SQPS-932

Veoneer Supplier Manual (VSM) - Quality

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15-SEPT-2022

veoneer

Table of Content

Responsibility

Supplier has the full responsibility:

- Have an effective, operating quality system
- Ensure their processes are controlled / capable
- Ensure sub-suppliers processes are controlled / capable
- Provide services which conform to all Veoneer requirements.

Quality System

- **Veoneer requires compliance and evidence to:**
  - ISO9001
  - AIAG-Manuals PPAP and APQP
  - VSM
  - Full compliance with IATF (When Applicable)
  - ASPICE Level 3 When Applicable or
    - Successful Veoneer Assessment followed by a documented plan approved by Veoneer for obtaining ASPICE Level 3 within 18 months (or reasonable time) with Veoneer's CSQ approval of plan
- **Veoneer Suppliers must have third-party Certificates to:**
  - Minimum : ISO 9001 (Latest revision) AND
  - IATF 16949 (Latest revision) or
    - Documented plan approved by Veoneer for obtaining IATF 16949 within 18 months (or reasonable time) with Veoneer's CSQ approval of plan.

Advance Product Quality Planning (APQP)

- The supplier shall follow the APQP process as defined in the AIAG APQP Manual. Veoneer specific APQP requirements are documented on the **S-APQP** template.

- Use the **S-APQP** template for all launch related activities. Veoneer will check on this periodically.

- The supplier must report progress and the current status of all projects through the application of Advanced Quality Planning techniques. (references: **S-APQP** template and the AIAG Manual APQP)

S-APQP Activity Planning (Example for Electronics)

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				

Production Part Approval Process (PPAP)

- PPAP purpose is to:
  - Provide evidence that all customer engineering design records and specifications requirements are properly understood by the supplier.
  - Ensure that the process has the capability to produce product consistently meeting these requirements during an actual production run at the quoted production rate.

PPAP Applicability and Documentation Requirements

- PPAP shall apply to internal and external organizations sites of bulk materials, production materials, production or service parts.
- For bulk materials, PPAP is not required unless specified by the authorized Veoneer representative.
- All submitted documents must in English
- Deliverables desired format is electronic file (.pdf)
- 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.]*

		Submission Level				
Requirement		*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

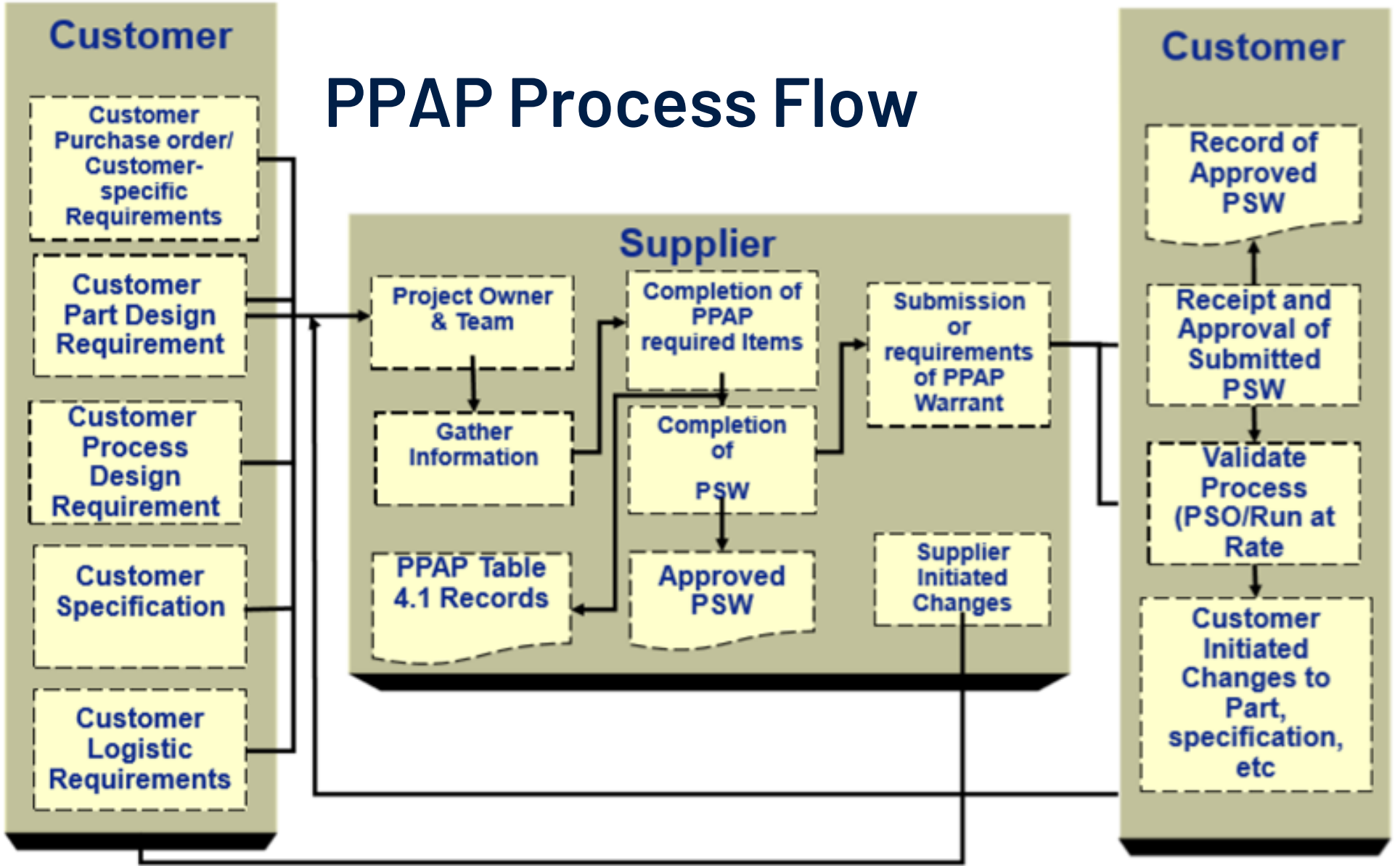
PPAP General Requirements

- The default level for PPAP submissions is level 3
  - Unless specified otherwise by the responsible part approving body.
  - The supplier is responsible for ensuring all PPAP elements are kept up to date to reflect the current approved part and process whenever required to be submitted.
- Laboratory data in the original PPAP submission must be less than 12 months old
- Traceability for PPAP parts shall meet the same requirements as serial parts
- Additional elements may be added to the PPAP process due to Veoneer's specific customer demands

PPAP Critical Elements :

- ✓Process Owner exists
- ✓Process is Defined
- ✓Process is Documented
- ✓Linkage of Process established
- ✓Process Monitored, analyzed and Improved
- ✓Record maintained

PPAP Process Flow



PPAP Process Basic Requirements

- Design Records
- Authorized Engineering Change Documents
- Customer Engineering Approval
- Design Failure Mode and Effects Analysis (Design FMEA)
- Process Flow Diagram (S)
- Process Failure Mode and Effects Analysis (Process FMEA)
- Control Plan
- Measurements System Analysis Studies
- Dimensional Results
- Records of Material/ Performance Test Results
- Initial Process studies
- Quality Laboratory Documentation
- Appearance Approval Report (AAR)
- Sample Production Parts
- Master Sample
- Checking Aids
- Customer-Specific Requirements
- Part Submission Warrant (PSW)
- Customer Specific Requirements (Packaging form, Trial Run etc.)

PPAP Checklist Example*

Veoneer - Supplier PPAP Checklist

Rev 1-11 (include this checklist with submittal)

SUPPLIER/SUPPLIER NAME: | PART No. / NAME:

DRAWING NUMBER: | Engineering change level (ECL) / DATE:

WARRANT SUBMISSION DATE: | LEVEL OF SUBMISSION:

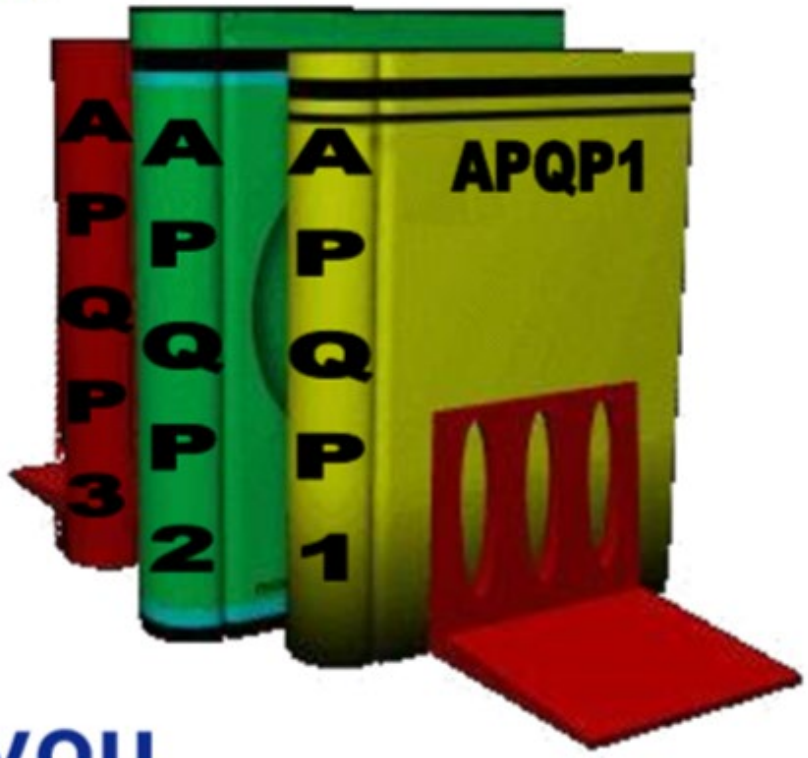
PPAP No:

	Items	YES	NO	N/A	Remarks / Comments / Needed Actions
0	**PPAP Package**				**0 PPAP Package**
0.1	Does the PPAP reflect all changes of the tool or process?				
0.2	In case of re-submissions: Is the requested information available?				
0.3	Are all documents legible and understandable?				
0.4	Are all PSW of sub-components included?				
1	**Design Records of Saleable Product [Sect 2.2.1]**				**1 Design Records of Saleable Product [Sect 2.2.1]**
1.1	Are actual design records included (e.g. applicable drawings, material specification, TFC, measurement agreement)?				
1.2	Is a TFC available for the drawing engineering level posted in the PPAP?				
1.3	Was the TFC and all actions closed with YES?				
1-1	**IMDS Declaration [Sect. 2.2.1.1]**				
1-1.1	Are records of IMDS declaration of material done in IMDS database?				
1-1.2	Has IMDS information been approved?				
2	**Engineering Change Documents (as applicable) [Sect. 2.2.2]**				**2 Engineering Change Documents (as applicable) [Sect. 2.2.2]**
2.1	Is this PPAP submission to the latest drawing level?				
2.2	Is approved/requested Interim Recovery Worksheet (IRW)?				
3	**Customer Engineering Approval, (if required/if supplier has design responsibility)**				**3 Customer Engineering Approval, (if required/if supplier has design responsibility)**
3.1	Supplier is not required to obtain customer approval of the design record.				
4	**Design FMEA [Sect. 2.2.4]**				**4 Design FMEA [Sect. 2.2.4]**
4.1	If the supplier is responsible for the Design FMEA, go to 4.2; 4.3; 4.4				
4.2	Is the right part number and current index referred?				
4.3	Are all potential failure modes included?				
4.4	Are corrective actions planned and documented?				
5	**Process Flow Diagrams [Sect. 2.2.5]**				**5 Process Flow Diagrams [Sect. 2.2.5]**
5.1	Is a Process Flow chart (PFC) available?				
5.2	Is the right part number and current index referred?				
5.3	Is the original and version date noted?				
5.4	Is the PFC completely in English?				
5.5	Is each step in the process completely and clearly defined including transports, rework, inspection points and sub supplier?				
5.6	Is each step in the process keyed to the PFMEA & Control Plan?				
	Note: any rework / regrind must be approved by Veoneer!				
6	**Process FMEA [Sect. 2.2.6, and reference manual]**				**6 Process FMEA [Sect. 2.2.6, and reference manual]**
6.1	PFMEA (acc. to AIAG FMEA Manual or similar and VS104) available at the supplier? (Confirmation in PPAP-package)				
6.2	Is the right part number and current index referred?				
6.3	Are the top 5 RPNs addressed with recommended actions? (Requirement ANA) Or are limit values defined for RPN and implemented actions if the limit is exceeded?				
6.4	Are all CC/SC characteristics (process & engineering record) identified?				
6.5	Is the PFMEA completely in English?				
6.6	Are adequate controls in place for all CC/SC characteristics?				
6.7	Performed "Go&See PFMEA" using the Go&See PFMEA Checklist? Updated all documents as applicable and all findings closed?				

* To be used when requested by VEONEER

PPAP vs APQP

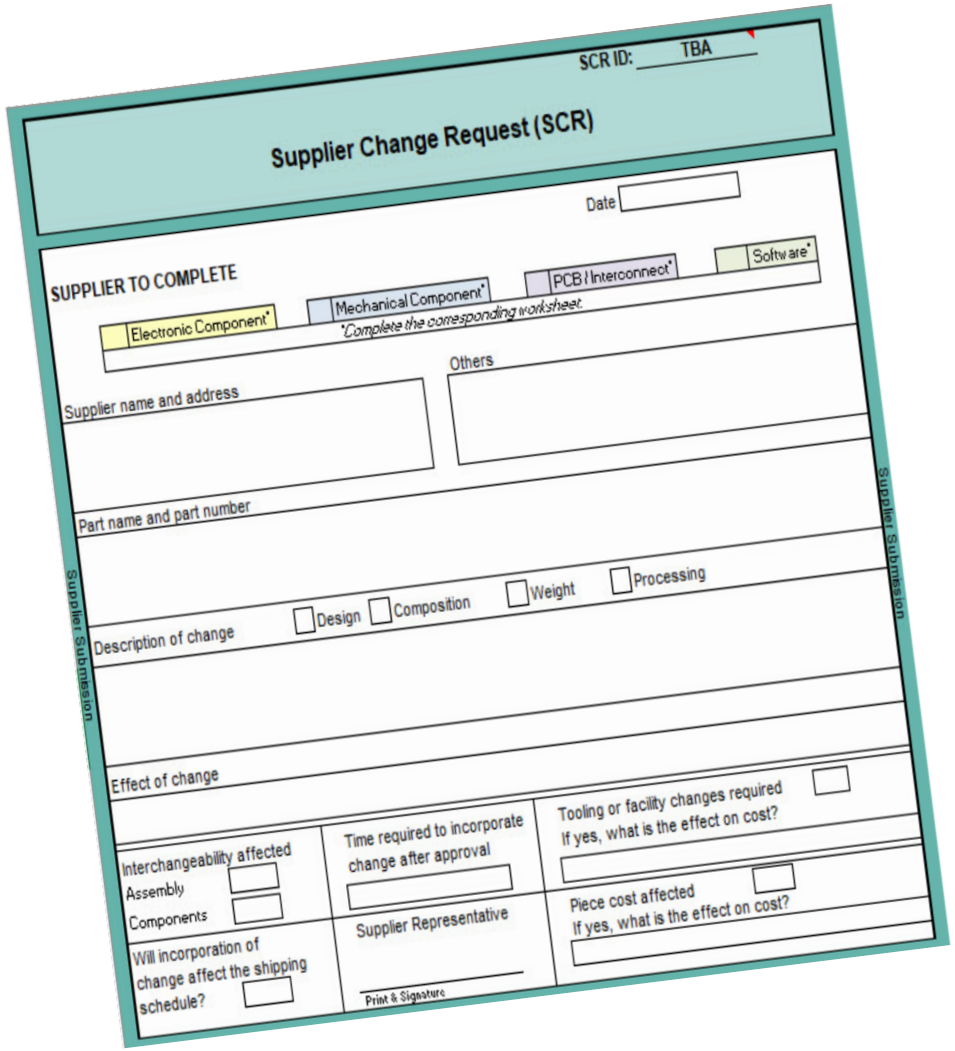
PPAP is not something separate from APQP….



If you follow APQP, you will have a good PPAP!

Supplier Change Request (SCR) – Example

(Actual document available in VSM attached files)



SCR ID: TBA

Supplier Change Request (SCR)

Date

SUPPLIER TO COMPLETE

Electronic Component* | Mechanical Component* | PCB / Interconnect* | Softw are*

*Complete the corresponding worksheet

Supplier name and address

Others

Part name and part number

Description of change — Design | Composition | Weight | Processing

Effect of change

Interchangeability affected — Assembly | Components

Time required to incorporate change after approval

Tooling or facility changes required — If yes, what is the effect on cost?

Will incorporation of change affect the shipping schedule?

Supplier Representative

Print & Signature

Piece cost affected — If yes, what is the effect on cost?

Supplier Submission

Supplier Submission

- The SCR procedure applies to all suppliers
- VEONEER engineering approval is required prior to implementing any change
- Reference is made to the AIAG Manual PPAP/ SCR process
- Changes should be submitted as soon as possible, and may require:
  - VEONEER Change Management
  - Additional Testing & Qualification
  - Customer approval

Special Characteristics Classification (VS052)

- The Special Characteristics Classification and resulting actions are defined and explained in the VEONEER Standard VS052.
- Frequency of submission of results of control and verification of Special Characteristics will be directed by the using Veoneer facility.

Product, Process and System Audit

- Veoneer has the right to carry out product, process and system audits at the supplier and their sub-suppliers.

- Veoneer has the right to require that the supplier carries out and reports internal product process and system audit results.

Dock Audit

- When required by Veoneer, the supplier shall complete a Dock Audit prior to shipping a manufacturing lot of product to Veoneer (reference ISO/TS 16949 Clause 7.4.3, and section "Lot Definition" below).
- A Dock Audit is a product inspection that is performed on product after the manufacturing activity and final inspection is completed.
- A Dock Audit Report (DAR) shall be:
  - Specified by the Veoneer facility (where appropriate)
  - Format
  - On file at the supplier's facility
  - Available upon request by the Veoneer using facility.
- Raw Material Certifications are to be retained by the supplier (reference "Document Control and Records") and available upon request by Veoneer.

Annual Layout Inspections

- The supplier shall conduct a one piece, 100% layout inspection of every part number minimum once per year from each manufacturing process and tool. This layout shall include all dimensions / characteristics specified on drawings and specifications, if not otherwise specified.
- Annual layout inspection and dates shall be included in the supplier's production control plan. Any characteristics which are enumerated on the production control plan and are measured more frequently than once per year will not require annual layout inspection.
- The data shall be available on request from the Veoneer using facility.
  - In the event of a non-conformance, all related data shall be submitted to the product approval authority of the using Veoneer facility.
- For multi-cavity tooling, all cavities must be represented.
- If a complete new PPAP submission is required, the PPAP will substitute the Annual Layout Inspection.

Product Safety, Liability and Warranty

The supplier is responsible to ensure that any and all materials, components, products and services supplied to Veoneer in all respects conform to Veoneer specifications, drawings, quality requirements and that such materials, components, products and services are free from defects in design (to the extent designed by supplier), material and workmanship, are of merchantable quality and comply with all applicable laws.

Product Safety, Liability and Warranty

- The supplier must introduce adequate systems, ensuring the following:
  - Information and qualification of the affected personnel
  - Legal advice (internal and external)
  - Compliance with and use of state-of-the-art technology
  - That the development, production and quality assurance processes and their supervision are according to the latest status of technology (it may not be sufficient only to comply with the standard)
  - Limitation of fault consequences by documentation and traceability system
  - Immediate information to Veoneer of any discovered non-conformity

Product Status and Traceability

- The supplier's systems must ensure that all critical and significant characteristics as indicated on Veoneer drawings and specifications are traceable and recorded from the lot/batch number of the delivered part to the raw material(s) lot(s)/batch(s) from the sub supplier. This is also applicable for all process parameters affecting such characteristics and raw material certificates or analyses. All records shall be provided to Veoneer immediately, without delay upon request.
- The identification of inspection and test status for products shall be maintained at each stage of production. The traceability level of Veoneer parts is specified according to Veoneer Standard VS004.

Lot / Batch Definition

- If nothing else is specified, the supplier's manufacturing lot/batch size shall not exceed one (1) day (24 hours) production, with a maximum of 20,000 parts.
- The definition of the lot/batch size shall be done in consideration of traceability requirements. (reference: VS004 see appendix 2)

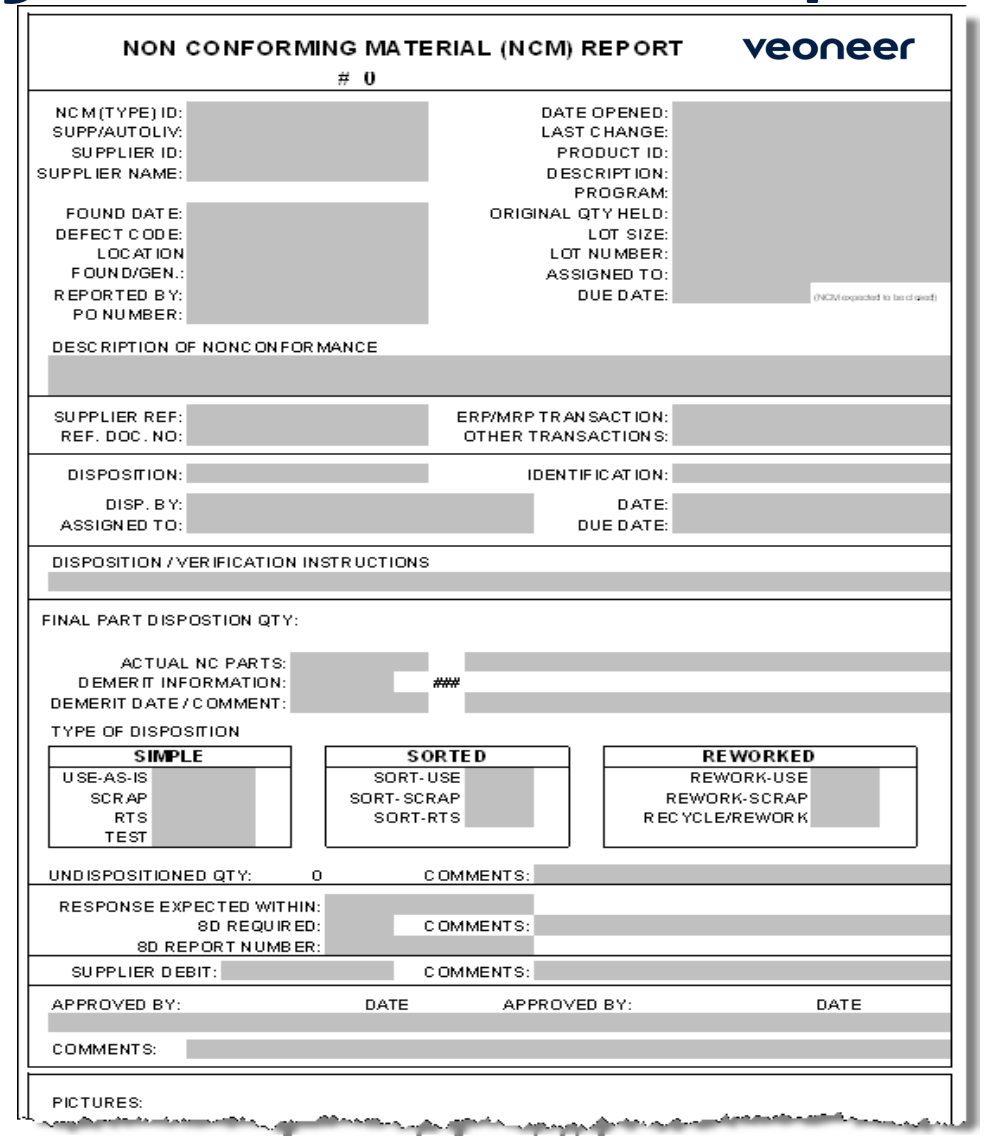
Document Control and Records

- All documents and records demonstrating product quality conformance and traceability documents, must be stored in safe condition in order to prevent destruction and maintained for minimum 23 years after shipment of items affected by document or longer if required by legislation.
- In addition to that specified in ISO 9001 or ISO/TS 16949, the following records shall require retention:
  - Production conformity test reports
  - Critical process parameters as defined in the supplier Control Plan
  - Raw material certificate
  - Test procedures and results
  - Receiving inspection results
  - PPAP submission and response
  - Master samples

Non-Conforming Material (NCM)

- Veoneer reports to the supplier a Non-Conforming Material (NCM)
- 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 containment action plan must be sent to Veoneer quality department immediately (standard time is defined in Escalation Model / Step 1) or in accordance with the NCM-requirements (Non-Conforming Material).

Non-Conforming Material (NCM) Report



NON CONFORMING MATERIAL (NCM) REPORT

veoneer

0

NCM (TYPE) ID:
SUPP/AUTOLIV:
SUPPLIER ID:
SUPPLIER NAME:

FOUND DATE:
DEFECT CODE:
LOCATION FOUND/GEN.:
REPORTED BY:
PO NUMBER:

DATE OPENED:
LAST CHANGE:
PRODUCT ID:
DESCRIPTION:
PROGRAM:
ORIGINAL QTY HELD:
LOT SIZE:
LOT NUMBER:
ASSIGNED TO:
DUE DATE:

DESCRIPTION OF NONCONFORMANCE

SUPPLIER REF:
REF. DOC. NO:

ERP/MRP TRANSACTION:
OTHER TRANSACTIONS:

DISPOSITION:

IDENTIFICATION:

DISP. BY:
ASSIGNED TO:

DATE:
DUE DATE:

DISPOSITION / VERIFICATION INSTRUCTIONS

FINAL PART DISPOSTION QTY:

ACTUAL NC PARTS:
DEMERIT INFORMATION: ###
DEMERIT DATE / COMMENT:

TYPE OF DISPOSITION

SIMPLE	SORTED	REWORKED
USE-AS-IS	SORT-USE	REWORK-USE
SCRAP	SORT-SCRAP	REWORK-SCRAP
RTS	SORT-RTS	RECYCLE/REWORK
TEST		

UNDISPOSITIONED QTY: 0 COMMENTS:

RESPONSE EXPECTED WITHIN:
8D REQUIRED: COMMENTS:
8D REPORT NUMBER:

SUPPLIER DEBIT: COMMENTS:

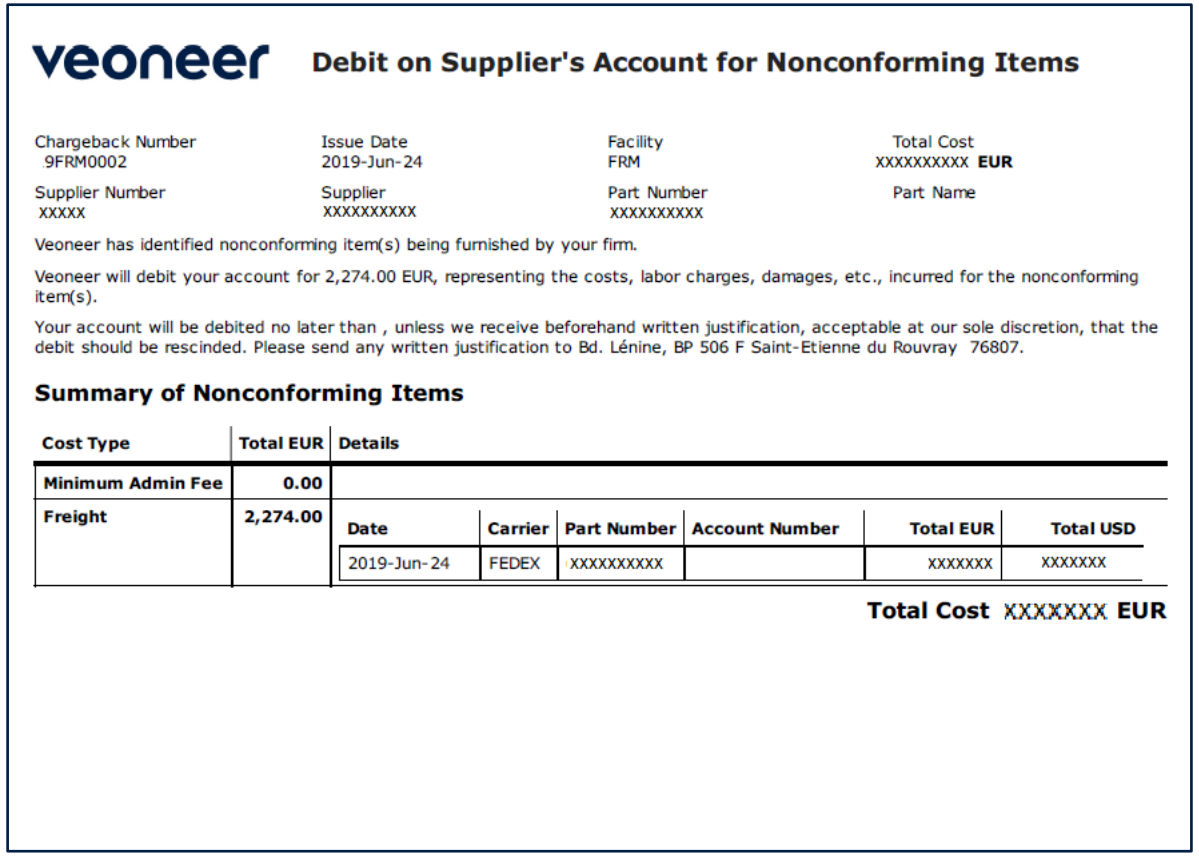
APPROVED BY: DATE APPROVED BY: DATE

COMMENTS:

PICTURES:

Charge Back Notification For NCM Related Cost

- Veoneer facilities have the right to charge back to the supplier any costs that are incurred due to a nonconformance.
- This is an example of notification.
- Supplier must immediately appeal if they disagree.



Debit on Supplier's Account for Nonconforming Items

Chargeback Number	Issue Date	Facility	Total Cost
9FRM0002	2019-Jun-24	FRM	XXXXXXXXX **EUR**
Supplier Number	**Supplier**	**Part Number**	**Part Name**
XXXXX	XXXXXXXXX	XXXXXXXXX	

Veoneer has identified nonconforming item(s) being furnished by your firm.

Veoneer will debit your account for 2,274.00 EUR, representing the costs, labor charges, damages, etc., incurred for the nonconforming item(s).

Your account will be debited no later than , unless we receive beforehand written justification, acceptable at our sole discretion, that the debit should be rescinded. Please send any written justification to Bd. Lénine, BP 506 F Saint-Etienne du Rouvray 76807.

Summary of Nonconforming Items

Cost Type	Total EUR	Details
Minimum Admin Fee	0.00	
Freight	2,274.00	Date: 2019-Jun-24 · Carrier: FEDEX · Part Number: XXXXXXXXX · Account Number: · Total EUR: XXXXXXX · Total USD: XXXXXXX

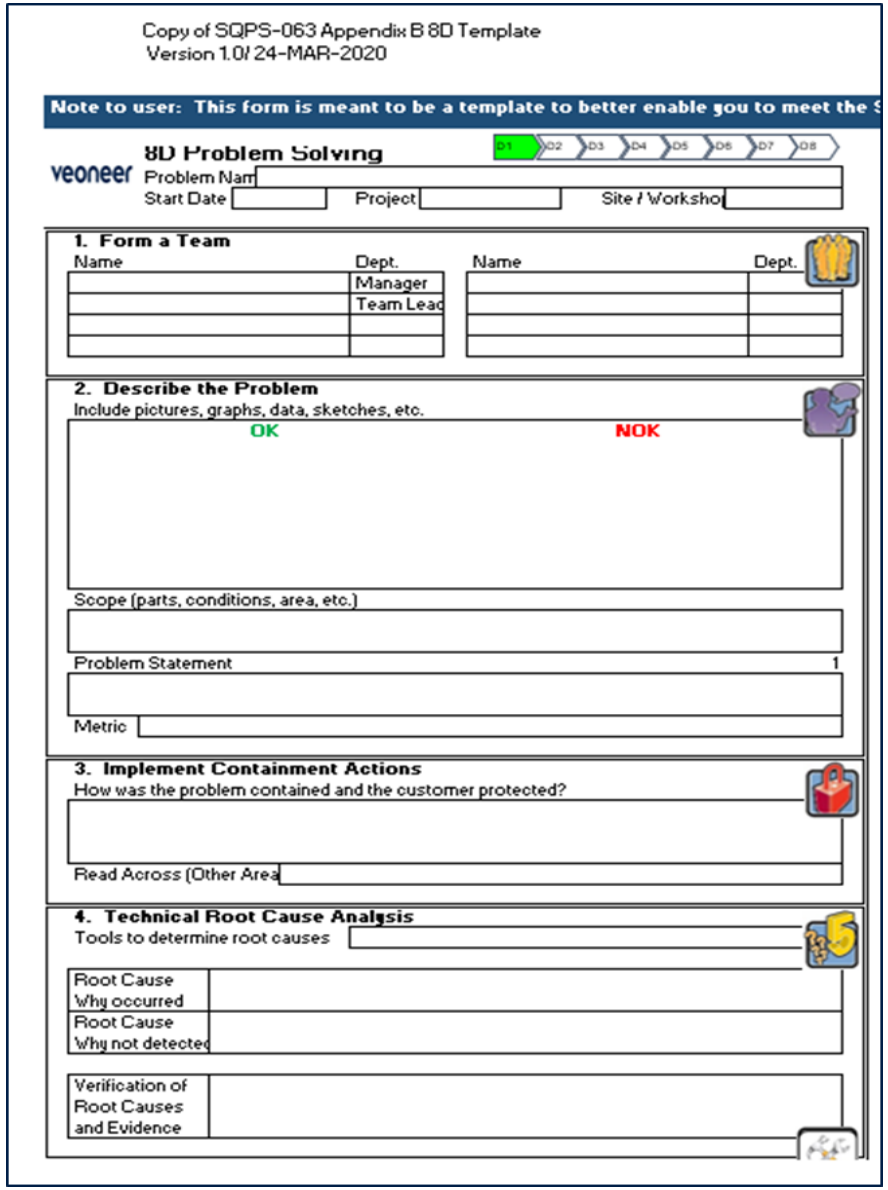
Total Cost XXXXXXX **EUR**

Charge Back Process

- If the supplier passes Non-Conforming Material to VEONEER
  - Supplier will pay for the cost, both in material and impact.
  - Base charges may apply per issue regardless of supplier's reaction.
- Proactive notifications/sorts not charged flat fee.
- All additional costs tracked and charged. Lack of reaction from supplier causes cost to increase

Corrective Actions

- The supplier reports corrective actions (timing according to NCM Escalation Model) after the NCM (Non-Conforming Material Report) receipt using the 8D-discipline. The recommended form is the 8D-Report, if not otherwise agreed with Veoneer.
- The Veoneer expectations regarding problem solving are defined and explained in the Veoneer Standard VS063 and the VSM "Complaint Reporting and Resolution".


Copy of SQPS-063 Appendix B 8D Template
Version 1.0/ 24-MAR-2020

Note to user: This form is meant to be a template to better enable you to meet the S

veoneer 8D Problem Solving

D1 D2 D3 D4 D5 D6 D7 D8

Problem Nam

Start Date Project Site / Worksho

1. Form a Team

Name Dept. Name Dept.

Manager

Team Lead

2. Describe the Problem

Include pictures, graphs, data, sketches, etc.

OK NOK

Scope (parts, conditions, area, etc.)

Problem Statement 1

Metric

3. Implement Containment Actions

How was the problem contained and the customer protected?

Read Across (Other Area

4. Technical Root Cause Analysis

Tools to determine root causes

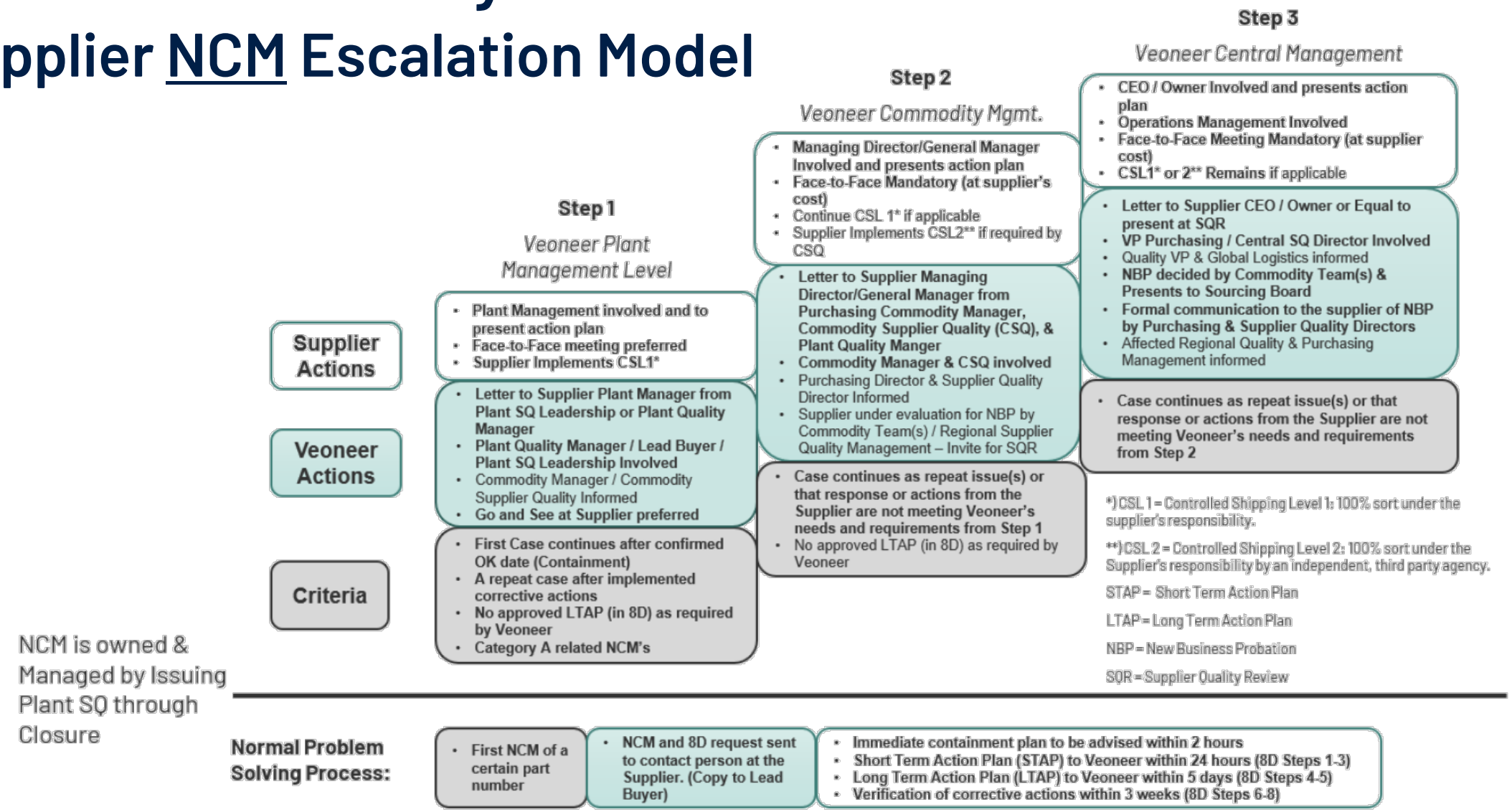
Root Cause Why occurred

Root Cause Why not detected

Verification of Root Causes and Evidence

The Product Life Cycle with Veoneer

Supplier NCM Escalation Model



Supplier Quality Alert – Yokoten Objectives

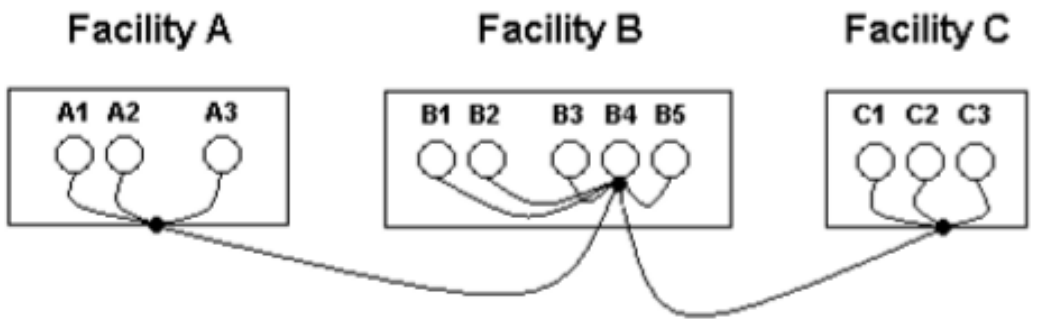
- We want to **learn** from the mistakes of all suppliers
- We want to **share** Lessons Learned with all suppliers
- We want to **ensure** Lessons Learned are applied at all suppliers

Yokoten

Yokoten is Sharing to Prevent Future Waste

Yokoten Shares Knowledge of Problems, Solutions, and Lessons to other Production and Support Processes Within a Facility

Problem Identified and Corrected at Facility B Line 4

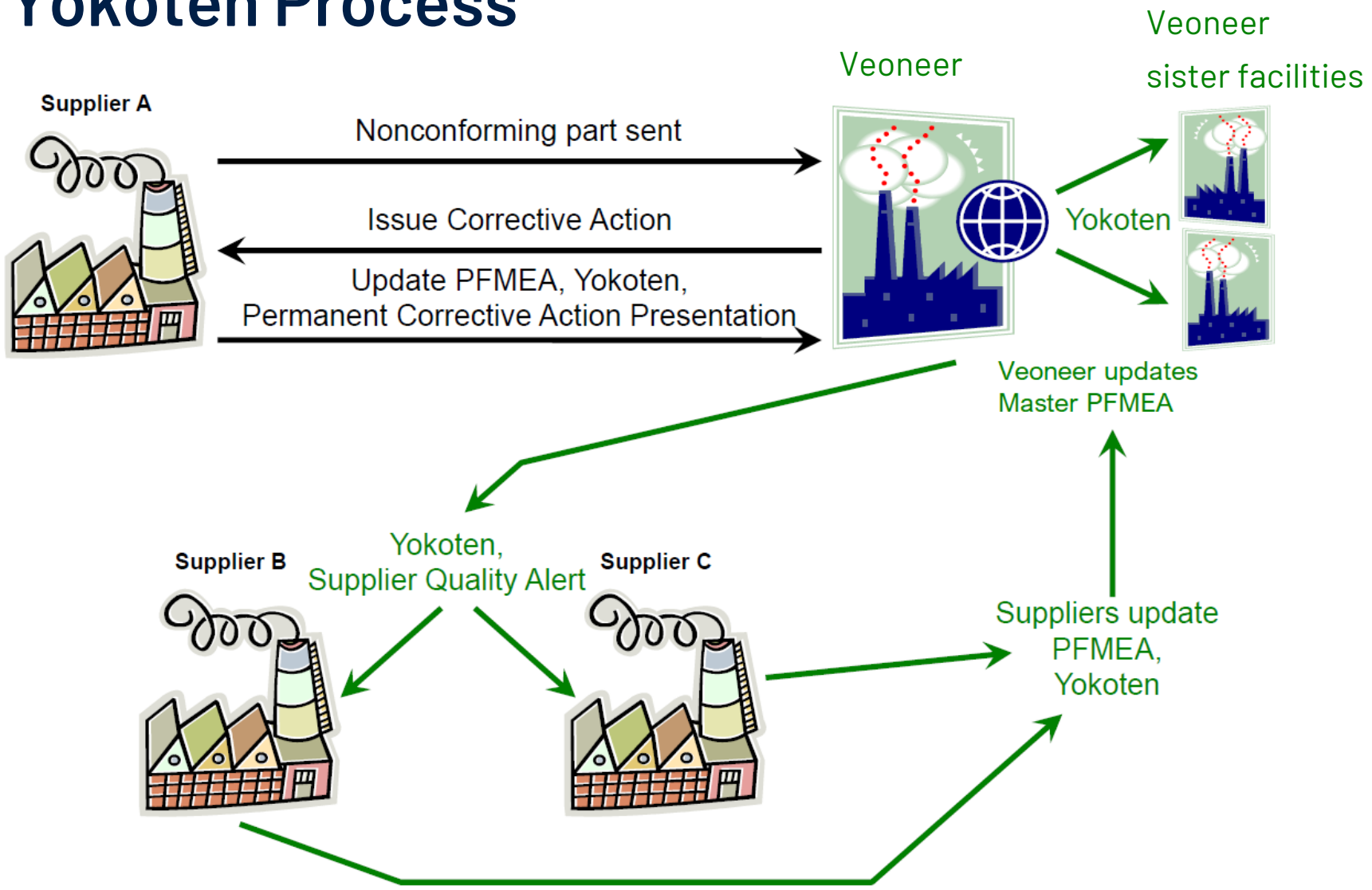


Yokoten Shares the Information to Other Facilities Within the Company and Other Companies Within the Corporation

Supplier Yokoten Process

- When a non-conforming part is found:
  - Veoneer will issue a NCM with Corrective Action to supplier, supplier will submit updated PFMEA and will Yokoten all similar parts and processes.
  - Veoneer using facility will alert other Veoneer facilities.
  - Veoneer will send Supplier Quality Alert to all suppliers who make similar parts and/or use similar processes. These suppliers will Yokoten all similar processes and forward updated PFMEA to Veoneer.
  - Note: In order to protect proprietary information, only the potential failure will be shared, not the corrective actions implemented by any of our suppliers.
  - Veoneer will update the Master PFMEA for this commodity.

Supplier Yokoten Process



Continuous Improvements

- Veoneer requires a continuous improvement program from their suppliers. Veoneer recommends the tools included in the VES (Veoneer Excellence System).

- The program shall also include actions to identify and reduce process variations. References: VSM "Continuous Process and Cost Improvement" and VSM "Supplier Development Program".

Thank You!