SQPS-931

Veoneer Supplier Manual (VSM) - Product Life Cycle

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15-FEB-2022

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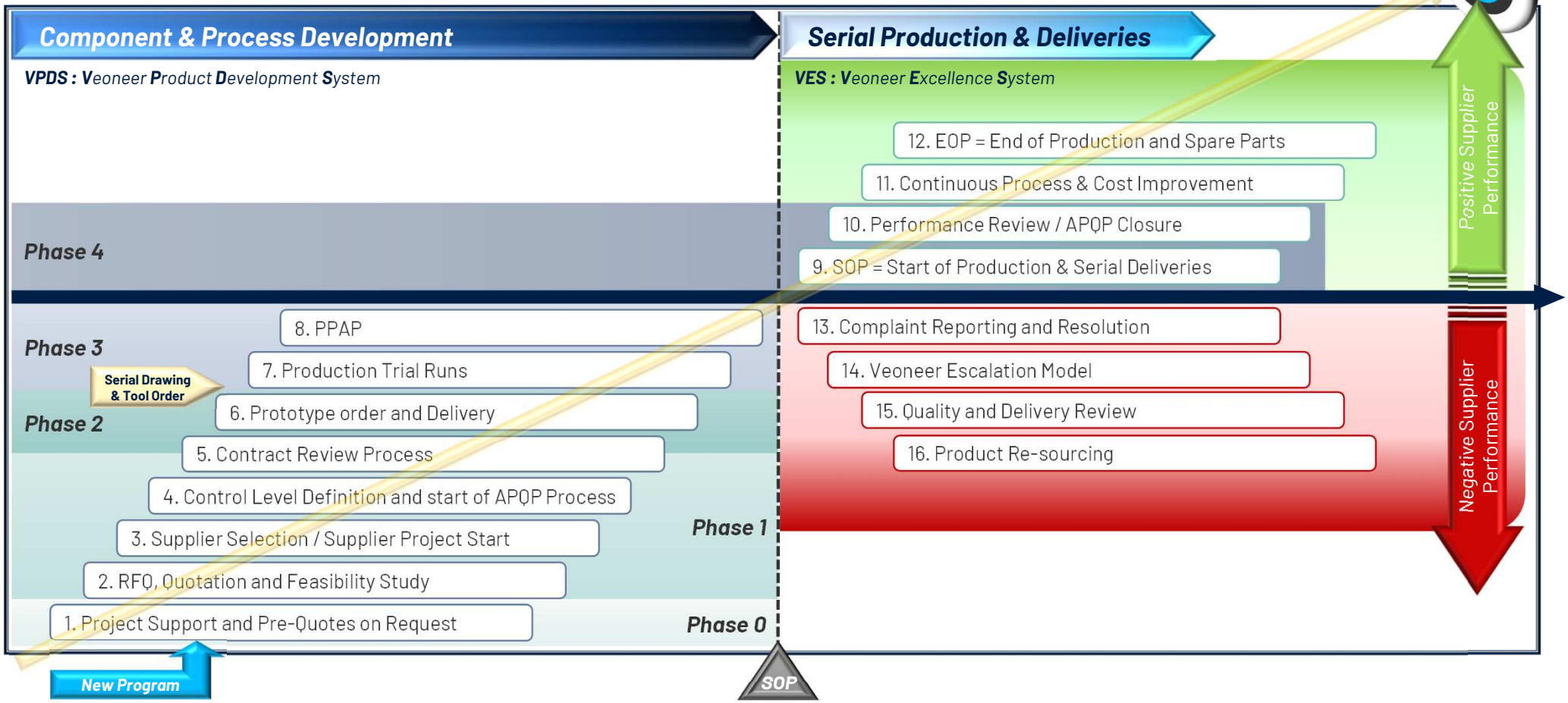
veoneer

Product Life Cycle

- *Zero Defect*
- *100% On Time Parts*
- *Best Price*
- *More Business*



The Product Life Cycle with Veoneer

1. Project Support and Pre-quotes on Request – Phase 0 (focus points)

- On Veoneer request the supplier provides:
- Project and Product Review
- Feasibility Study
- Design and Process Consultation and Expertise
- Pre-Quotes – (Part price, tooling, equipment) on concepts and ideas

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2. RFQ, Quotation and Feasibility Study – Phase 1 (focus points)

(RFQ & Feasibility Study Training Material available in the VSM !)

Input: RFQ (Request for Quotation)

Output: Quotation (on RFQ-template) :

- Part and tooling price, lead times etc.
- Cost Analysis
- Feasibility Study
- Packaging and Transport concept

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3. Supplier Selection / Supplier Project Start – Phase 1 (focus points)

Before supplier selection:

- Supplier shall accept VSM
- Not be rated RED on Commodity Flag Panel
- Not have continuously unacceptable VS051 ratings
- No Major Open issues from VS002 Audits
- Completed Feasibility Study
- Major Feasibility concerns and Design change requests must be agreed to by Veoneer before selection

After supplier selection:

Veoneer expects the supplier to start an official project supporting the Veoneer milestones by providing the needed resources, services, capital, equipment etc. to meet the Veoneer requirements.

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4. Control Level Definition & Start of SQP Process – Phase 1 (focus points)

- Establish SQP process & Project plan based on the Synchronized time-line
- Problem & Risk Analysis
- Mandatory reporting in writing of problems relative to Timing /Quality with analysis and recovery plan
- Initiate and maintain updates of SQP template
- Report SQP progress according to defined frequency

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4. Control Level Definition & Start of SQP Process – Phase 1

4.1 The CLD-Standard (Veoneer internal standard)

Minimum requirements related to defined CLD					
No.	Requirements	Comment(s)	CLD 1	CLD 2	CLD 3
1	**SQP**	**Reference: VSM-S-APSP-template**	YES	YES	YES
1.1	**-SQP-submission**	**According to defined submission frequency.**	YES	YES	YES
	-SQP reviews	**Veoneer/Supplier meetings/tel. conf.**	NO	YES	N/A
1.2	**-SQP review at supplier**	**Review meetings at supplier site.**	NO	NO	YES
1.3	**-SQP-element: VS002-Audit**	**Project specific VS002-Process Audit.**	NO	NO	NO
2	**Contract Review**	**Mandatory use of Contract Review-template. Reference: VSM-Contract Review-template.**	NO	YES	YES
3	**Production-Trial-Runs**	**Reference: VSM-Production-Trial-Run Standard**	YES	YES	YES
3.1	**-Documentation Submission**	**Trial-Run-Documentation on defined templates. Reference: VSM-Production-Trial-Run Standard.**	NO	YES	YES
3.2	**-Veoneer Participation**	**Participation at Production-Trial-Runs at supplier site.**	NO	NO	YES

VSM = Veoneer Supplier Manual | YES = Required | NO = Not Required | N/A = Not Applicable

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4. Control Level Definition & Start of SQP Process – Phase 1 ***(focus points)***

4.2 SQP = PPAP + Supplier Advanced Product Quality Planning

(SQP-Training Material available in the VSM !)

SQP is a structured method of:

- Defining and establishing the steps and requirements necessary to ensure that the product and process both satisfy the requirements of Veoneer
- This also ensures that all steps of supplier product launch can be completed on time.
- This also defines a Quality Road Map for successful launch.

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4. Control Level Definition & Start of SQP Process – Phase 1 ***(focus points)***

4.2 The Component Deliveable List

Item #	PPAP /APQP	Deliverable Name	CDP #	CDP Phase	TG Phase	CDP Project Folder	CDP Responsible	SQP Responsible	SQP reponsible name	Template Mandatory	Template	KCD			Applicable (Y/N)	SREA Use Only Updated document required Mark with 'X'	Status - include date for each update (2013-12-25: xxx)	Due Date
												0	1	2				
1	APQP	Project Team	8	0	0	Team Roster	Program Manager	Product Engineering Leader (PEL)	Name 2		TEMPLATE - Component Team Roster.xls		x	x				
2	PPAP	Veoneer CRS (Component Requirements Specification)	19	1,2	0,1	Component Requirements Specification (CRS)	Program Manager	Product Engineering Leader (PEL)	Name 2	X	Latest in Sharepoint		x	x				
3	PPAP	Component datasheet	13	1,2	0,1	Datasheet	Technical Lead	Design Engineer	Name 3			x	x	x				
4	PPAP	Component Package Drawing					Technical Lead	Design Engineer	Name 3				x	x				
5	PPAP	Lot Traceability Plan					SQE	Supplier Quality	Name 5				x	x				
6	PPAP	Material Handling and Packaging Instructions					SQE	Supplier Quality	Name 5			x	x	x				
7	APQP	Supplier Timing Plan	7	0	0	Workplan	Program Manager	Product Engineering Leader (PEL)	Name 2				x	x				
8	PPAP	Feasibility Study and Action Plan completed	20	1,2	0,1	Team Feasibility Commitment	Buyer	Buyer	Name 1	X	Latest in VSM		x	x				
9	APQP	Substance review					SQE	Supplier Quality	Name 5			x	x	x				
10	APQP	Contract Review					Buyer	Buyer	Name 1	X	Latest in VSM	x	x	x				
11	PPAP	Process flowchart					SQE	Supplier Quality	Name 5				x	x				
12	PPAP	Production Test Flow					SQE	Supplier Quality	Name 5				x	x				
13	APQP	Parameter based FMEA	16	1,2	0	SC/CC List / Parameter-based FMEA	Technical Lead	Design Engineer	Name 3		TEMPLATE - Component Parameter-Based FMEA.xls			x				
14	PPAP	Pin FMEA and defined rules	12	1	0	Pin FMEA	Technical Lead	Design Engineer	Name 3		TEMPLATE - Component Pin FMEA.xls		x	x				
15	PPAP	Design FMEA	21	2	1	Block DFMEA	Technical Lead	Design Engineer	Name 3		TEMPLATE - Component Block FMEA.xls		x	x				
16	PPAP	Process FMEA					SQE	Supplier Quality	Name 5				x	x				
17	APQP	Qual Plan	11	0,1	0	Qual plan	Component Engineer	Component Engineer	Name 4	X	Latest in Sharepoint		x	x				
18	PPAP	Qualified Laboratory Documentation					SQE	Supplier Quality	Name 5				x	x				
19	PPAP	Special Characteristics					SQE	Supplier Quality	Name 5			x	x	x				
20	APQP	VS2 Process Audit					SQE	Supplier Quality	Name 5				x	x				
21	APQP	First-Production-Trial-Run and Corrective Actions					SQE	Supplier Quality	Name 5				x	x				
22	PPAP	Reliability / Quality prediction					SQE	Supplier Quality	Name 5				x	x				
23	APQP	PPAP Production Trial Run					SQE	Supplier Quality	Name 5				x	x				
24	PPAP	Control Plan					SQE	Supplier Quality	Name 5				x	x				

Component Deliverable list (Example)

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*Contract Review Process – **Phase 1 and 2** **(focus points)***

(Contract Review-Training Material available in the VSM !)

- The contract review is used as a tool for both Veoneer and the Supplier to ensure that the process and the design have been reviewed and established
- The contract review clearly communicates Veoneer's project milestones, (ie: PPAP, Run@Rate, etc) establishing an agreement between both Veoneer and the chosen Supplier.
- Contract review is also used to finalize commercial negotiation.

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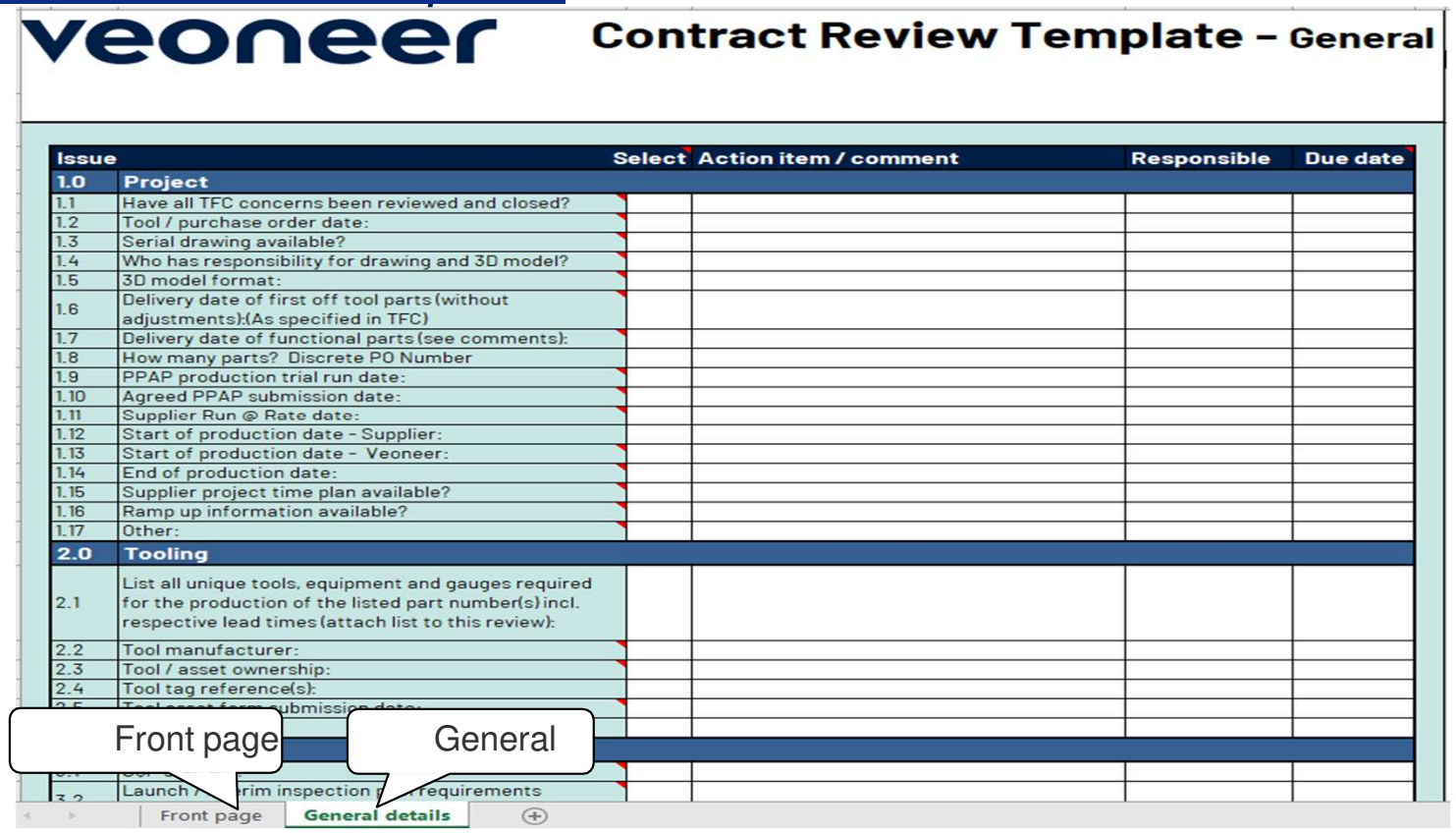
The Contract Review-template:



veoneer **Contract Review Template – General**

Issue		Select	Action item / comment	Responsible	Due date
1.0	Project				
1.1	Have all TFC concerns been reviewed and closed?				
1.2	Tool / purchase order date:				
1.3	Serial drawing available?				
1.4	Who has responsibility for drawing and 3D model?				
1.5	3D model format:				
1.6	Delivery date of first off tool parts (without adjustments):(As specified in TFC)				
1.7	Delivery date of functional parts (see comments):				
1.8	How many parts? Discrete PO Number				
1.9	PPAP production trial run date:				
1.10	Agreed PPAP submission date:				
1.11	Supplier Run @ Rate date:				
1.12	Start of production date - Supplier:				
1.13	Start of production date - Veoneer:				
1.14	End of production date:				
1.15	Supplier project time plan available?				
1.16	Ramp up information available?				
1.17	Other:				
2.0	Tooling				
2.1	List all unique tools, equipment and gauges required for the production of the listed part number(s) incl. respective lead times (attach list to this review):				
2.2	Tool manufacturer:				
2.3	Tool / asset ownership:				
2.4	Tool tag reference(s):				

Front page

General

Front page | General details

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6. Prototype Order and Delivery – Phase 2 (focus points)

- **Supplier shall submit Prototype documents according to VSM and Prototype order**
- **The Prototype process should be covered by a Prototype Control Plan**
- **Further requirements should be defined at the time of the Prototype order**

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*7. Production Trial Runs – **Phase 3***

(Production-Trial-Run Training Material available in the VSM!)

Why does Veoneer require Production Trial Runs ?

- Verify & confirm information on actual part / process
  - Evaluate performance as early as possible by First Trial Runs
  - Check against specifications (PPAP Trial Runs)
  - Ensure PPAP samples are run under serial conditions (PPAP Trial Runs)
  - Measure actual cycle times / capacities by Run@Rate

What may happen if PTRs are not performed ?

- Late PPAP approval
- Endanger SOP
- Increase amount of waste / scrap

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7. Production Trial Runs – Phase 3

CLD	PTR Requirements
1	documentation to be retained at supplier
2	documentation to be submitted to Veoneer
3	Veoneer participation at supplier, documents to be submitted to Veoneer

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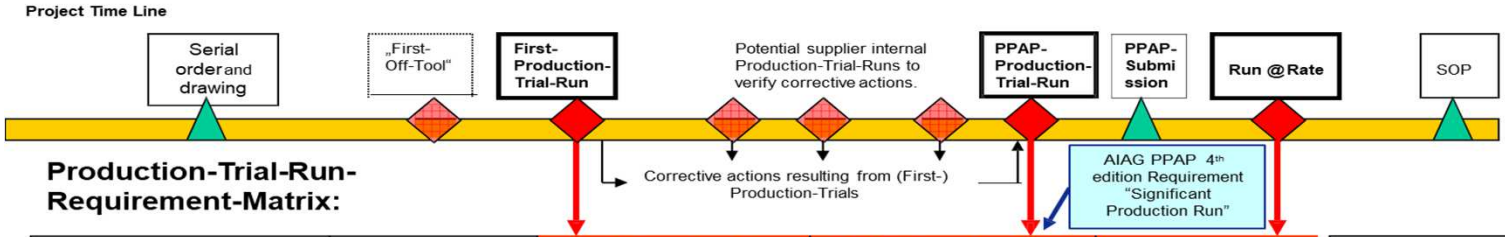
VSM: Supplier Production-Trial-Run Standard



Production-Trial-Run-Requirement-Matrix:

Trial-Run-Modules	Forms / Templates	First-Production-Trial-Run	PPAP-Production-Trial-Run	Run @ Rate
1. Dimensional, Material, Test Result Report	AIAG-Manual PPAP	x		
2. Capability Study	-	x		
3. Process-Quality-Audit*	Production-Trial-Run-Checklist	x		
4. Capacity / Efficiency Audit*	Production-Trial-Capacity Report	x		
Trial-Run-Conditions: Full Production Speed			●	●
Serial Production Equipment / Site			●	●
Trial-Run Minimum Durance		Not specified	1 hour	4 -8 **
Minimum No. of parts produced		Not specified	300	Tbd **
All Shifts considered in Trial-Run(s)				●
Change-Over Procedures considered				●
Trained Operators			●	●
PPAP-ed Sub-Components			●	●
Control Plan		Pre-Launch	Serial Production ***	Serial Production ***
Go & See PFMEA			●	Go&See PFMEA review and update

X : Analysis and evaluation;"out of specification" results allowed

(X) Final verification; "out of specification" results NOT allowed

● Demanded Trial-Run Condition;

* : The whole, inhouse process chain must be considered for the audits. For capacity audit all potential bottle-neck processes must be investigated.
** : The trial's durance and the amount of parts produced must be representative of the process's serial conditions.
***: Serial Production Control Plan might be intensified (according to VS412) upon Veoneer demand.

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8. Production Part Approval Process (PPAP) – Phase 3 (focus points)

- As per *VSM – Quality Requirements-PPAP*
- All submitted documents must be in English
- PPAP desired format is electronic file
- Use of *PPAP Submission Index*-template
- 100% complete and OK prior to submission

Retention/Submission Requirements Table 4.2

(Normative)

*[NOTE: Table 4.2 lists submission and retention requirements. Mandatory and applicable requirements for a **PPAP** record are defined in the **PPAP** manual and by the customer.]*

Requirement		Submission Level				
		Level 1	Level 2	Level 3	Level 4	Level 5
1.	Design Record	R	S	S	*	R
	- for proprietary components/details	R	R	R	*	R
	- for all other components/details	R	S	S	*	R
2.	Engineering Change Documents, if any	R	S	S	*	R
3.	Customer Engineering approval, if required	R	R	S	*	R
4.	Design FMEA	R	R	S	*	R
5.	Process Flow Diagrams	R	R	S	*	R
6.	Process FMEA	R	R	S	*	R
7.	Control Plan	R	R	S	*	R
8.	Measurement System Analysis Studies	R	R	S	*	R
9.	Dimensional Results	R	S	S	*	R
10.	Material, Performance Test Results	R	S	S	*	R
11.	Initial Process Studies	R	R	S	*	R
12.	Qualified Laboratory Documentation	R	S	S	*	R
13.	Appearance Approval Report (AAR), if applicable	S	S	S	*	R
14.	Sample Product	R	S	S	*	R
15.	Master Sample	R	R	R	*	R
16.	Checking Aids	R	R	R	*	R
17.	Records of Compliance With Customer-Specific Requirements	R	R	S	*	R
18.	Part Submission Warrant (PSW)	S	S	S	S	R
	Bulk Material Checklist (see 4.1 above)	S	S	S	S	R

S = The organization shall submit to the customer and retain a copy of records or documentation items at appropriate locations.

R = The organization shall retain at appropriate locations and make available to the customer upon request.

* = The organization shall retain at appropriate locations and submit to the customer upon request.

AIAG – PPAP Fourth Edition

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9. Start of Production (SOP) & Serial Deliveries – Phase 4 (focus points)

- On time delivery according to the delivery schedule in the right quantity and fulfilling all requirements
- Any deviations must be approved by the using Veoneer Plant

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10. Performance Review /SQP Closure – Phase 4 (focus points)

- Perform a Launch and process review
- Follow-up QCD Targets (Quality/ Cost/Delivery)
- Monitor early Production containment (SQPS-412)
- Closure of SQP.
- Continuous Performance monitoring (VS051)

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11. Continuous Cost and Process Improvement

- Manufacturing process improvements under a program of regular management review.

- Suggestion of design changes to improve the product cost, quality, process and performance.

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12. EOP = End of Production and Spare Parts (focus points)

Supplier shall comply with the

Veoneer Spare Part Standard

Here some focus points:

- **Spare Parts for 15 years after EOP**
- **Delivery latest 30 days after notification**
- **Serial pricing for 5 years after EOP**
- **PPAP-requirements to be respected**

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13. Complaint Reporting and Resolution (focus points)

- After a NCM (Non-Conforming Material)-Report was received, the supplier must conduct an immediate investigation :
  - **To locate and contain the potentially defective parts in the supply chain.**
  - **To ensure that the problem will not cause delivery failure or production line stop at Veoneer.**
  - **To specifically mark all deliveries with sorted parts shipped to Veoneer. Certified (100% o.k. parts) deliveries must be marked according to Veoneer instructions.**
  - **To implement a backlog recovery plan.**
  - The supplier must respond in writing (timing is defined in the *NCM - Escalation Model*) using the 8D-procedure.

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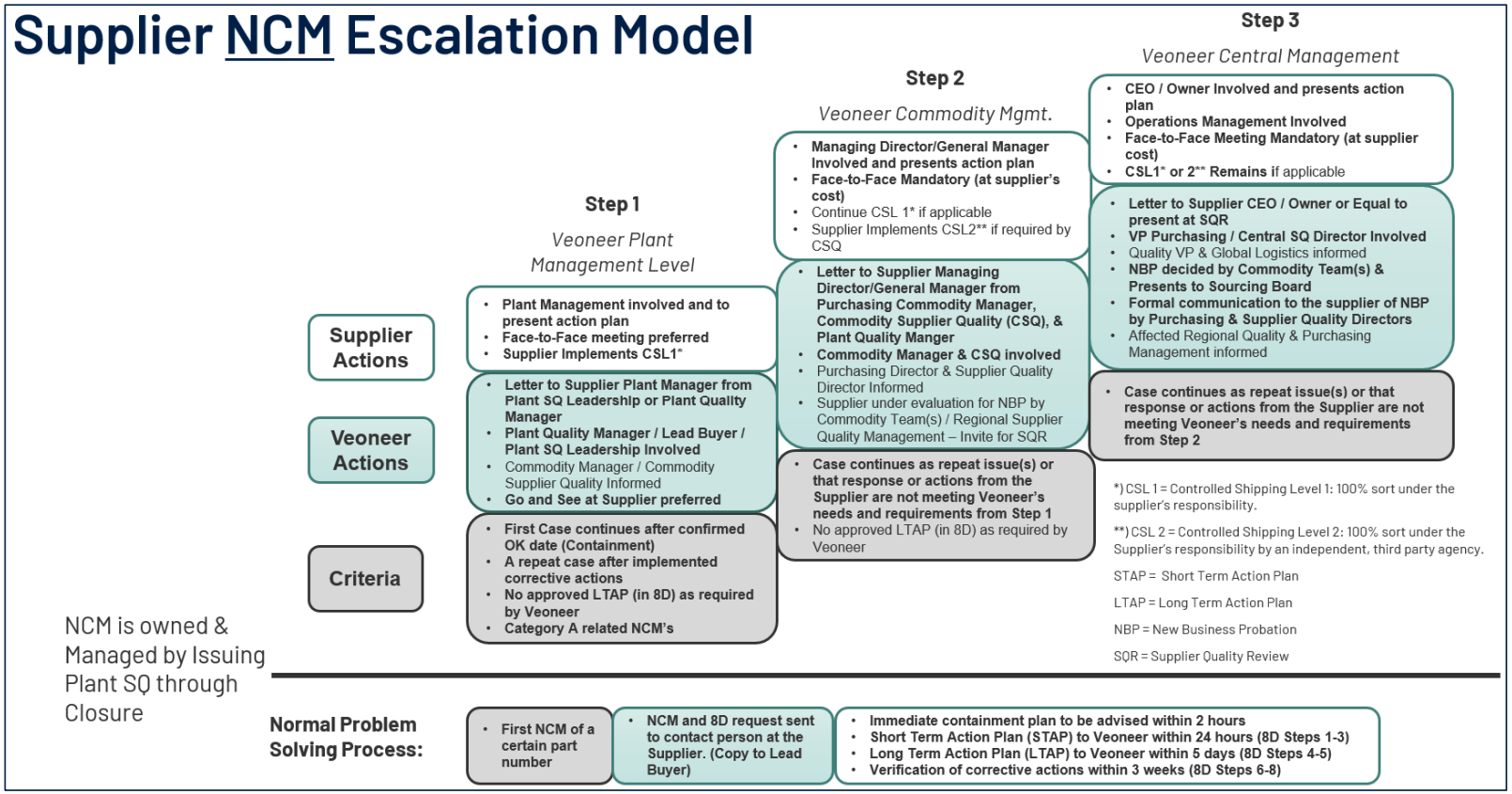
14. Veoneer Escalation Model



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15. Quality and Delivery Review (focus points)

- For Suppliers with repeat problems or unacceptable VS051 performance Veoneer starts a *Quality and Delivery Review Process*.

- Attendance of appropriate supplier senior management is required.

- The meetings follow the Veoneer standard *Supplier Quality/Delivery Review Process,* available in the VSM.

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16. Product Resourcing

- After all other previous corrective actions with the current supplier have failed.

- Result: The product is re-sourced to another supplier and the commodity sourcing strategy is revised.

Thank You!