

Launch Program Requirement 投产阶段项目要求

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CJLR Program STA

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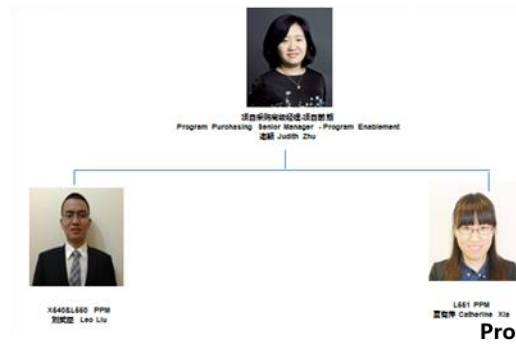
Agenda

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

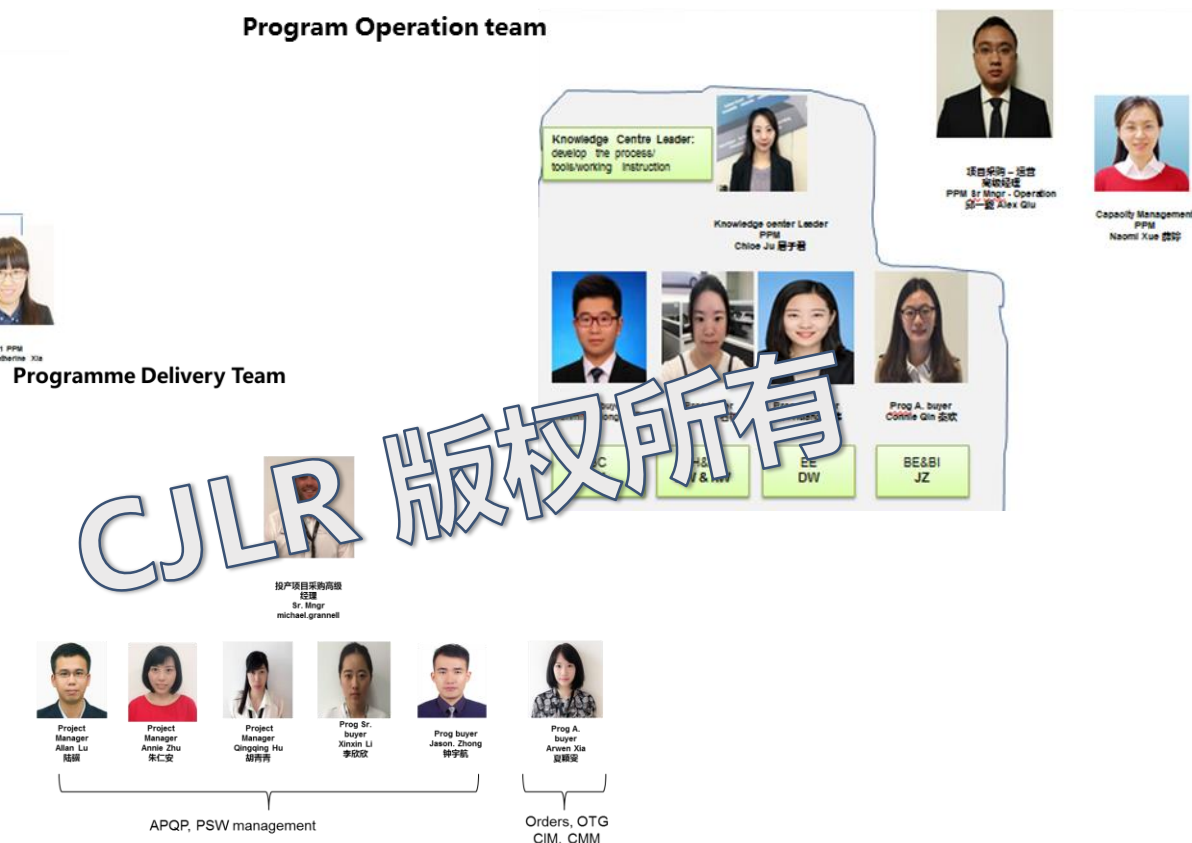
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CJLR Programme PUR

Program Enablement



Program Operation team



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

Focus – Programme PUR

APQP

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Focus

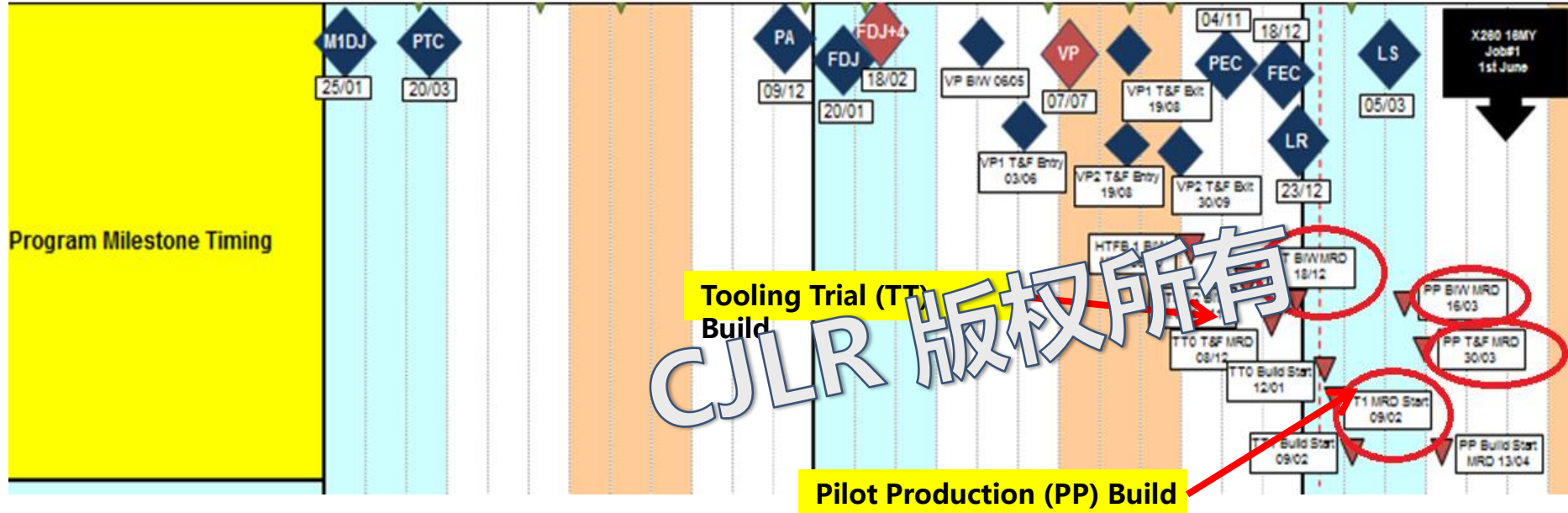
PSW

Milestone



Programme Overview

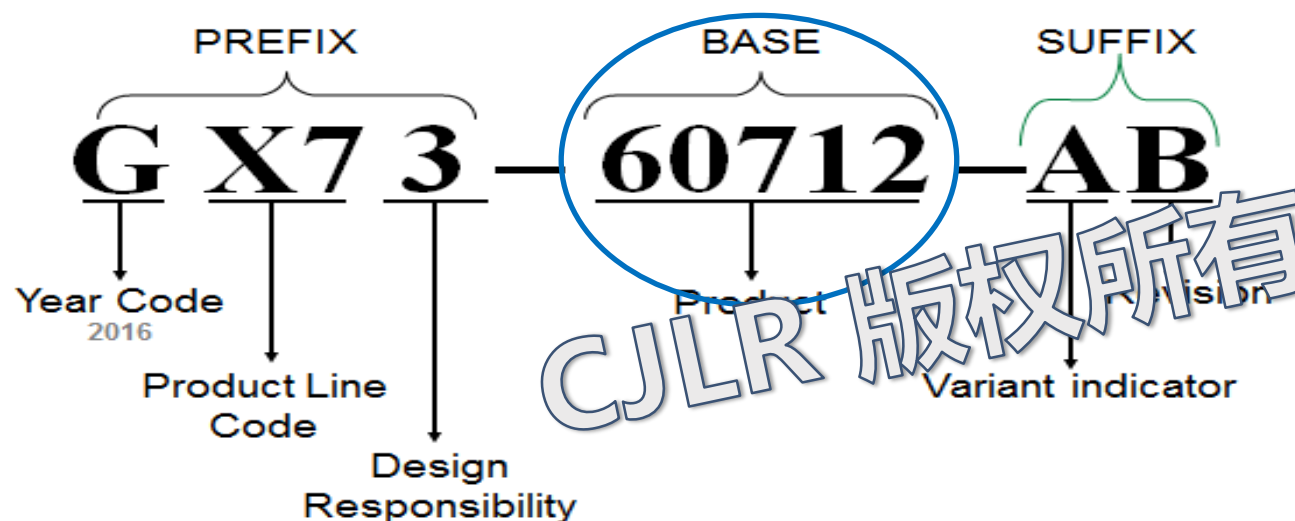
Programme
Overview



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.

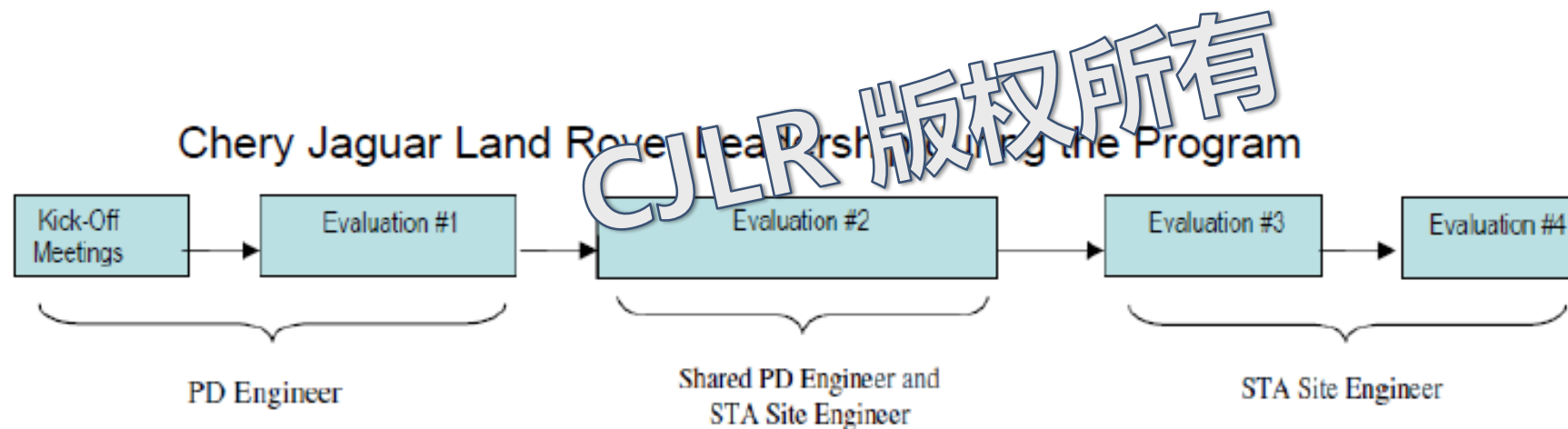
APQP 按照commodity级别进行跟踪，Commodity高于 Value Stream，是大类别下的Value Stream的汇总。

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

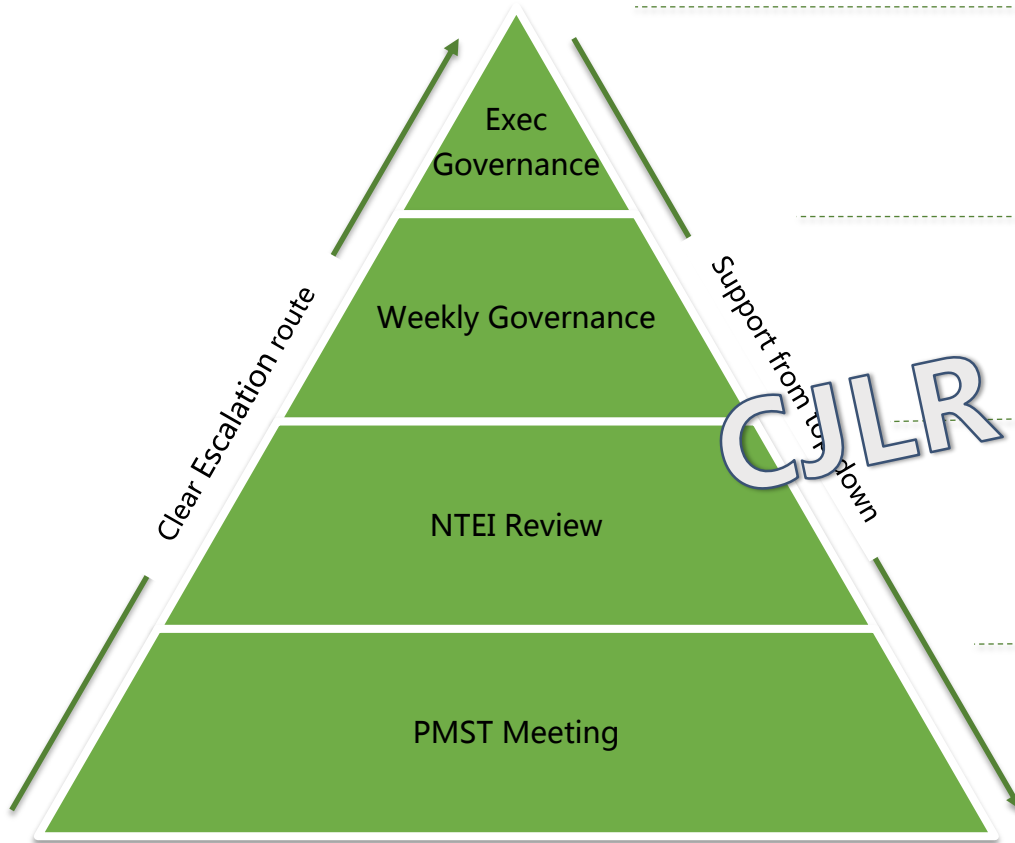
根据每个commodity的项目内容（设计、模具）等变更程度，定义PPAP级别和优先级供应商。

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 • 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>

APQP- Deliverables



—奇瑞·捷豹路虎—

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

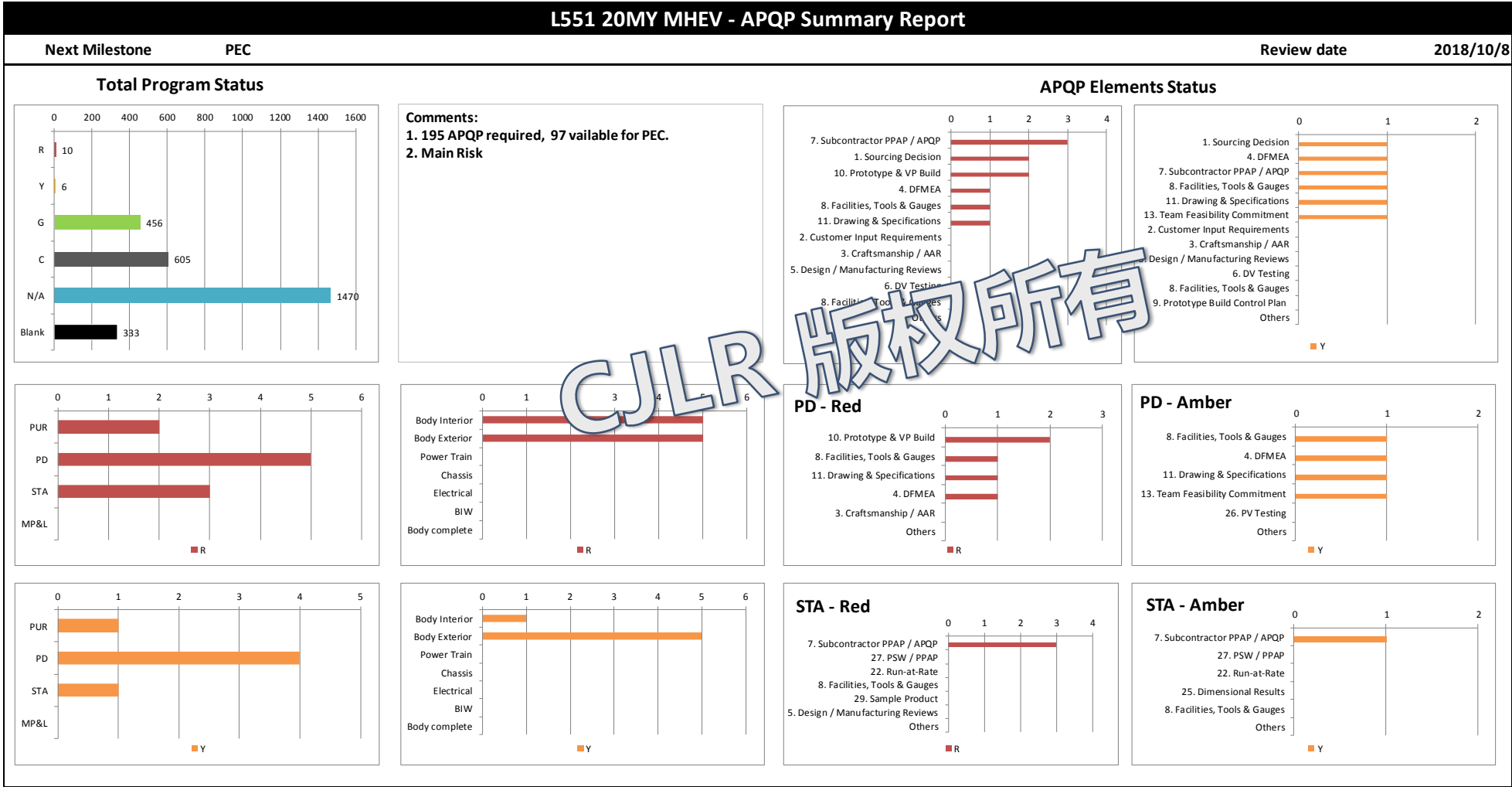
Lead	Deliverable	DEL No.	Start	Finish	Deliverable Requirement
PUR	Sourcing Agreement	1	PTC	PTC	Supplier agreement letter has been issued and the supplier manufacturing site has been identified.
PUR	Commercial and Program Agreement (CPA)	2	UNV0	PA	All required Supplier Commercial and Program Agreements (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 Mx (estimated Take Rate), Average Production Weekly (APW) and Maximum Production Weekly (MPW) have been communicated and agreed by the supplier via the SA/CPA 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.
PD	Special Characteristics Agreement	9	UNV1	PTC	Note: For inverted delta parts, CJLR PD Engineer sign off is required. UN is due at UNV2, UP is due at UPV2.
STA	Resolution of supplier manufacturing Quality issues	10	PA	PP MRD	All Special Characteristics have been successfully documented and cascaded to affected sub-suppliers.
PD	DV Testing	11	PA	PEC	All quality issues (including AIMS) have been closed via 8D (or DMAIC equivalent process) with all countermeasures introduced and proven to be effective.
STA	Sub-supplier workplans	12	UNV2	PTC	All DV Testing is successfully completed.
STA	Sub-supplier PSW - Quality	13	PEC	TT MRD	Tier 1 Supplier confirms and documents that sub-supplier PPAP timing plans can meet Phased PPAP timing.
STA	Sub-supplier PSW - Capacity	14	PP MRD	MP1 MRD	Supplier confirms that all sub-Suppliers PPAP Phase 1 (or equivalent) are complete and meet Chery Jaguar Land Rover requirements.
PD	Facilities and Tools Strategy	15	PTC	FDJ	Supplier confirms that all sub-Suppliers PPAP Phase 3 (or equivalent) are completed and meet Chery Jaguar Land Rover requirements.
STA	Facilities and Tools for Production Readiness	16	VP	TT MRD	Verify that facilities and tooling timing plan can meet Phased PPAP requirements.
STA	Supplier Surrogate OEE confirmed	17	PTC	PA	All facilities/tools/gauges are operational at the final production stage.
PD	Gauge Strategy / Plan	18	FDJ	FDJ	Verify supplier's OEE plan is confirmed by Surrogate.
STA	Supplier's OEE supports Capacity	19	PTC	TT MRD	Verify that the gauge plan includes requirements to support PPAP requirements.
PD	Prototype Build Control Plan	20	M-1DJ	VP	Verify Supplier's demonstrated OEE (PPAP Phase 0) supports capacity requirements.
PUR	Prototype Build Tool Orders	21	UNV2	FDJ	Note: For inverted delta parts, CJLR PD Engineer sign off is required. UN is due at UNV2, UP is due at UPV2.
PUR	VP Part Order	22	UNV2	FDJ	Plan to complete tooling and parts for prototype build.
PD	Off-Tool parts VP	23	M-1DJ	VP	Plan to complete tooling and parts for prototype build.
PD	Drawing & Specifications	24	VP	PP MRD	Parts for prototype build are confirmed by supplier and supplied with PPIR documentation. (Note: Non available for supply.)
PD	P-Release	25	C	FDJ	Design is complete and available for supply.
PD	Engineering Change Document	26	PP MRD	PP MRD	Plan to complete tooling and parts for prototype build.
PD	Team Feasibility Commitment / Customer Engineering Approval	27	UNV2	VP	Plan to complete tooling and parts for prototype build.
STA	Manufacturing Process Flowchart / Process Flow Diagram	28	FDJ	PEC	Plan to complete tooling and parts for prototype build.
STA	Process Failure Mode and Effects Analysis (PFMEA)	29	UNV2	VP	Plan to complete tooling and parts for prototype build.
STA	Measurement System Evaluation / Measurement System Analysis (MSA) Plan	30	PEC	TT MRD	Plan to complete tooling and parts for prototype build.
STA	Qualified Laboratory Documentation	31	TT MRD	TT MRD	Plan to complete tooling and parts for prototype build.
STA	Checking Aids	32	TT MRD	TT MRD	Plan to complete tooling and parts for prototype build.
STA	Pre-Launch Control Plan	33	VP	PEC	Plan to complete tooling and parts for prototype build.
STA	Operator Process Instructions	34	VP	PEC	Plan to complete tooling and parts for prototype build.
MP&L	Packaging Approval	35	PEC	TT MRD	Plan to complete tooling and parts for prototype build.
STA	PPAP Phase 0 (Run-at-Rate)	36	VP	TT MRD	Plan to complete tooling and parts for prototype build.
STA	Production Control Plan / Control Plan	37	PEC	TT MRD	Plan to complete tooling and parts for prototype build.
STA	Initial Process Capability Study - Capability	38	PEC	TT MRD	Plan to complete tooling and parts for prototype build.
STA/PD	Dimensional Results	39	PEC	TT MRD	Plan to complete tooling and parts for prototype build.
PD	Product Validation (PV) Testing	40	VP	TT MRD	Plan to complete tooling and parts for prototype build.
STA/PD	PPAP Phase 1	41	PEC	TT MRD	Plan to complete tooling and parts for prototype build.
PD	IMDS	42	PA	PEC	Plan to complete tooling and parts for prototype build.
STA	PPAP Phase 2	43	TT MRD	PP MRD	Plan to complete tooling and parts for prototype build.
STA	PPAP Phase 3	44	TT MRD	MP1	Plan to complete tooling and parts for prototype build.
STA	Supplier's OEE supports Capacity	45	TT MRD	MP1	Plan to complete tooling and parts for prototype build.
STA	Bulk Materials Requirements	46	TT MRD	TT MRD	Plan to complete tooling and parts for prototype build.
STA	Sample Product	47	TT MRD	TT MRD	Plan to complete tooling and parts for prototype build.
STA/PD	Master Sample	48	TT MRD	TT MRD	Plan to complete tooling and parts for prototype build.
STA	Record of Compliance	49	TT MRD	TT MRD	Plan to complete tooling and parts for prototype build.



CJLR APQP Deliverables

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APQP- Programme Metric



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。

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 the process 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。



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

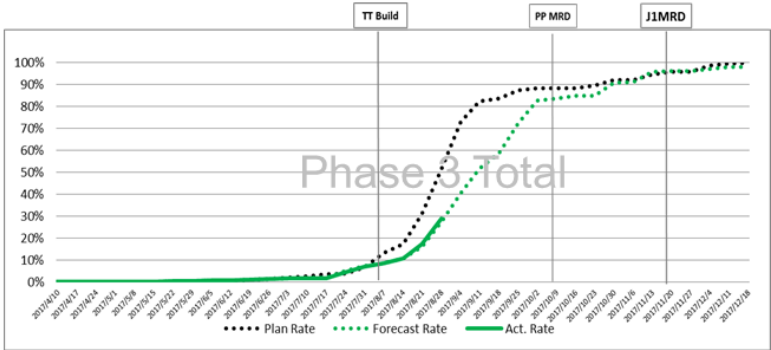
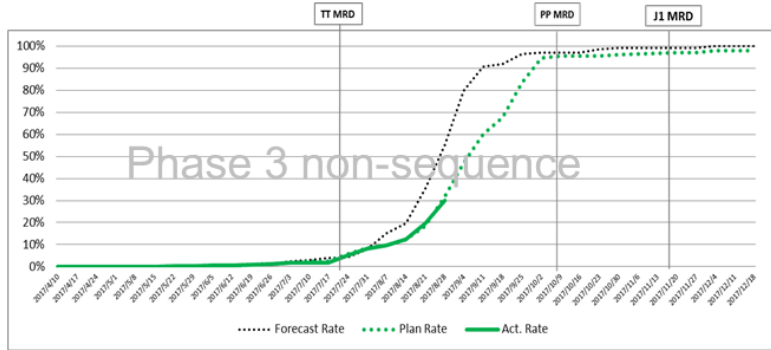
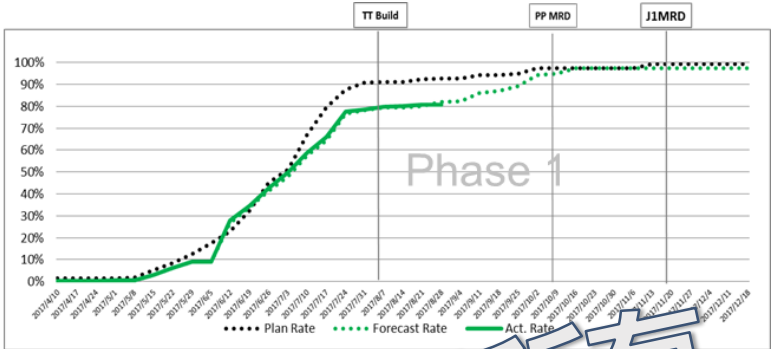
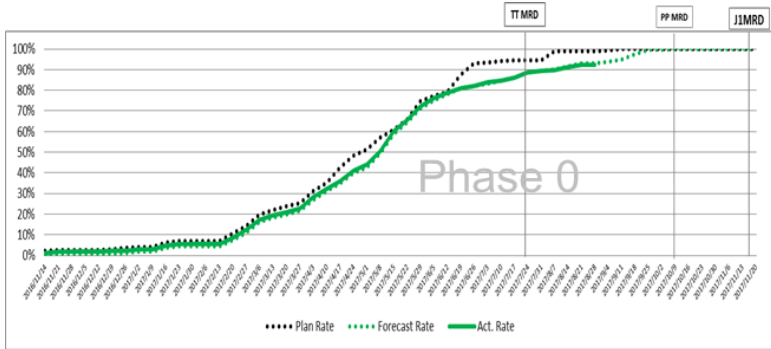
- 90% Phase 3 PPAP for all non sequence parts.
非排序件的零件90%完成Phase 3。
- Minimum of Phase 1 PPAP at PP with Mass Production Trial (MPT) for all sequenced parts prior to MP1.
未完成Phase 3的排序件需要在MP1 之前完成批量试生产 (MPT)。

Mass Production (MP1) Build

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

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Programme PSW Metric



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PSW Cover Page Requirement

PSW Cover Page should be submitted in correct format.



PSW Cover
Accuracy

PSW Completion Errors

Drawn part name on PSW matches that on Drawing

Drawn Phase 1, Phase 5 or Inform PSW is selected

Drawn release number on PSW matches that on Drawing / support plan. This is normally a 6 digit number - it is not the part suffix

Drawn Purchase Order number is included

Drawn weight is to 4 decimal places

IMDS module ID number, version and Transmission date to be present on PSW

Priority suppliers must submit level 5 PPAP

Declaration details are required

Description summary wording to outline contents of Alert - wording of Alert to summarize deviations from PPAP checklist

STA must include a status i.e. Approve, Accept or Reject

Handwritten signature is required (not scanned) / email address must be present / Print name and date

PD signature should be on the PSW PRIOR to STA signing

Check Alert number matches Alert in Alert in date? - are all closure dates tracked by supplier?

Handwritten signature is required (not scanned) / email address to be present. Must be dated

Handwritten signature is required (not scanned) / email address must be present / Print name and date

PD signature should be on the PSW PRIOR to STA signing

PSW

Correct PSW Submission Pack

ACVB	TT	TT	PP
Phase 0	IPSW	Phase 1	Phase 3
1. Approved Phase 0 CAR	1. IPSW warrant 2. Copy of approved Alert. The Alert must detail exception to PPAP req. what is preventing PSW 3. Phase 0 CAR 4. PPAP checklist	1. Phase 1 PSW warrant 2. Phase 0 CAR 3. PPAP checklist * If Phase 2 is applicable the above is required for additional production streams.	1. Phase 3 PSW warrant 2. Phase 0 CAR 3. PPAP checklist EXCEL & PDF

We need to ensure the above is submitted to us!

On time!

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THANKS

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