily volume.

产能验证：在所有的生产线上，**稳定的**生产环境中验证制造产能和质量，确保供应商可以按质按量满足客户每日产量需求。

• Phase 0 PV Test / AAR / AIMS / WCPA Phase 1 Phase 3



PSW- Clear PSW Work plans to support Vehicle Build on Time

Tooling Trial (TT) MRD

- 80% Phase 1(Sequence Part: Seat, Bumper, Headliner, Door Casing, Cockpit not required)-fully off production tools, fully off production process, Phase 0 run at rate completed, AAR approved with all PV Testing completed and documented.
- TT MRD 节点80%的零件完成Phase1 (排序件多数晚于TT：座椅、保险杠、顶棚、门板、驾舱系统等) -Phase 1 代表产品出自最终的工装模具、最终的生产线；并完成Phase 0，AAR，以及DV/PV实验。

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Tooling Trial (TT) MRD

- All non PSW parts must be off production tools at home location and production process with completed run at rate. The additional requirement is that all non PPAP parts must be covered by an Alert raised and approved by PD and an IPSW.
- 对于无法在TT MRD 前签署Phase 1 的零件，生产交样的零件必须在实际生产产地生产，并完成Phase 0 签署。同时**必须**签署IPSW，PD提出alert，alert中阐明无法签署Phase 1 的原因，解决方案、时间和责任人。

PSW- Clear PSW Work plans to support Vehicle Build on Time

Pilot Production (PP) MRD

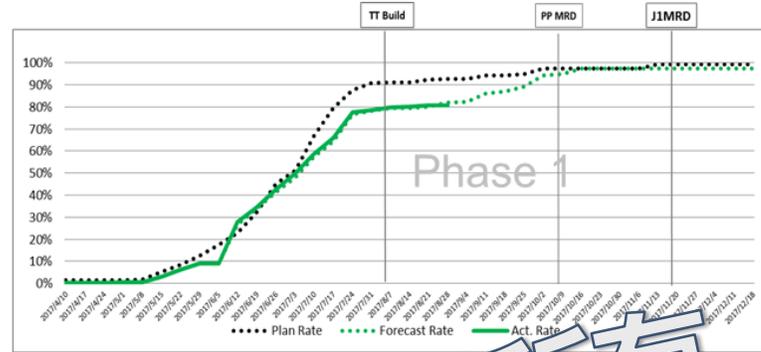
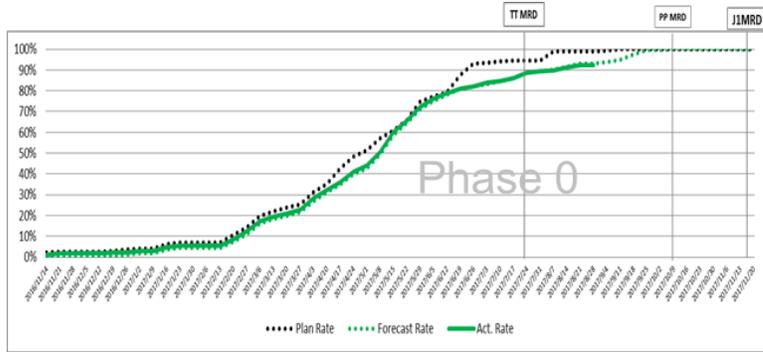
- 90% Phase 3 PPAP for all non sequence parts.
非排序件的零件90%完成Phase 3。
- Minimum of Phase 1 PPAP at PP with Mass Production Trial (MPT) for all sequenced parts prior to MP1.
未完成Phase 3的排序件需要在MP1 之前完成批量试生产 (MPT)。

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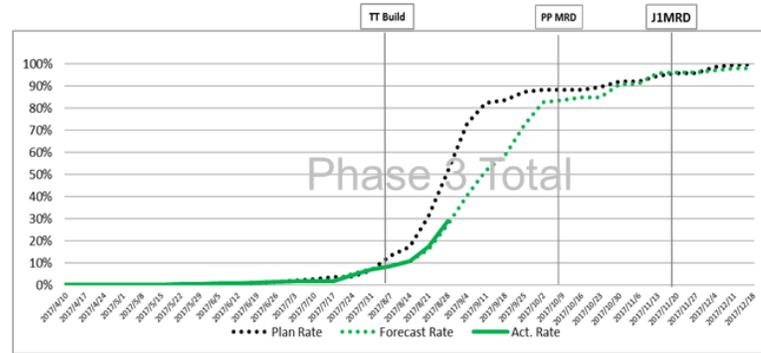
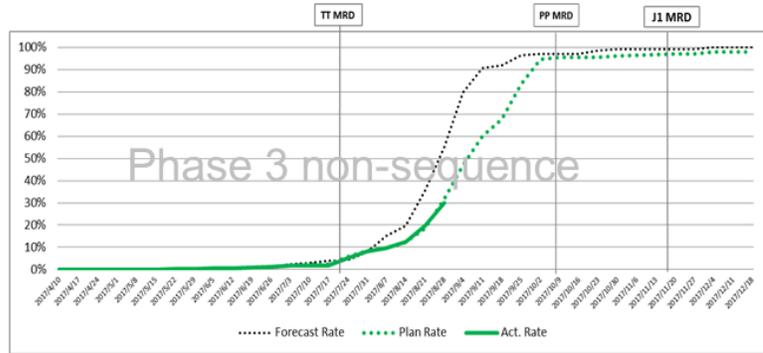
Mass Production (MP1) Build

- 95% of all Phase 1 & 3 PPAP at MP1 Build.
MP1 90%的零件完成Phase 1 & 3。

Programme PSW Metric



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PSW

Correct PSW Submission Pack

 Phase 0	 IPSW	 Phase 1	 Phase 3
<ol style="list-style-type: none"> 1. Approved Phase 0 CAR 	<ol style="list-style-type: none"> 1. IPSW warrant 2. Copy of approved Alert. The Alert must detail exception to PPAP etc. what is preventing PSW 3. Phase 0 CAR 4. PPAP checklist 	<ol style="list-style-type: none"> 1. Phase 1 PSW warrant 2. Phase 0 CAR 3. PPAP checklist <p>* If Phase 2 is applicable the above is required for additional production streams.</p>	<ol style="list-style-type: none"> 1. Phase 3 PSW warrant <p>EXCEL & PDF</p>

We need to ensure the above is submitted to us!

On time!

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THANKS

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