VEONEER SUPPLIER MANUAL

NOVEMBER 22, 2022

VSM VERSION 1.4

1. Introduction

Purpose:

The Veoneer Supplier Manual (VSM) describes and explains "How to do business with Veoneer".

The VSM provides requirements, guidelines and tools to facilitate Veoneer's collaboration with its external suppliers. Part from the content the VSM also publishes related News.

The VSM supports Veoneer's strategy to be a global company with a highly qualified and global Supply Base.

Scope:

The VSM is a Veoneer worldwide manual and describes and documents the Veoneer business cycle. All external suppliers developing and/or supplying production material to all Veoneer companies.

The VSM was developed with the intent to cover customized parts and sub-assemblies. For standard catalogue parts the VSM may be partially applied. This has to be defined by the responsible Veoneer Company.

Responsibilities:

Veoneer requires suppliers to fully comply with the General Requirements described in the Manual. This must be confirmed by returning a signed copy of the VSM - Supplier Acknowledgement Letter.

The supplier should assign as a minimum one VSM-Program Manager to ensure that the Veoneer requirements are understood, trained, implemented and maintained at the supplier. In case of any questions the supplier should contact the responsible Veoneer Lead Buyer.

VSM-Concept Introduction:

The VSM is based on the IATF 16949, the AIAG-Manuals, the VPDS (Veoneer Product Development System), the VPS (Veoneer Production System) and the VSPP (Veoneer Sourcing and Purchasing Process).

The VSM outlines the Veoneer Business Cycle, which is built up in three main blocks:

2. General Supplier Requirements:

They define the general specifications in the following areas:

2.1 General

2.2 Specific Requirements

2.2.1 Quality - General

2.2.2 Quality - PPAP

2.2.3 Project Management

2.2.4 Manufacturing Systems

2.2.5 Logistics

2.3 Supplier Registration

3. The Component and Software Lifecycle:

A structured process which describes the collaboration between Veoneer and its suppliers. It covers the entire product life cycle from early component and software development phase to the end of product life.

4. The Supplier Lifecycle:

A structured process which describes the relation and collaboration between Veoneer and its suppliers. Describing the pre-qualification to become a Veoneer supplier, the ongoing relation and when collaboration is discontinued. It address our expectations and requirements as a comparison of actual to requested supplier profile and performance. The review criteria are a combination of VS 051 rating and Commodity evaluation.

Contact:

Responsible Veoneer Lead Buyer.

VSM-Changes and Updates:

The supplier VSM-Program Managers will be informed through VPP (Veoneer Partner Portal) about any major VSM-changes or updates. Additionally all changes and updates are documented on the VSM-change list included in the Manual (VSM Updates).

Non-conformance to changes and updates for any reason must be reported, by the supplier, to the responsible Veoneer Lead Buyer. VSM-Reference Documents, (e.g. referenced standards, templates etc.) are always valid in their latest version. Supplier improvement proposals on the Manual should be submitted to the responsible Lead Buyer.

VSM-Supplements:

- Standard Purchase Terms & Conditions
  The Standard Purchase Terms & Conditions are valid globally and shall be approved in writing by an authorized representative of the Supplier. The Standard Purchase Terms & Conditions are also a supplement to the Purchase Order, PO.

- Business Code of Ethics for Suppliers (Section Supply Chain)

Veoneer expects that as part of the commitment to doing business with Veoneer that our suppliers will implement Business Conduct and Ethics for Suppliers and commit to upholding the same social, ethical, and environmental principles in operating their businesses in a manner which is in accordance with generally accepted ethics principles, in the areas of:

- Human Rights and Working Conditions
  (Health and Safety, Child Labor and Forced Labor, Fair Working Conditions, Non-Harassment and Non-Discrimination, Freedom of Association & Collective Bargaining, and Conflict Minerals
- Environment & Sustainability
- Business Conduct and Ethics

  (Antitrust, Competition, Anti-corruption, and Anti-money laundering, Conflicts of Interest, Export Controls, Protection of Intellectual Property, and Respect for Company and Personal Data)

The supplier shall read and comply with the Veoneer Standard of Business Conducts and Ethics for Suppliers.

- Additional -not alternative- local requirements or templates may exist and can be found under the Standards and Templates section.

Reference Documents:

Business Code of Ethics for Suppliers (Section Supply Chain)

2. General Requirements

2.1 General

2.1.1 Business Code of Ethics for Suppliers

- Business Code of Ethics for Suppliers (see Section "**Supply Chain**" and pick your preferred language)

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- **Environment & Sustainability**
- **Business Conduct and Ethics**

  (Antitrust, Competition, Anti-corruption, and Anti-money laundering, Conflicts of Interest, Export Controls, Protection of Intellectual Property, and Respect for Company and Personal Data)

- Additional -not alternative- local requirements or templates may exist and can be found under the Standards and Templates section.

The supplier shall read and comply with the Veoneer Standard of Business Conducts and Ethics for Suppliers and return duly signed the related **Business Code of Ethic for Supplier Acknowledgement Letter**

For a better understanding, please also have a look at this short presentation : Veoneer Business Code of Conduct and Ethic for Suppliers - Training

2.1.2 Environment

Purpose:

To explain the Veoneer environmental requirements.

Input from Veoneer:

- Veoneer Environmental Policy
- Veoneer Climate Policy
- Veoneer Standard of Substance Use Restrictions

Requirements:

Environmental Policy

Veoneer has established an Environmental Policy and requires its suppliers to undertake a similar environmental responsibility. For all activities, the supplier shall comply with legal (local, national, and global) environmental requirements.

For a full environmental commitment, our suppliers should implement an Environmental Management System, preferably based on ISO 14001 and to be certified accordingly.

Climate Policy

During 2021, Veoneer set targets related to the climate, which are described in the Veoneer Climate Policy (VS030 Appendix E).

In order to meet the second target : ***Carbon neutral products by 2039*** *(from sourcing to disposal)*

Veoneer needs to ensure its business partners are also adopting the same ambition regarding carbon emission, with a compatible planning and therefore Veoneer suppliers are requested to :

- Report their carbon emissions
- Provide their own targets regarding carbon neutrality with associated dates
- Share their detailed action plan

Based on the input received, Veoneer supply base will be classified against our climate policy and supplier status will be considered for new business decisions.

Material Data System

All substances used in production part materials shall be declared electronically in IMDS (International Material Data System).

For Chinese customers material data entry in CAMDS (China Automotive Material Data System) may also be requested, as needed.

The declaration in IMDS shall comply with the Veoneer Standard, VS005 (Substance Use Restrictions). VS005 covers material data reporting requirements and substance use restrictions, for Veoneer and its suppliers.

The IMDS declarations shall comply with the IMDS Recommendations published on the IMDS web site (http://www.mdsystem.com).

The supplier shall submit an approved IMDS declaration with the PPAP package. As a consequence, the supplier shall complete the IMDS entry in the IMDS database a reasonable time period before the agreed PPAP-submission-date. Only this procedure will give Veoneer the opportunity to approve the IMDS-entry prior to the supplier's PPAP submission date. In case Veoneer does not respond to the IMDS declaration before supplier's PPAP submission date, it is sufficient for the supplier to submit only the IMDS entry confirmation with the PPAP package. PPAP approval can only be done with an approved IMDS Declaration.

Further reporting requirements and guidelines for suppliers about how to declare materials in IMDS are defined in Veoneer IMDS Reporting Guidelines. This guideline is also providing instructions about specific company ID's for different Veoneer companies.

Substance Use Restriction

The substance use restrictions are defined by the Veoneer Standard VS005 (Substance Use Restrictions).Certain substances (ref.: VS005; Declarable, Restricted and Forbidden Substances List are classified as Declarable, Restricted or Forbidden. Materials, components and products containing substances classified as forbidden must not be used. Restricted substances must not be used for certain applications or projects and can be subject to sudden phase-out requirements.

The U.S. Securities and Exchange Commission (SEC) has finalized rules requiring publicly traded manufacturing companies to report if their products contain metals derived from certain minerals defined as "Conflict Minerals". For this reason, suppliers shall conduct due diligence of their supply chains to determine if any of the products supplied to Veoneer contain Conflict Minerals. Further requirements regarding Conflict Minerals are defined in VS 5 (Ref VS005 and VS005 Appendix C - Veoneer Policy on Conflict Minerals). Veoneer plans to use the web-based tool by iPoint as our primary tool to collect and analyze information submitted by the suppliers. This tool has been developed under the lead of the US Automotive Industry Action Group (AIAG).

Suppliers to Veoneer companies in Europe must meet the requirements under the European Regulation on Chemicals, REACH. Communication through the supply chain is obligatory. For more information about REACH, see AIG, Automotive Industry Guideline on REACH, published on the ACEA website (http://www.acea.be/).

Output from Supplier:

- Installation and implementation of an environmental management system according to ISO 14001.
- Communication of their own climate policy with timely defined objectives and reporting of their carbon emissions.
- IMDS declaration for all materials.
- If applicable: Pre-registration/registration of chemicals to ECHA (European Chemical Agency) via the REACH-IT portal on the ECHA website (http://www.echa.europa.eu/).
- If applicable: Due diligence to see origin of Conflict Minerals.

Required Documents:

- PPAP including: Documentation of approved IMDS declaration as a ground rule. A confirmed IMDS declaration in case Veoneer has not responded to the IMDS entry.

- If applicable: Report in iPoint Conflict Minerals Reporting, or similar reporting tool, when requested by Veoneer.

Reference Documents:

- IMDS (http://www.mdsystem.com)
- VS005 (Substance Use Restrictions)
- Veoneer's Environmental Policy
- Veoneer Climate Policy
- ISO 14001:2015 Environmental management systems-Requirements with guidance for use
- VSM-General Requirements/Specific Requirements/Quality-PPAP
- Veoneer IMDS Reporting Guidelines
- AIG (http://www.acea.be/)
- ECHA (http://www.echa.europa.eu/)
- The Conflict Minerals Act

2.1.3 Personal Data Statement

Veoneer is also taking care about your **Personal Data**, and you can read more in the below Notice :

- Veoneer's Privacy Notice for Suppliers

Questions and queries

If you would like further information about our processing of your personal data, your rights, including rights about access to data and correction of inaccurate data, please contact your contact person with us or send an email to dataprotection@veoneer.com.

You can also contact our **Data Protection Officer** via email to leo.nobile@veoneer.com.

If you find that our processing is in breach of this Notice or applicable laws, please feel free to contact us but also know that you can always lodge an official complaint with the competent authorities. The Lead Supervisor Authority for Veoneer Group is in Sweden (datainspektionen@datainspektionen.se)

2.1.4 Commercial Terms & Conditions

Commercial Terms & Conditions for Direct Material

Terms & Conditions for Direct Material - VNE-544 (Rev.April 2022)

Commercial Terms & Conditions for Indirect Purchasing

The English version prevails over any translations

English

Terms_and_Conditions_for_Equipment_GIPUE_English.pdf

Terms_and_conditions_for_Goods_GIPUG_English.pdf

Terms_and_conditions_for_Logistics_GIPUL_English.pdf

Terms_and_conditions_for_Services_GIPUS_English.pdf

Chinese

Terms_and_Conditions_for_Equipment_GIPUE_Chinese.pdf

Terms_and_conditions_for_Goods_GIPUG_Chinese.pdf

Terms_and_conditions_for_Logistics_GIPUL_Chinese.pdf

Terms_and_conditions_for_Services_GIPUS_Chinese.pdf

French

Terms_and_Conditions_for_Equipment_GIPUE_Français.pdf

Terms_and_conditions_for_Goods_GIPUG_Français.pdf

Terms_and_conditions_for_Logistics_GIPUL_Français.pdf

Terms_and_conditions_for_Services_GIPUS_Français.pdf

Japanese

Terms_and_Conditions_ for_Equipment_GIPUE_Japanese.pdf

Terms_and_Conditions_ for_Goods_GIPUG_Japanese.pdf

Terms_and_Conditions_for_Logistics_GIPUL_Japanese.pdf

Terms_and_Conditions_for_Services_GIPUS_Japanese.pdf

Korean

Terms_and_Conditions_for_Equipment_GIPUE_Korean.pdf

Terms_and_Conditions_for_Goods_GIPUG_Korean.pdf

Terms_and_Conditions_for_Logistics_GIPUL_Korean.pdf

Terms_and_Conditions_for_Services_GIPUS_Korean.pdf

Addendums

Addendum to T&C for Services_ EMEA_ 0817.pdf

2.2.1 Quality - General

Purpose:

To explain the Veoneer specific quality requirements in addition to the requirements included in the ISO 9001 and IATF 16949.

Input from Veoneer:

- Veoneer Supplier Manual (VSM)
- Veoneer Standards referred to in the VSM

Requirements:

1. Responsibility

The supplier has the full responsibility to set up and maintain an effective, operating quality system ensuring that the supplier, their sub suppliers and outsourced processes/services are under control and capable of developing and manufacturing materials/components and providing services which consistently conform to all Veoneer requirements. This includes assessing what methods and actions are necessary and the effectiveness of those actions to address the risks and opportunities in the supplier's value stream. This also includes the control of externally provided products, processes and services as follows:

- Shall determine type and extent of controls to be applied and verification activities
- Shall determine evaluation, selection, monitoring of performance and re-evaluation
- Retain records
- Provide external providers with requirements including competency/qualification
- Organization shall control and monitor providers performance
- Ensure externally provided processes remain in control of QMS

2. Quality system

Veoneer requires compliance and evidence according to ISO 9001, the AIAG-Manuals PPAP and APQP, the VSM and eventual full compliance to IATF 16949.

Veoneer Suppliers must have third-party certificates to the current version of ISO 9001 or IATF 16949. Suppliers shall have a plan to obtain IATF 16949 certification. Risk analysis shall be used to document the criteria for determining the need, type, frequency and scope of second party audits and retain records of audit reports.

Suppliers should have management reviews to understand and assess the risks of their products and work to improve the risks.

3. Advanced 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 overview (see Training). Each identified activity shall be planned and included in the supplier APQP process.

These activities shall be documented by the supplier in the S-APQP project created by Veoneer SQ and in the supplier project plan. The results from each activity during the project shall be made available to Veoneer on request. The supplier must report progress and the current status of all projects through the application of Advanced Quality Planning techniques and use Veoneer related IT application (references: SQP IT application in VPP (see Training) and the AIAG-Manual APQP).

4. Supplier PFMEA Go, See & Fix

The "Supplier PFMEA Go, See & Fix" is an activity with the purpose to improve the quality of our products by

- evaluating PFMEA failure modes
- comparing related prevention and detection steps of the PFMEA at the production line and related areas (from incoming material to outgoing product)
- verification of effectiveness all poka-yoke's and detection sensors in the production line.

A detailed description including questionnaire can be found in the Supplier PFMEA See & Fix Workshop.

5. Production Part Approval Process (PPAP)

The AIAG manual "Production Part Approval Process" (PPAP) defines the requirements for part submissions. To ensure compliance with our customer's requirements, the Veoneer expectations and specific requirements have been established as additional PPAP requirements (references VSM-Quality Requirements/"PPAP" and AIAG-Manual PPAP)

6. Supplier Change Request (SCR)

The SCR procedure applies to all suppliers. Veoneer engineering approval is required prior to implementing any change.

7. Special Characteristics Classification

The Special Characteristics Classification and resulting actions are defined and explained in

the Veoneer Standard VS052.

Results of control and verification of Special Characteristics will be directed by the using Veoneer facility. Special Characteristics passed down to supplier require them to cascade applicable requirements down the supply chain.

8. Product, process and system audit

Suppliers shall audit each manufacturing process to determine its effectiveness and select the types and extent of controls used to verify conformity to internal and customer requirements. Supplier shall have criteria to escalate or reduce their controls based on their performance and assessment of their product of service risk

8.1 General

Veoneer has the right to carry out product, process and system audits at the supplier and their sub suppliers. Veoneer can require that the suppliers carry out and report internal product process and system audit results. Supplier auditors should have the following minimum auditor qualification requirements:

- Automotive process approach to auditing including risk based thinking
- Applicable customer and suppliers specific requirements

- Applicable ISO 9001 and IATF 16949 requirements
- Applicable Manufacturing processes including PFMEA and Control Plan
- Applicable core tool requirements (SPC, MSA, FMEA, APQP, PPAP, etc.)
- Understanding how to plan, conduct, report and close audit findings

8.2 Special Process Assessments

Supplier shall evaluate the effectiveness of each of the applicable special processes listed and described in the associated VS069 manual.

Evaluation of VS069 shall be by self-assessment. The self-assessment shall be conducted annually, but may be repeated as needed. The self-assessment must be conducted as part of the supplier's internal quality audit.

If required, Veoneer authorized Representative may perform special process audits or review validation at the supplier site according to VS069. Supplier must assure that sub-suppliers have full control of any outsourced processes or services included for VS069 type activities which includes plating, coating, heat treat and other process/services done on supplier's products.

8.3 Sub-Supplier Process Assessments

Suppliers shall:

- Document standards and criteria to evaluate sub-supplier performance in order to ensure externally provided products, processes and services meet all requirements.
- Assure that sub-supplier indicators performance include customer disruptions at the receiving plant, yard holds and stop ships, special status notification & dealer returns, warranty, field actions and recalls.
- Evaluate the effectiveness of sub-supplier's QMS to assure that they are ISO 9001 and IATF 16949 compliant.

8.4 Sub-Supplier Outsourced Services

Suppliers shall:

- Have a process to identify, control and document their sub-supplier's processes for services rendered that can affect the final customer's products and assure they are ISO 9001 and IATF 16949 compliant.
- Examples of some services that can affect customer requirements, may include: sub-assembly, sequencing, sorting, testing, calibration services, warehousing, logistics, etc.

9. Dock Audit

The supplier shall complete a Dock Audit prior to shipping a manufacturing lot of product to Veoneer (reference section "Lot Definition" below).

Dock Audit is heightened inspection to review product/packaging prior to shipment to verify conformance to requirements listed on Dock Audit Report (DAR) supplied and agreed by Veoneer SQ.

A Dock Audit is a product inspection that is performed on product after the manufacturing activity and final inspection is completed (prior to shipment) done by supplier.

Supplier to perform DAR on every delivery and keep paperwork on file unless needed at Veoneer. DAR shall be therefore included in the supplier's control plan.

Veoneer randomly verifies the supplier DAR and other specified documents by check (physical/document) to insure that all of the agreed operations are performed in accordance with Veoneer requirements.

A Dock Audit Report (DAR) as a specific Inspection Standard shall be on required format and on file at the supplier's facility and available upon request by the Veoneer using facility. Dock Audit Report (DAR)

The Dock Audit and DAR requirements will be provided to the supplier by the using facility SQ during the Supplier Quality Project or serial production.

Raw Material Certifications are to be retained by the supplier (reference "Document Control and Records") and available upon request by Veoneer.

10. 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 there is 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.

The above annual layout inspection standard is becoming a global, mandatory requirement for all supplier products where purchase orders is placed after the 31st of December 2004. Before that date Veoneer encourages suppliers to conduct the annual layout on existing and new products.

11. Product Safety, Liability and Warranty

The supplier is responsible for 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.

All non-conforming materials, components, products and services can cause product safety, liability and warranty issues that will be claimed against the supplier.

Therefore all supplier staff members, who are responsible for or working with instructions related to product quality and performance, must be educated and understand the principles of product safety, liability and warranty. Supplier must also consider capabilities of and constraints on existing resources and what is needed from external providers.

The supplier must introduce adequate systems of control, 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.

12. Product Status and Traceability

The supplier 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.

13. Lot / batch definition

If nothing else is specified, the suppliers 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)

14. 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 IATF 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

15. Corrective Action

The Veoneer expectations regarding problem solving are defined and explained the Veoneer Supplier Quality Specification SQPS-063 and in the VSM-Main block "The product Life Cycle with Veoneer"/"Complaint Reporting and Resolution"

16. Continuous Improvement

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-Main block "The Supplier Life Cycle /Continuous Process and Cost Improvement" and VSM-Main block/ "Supplier Lifecycle"

All electronic component suppliers are required to implement all Methods and Tools described in AEC Q004 as appropriate. In addition, for semiconductor devices, the zero-defect strategy must include a particle (defectivity/ latent defect) management and improvement strategy using state-of-the-art inspection tools, designed with the resolution most capable for the supplied technology.

17. Reference documentation

Any document used as a reference document in the VSM, refers to the latest valid revision.

Output from Supplier:

- Acknowledgement of acceptance of VSM (Veoneer Supplier Manual).
- Third party Quality System certification or plan for first time certification to reach ISO 9001 or IATF 16949.

Required Documents:

- VSM Supplier Acknowledgement Letter
- Third party Quality System certificate or documented plan to reach ISO 9001 or IATF 16949 certification.

Reference Documents:

- S-APQP Overview
- VS004 (Product Traceability)
- VS004 Appendix 1b - Traceability Flow chart (Supplier Example)
- VS004 Appendix 2 - Traceability Classification Levels
- VS004 Appendix 3 - Traceability Data Requirements Charts
- VS052 (Product Characteristics Classification)
- SQPS-063 (Problem Management & Lessons Learned Process)
- VS069 (Special Processes - Requirements and Assessments)
- VS069 - Heat Treat Assessment File
- VS069 - Plating Assessment File
- VS069 - Coating Assessment File
- VS069 - Welding Assessment File
- VS069 - Soldering Assessment File
- VS069 - Crimping Assessment File
- VS104 - FMEA
- Dock Audit Report template
- IATF 16949 (Quality Management Systems)
- ISO 9001 (Quality Management System)

- **AIAG manuals** (obtainable e.g. from Carwin Continuous Ltd. Unit 1 Trade Link, Western Ave, West Thurrock, Grays, Essex, England (Tel. +44-1708861333, Fax +44-1708867941) and on internet address www.asq.org/9000 or www.aiag.org):
    - PPAP (Production Part Approval Process)
    - IATF 16949 Automotive Quality Management System
    - APQP (Advanced Product Quality Planning and Control Plan)
    - SPC (Statistical Process Control)
    - MSA (Measurement Systems Analysis)
    - P-FMEA (Process Failure Mode and Effects Analysis)

2.2.2 Quality – PPAP

Purpose:

To explain Veoneer specific instructions concerning the AIAG PPAP requirements

Input from Veoneer:

- PPAP request
- Veoneer released drawings and specifications
- PPAP checklist, if required by Veoneer.

Requirements:

General:

- The default level for PPAP submissions is 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.
- All documents shall be in English.
- 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
- The PPAP approval is not a production nor a delivery signal. The supplier shall wait for further delivery information/schedules from the Veoneer receiving plants. Reference VSM-Quality Requirements/"PPAP"
- In the event that another Veoneer plant plans to place orders for a part which already has an Veoneer PPAP approval, the PPAP release process shall not be repeated. A supplier PPAP approval by one Veoneer plant is also valid for all other Veoneer plants. The (approved) PPAP documentation may be requested by Veoneer just to confirm the original approval.
- Re-submitted samples following rejection must be accompanied by all relevant documentation as required for the original PPAP samples.

PPAP basic requirements for each item:

1. Design Records of Saleable Product

The supplier shall include 2-dimensional controlled copies of the design records. The records include component drawings, product specifications and hardware / software specifications.

1.1 IMDS-Declaration of Material (done in IMDS database)

Documentation of an approved IMDS declaration. Material composition is declared within IMDS and sent to Veoneer through the IMDS system. Documentation of an approved IMDS declaration shall be included within the PPAP package. As a consequence, the supplier shall complete the IMDS entry in the IMDS database a reasonable time period before the agreed PPAP submission date. This procedure will give Veoneer the opportunity to approve the IMDS entry prior to the supplier's PPAP submission date. In case Veoneer does not respond to the IMDS declaration before supplier's PPAP submission date, it is sufficient for the supplier to submit only the IMDS entry confirmation with the PPAP package. PPAP approval can only be done with an approved IMDS Declaration. (IMDS Reporting Guideline)

Since the IMDS declaration is a full declaration of materials, the absence of forbidden substances will be confirmed by the IMDS declaration. (Ref. VS005 and VSM General Requirements/General/Environment).

2. Engineering Change Documents

The supplier shall include any authorized engineering change documents not yet recorded in the design records but implemented in the product, part or tooling. (Supplier Change Request)

3. Customer Engineering Approval

If samples are evaluated by Veoneer e.g. form, fit or function, the approval and comments shall be documented. Samples shall be delivered to Veoneer for approval (Ref. AIAG PPAP Manual - ESA form)

4. DFMEA

If the supplier is design responsible, the supplier shall include their reviewed and approved D-FMEA.

Ensure all CC/SC characteristics have been identified and included from the design records and that actions have been defined and implemented during design phase. (Ref. VS052)

5. Process Flow Diagram

Flow diagrams that clearly describe the production process, steps and sequence. All steps in the manufacturing process shall be identified and keyed to the PFMEA and Control Plan. Traceability requirements confirmed by a traceability specific flow chart, (Ref. See VS004, VS244)

6. Process FMEA

Reviewed and approved P-FMEA for actual process, all steps shall be keyed to Flow Chart and Control Plan. Ensure all CC and SC characteristics have been identified and included from the design records and D-FMEA, including manufacturing process Special Characteristics and that actions have been defined and implemented. (Ref. VS052)

7. Control Plan

Production Control Plan, keyed to Process Flow Diagram and the P-FMEA. CC/SC and process special characteristics shall be identified and methods to control defined on the Control Plan. Any rework/repair operations shall be approved by Veoneer and included. Layout Inspection shall be included in control plan.

8. Measurement Systems Analysis Studies

Reports of MSA analysis performed on all test and measuring methods used for serial production as referenced in the Control Plan. Gauge R&R and measuring data shall be reported for all measuring methods used to accept product, and noted on control plan, including operators, material and environmental variations. Special attention shall be paid on methods used for verifying special characteristics CC/SC. Gauges funded or directed by Veoneer to be included. (Reference AIAG Manual MSA)

9. Dimensional Results

Reports of all dimensions and parameters documented in the design records for all cavities and each unique manufacturing process. The dimensional report must be keyed to the design record (ballooned).

The supplier shall respond to each drawing note and specification item and blanket statements are not allowed, test results and a “pass / fail” statement is required. Number of samples unless otherwise agreed is five (5).

10. Material / Performance Test Results

When design records or Control Plans specify chemical, physical, metallurgical performances and / or functional requirements the supplier shall be responsible to ensure that the tests are performed for all parts and product materials:

a) Functional measurement; Report of the products functional characteristics, e.g. electrical measurements, sensitivity, force etc.

b) Material performance; Report of the products material characteristics, e.g. structural strength, retention force, composition etc.

c) Validation results; Report of the products performance/reliability qualification, e.g. vibration, moisture, ESD, temperature etc.

For semiconductor devices and electronic components, tests according to AEC Q-standards is required. e.g. Q-100.

d) Characterization; Reports of characterization according to AEC Q-003 is required for semiconductor devices.

All testing shall be less than one (1) year old at the time of PPAP and serial status on product and process. Blanket statements are not allowed, test results and a "pass / fail" statement is required e.g. CFG 1004/1005.

11. Initial Process Capability Studies

The supplier shall provide a preliminary process capability study (Ppk) on all CC's and SC's.

Default requirement is Ppk studies required on all CC's and SC's as indicated on Veoneer drawings and related specifications. Reports of capability studies performed on defined process steps and product characteristics, > 100 parts from continuous production measured. For unstable processes corrective actions has to be implemented.

Processes to be controlled by statistical methods to be identified and reported in control plan. Special requirements applies for CC/SC. Test results and a "pass / fail" statement is required. See VS052.

12. Qualified Laboratory Documentation

If the supplier uses an external laboratory, this has to be accredited to ISO/IEC 17025 (or equal regional accreditation) and include their ISO/IEC 17025 Certificate in the PPAP. If an internal lab is used the supplier shall provide evidence of ISO/IEC 17025, IATF 16949 or ISO 9001 certification, as well as a lab scope which defines all the tests the lab is able to perform.

13. Appearance Approval Report

If the part has appearance requirements (i.e. structure and color), the supplier PPAP must include an Veoneer approved AAR. The supplier shall compile all surface data in one report for each part number. The AAR shall represent serial production. In case of required AAR the supplier has to retain released and signed off samples from Veoneer. The specific quality characteristics shall be clearly indicated on the samples or on an attached label. The amount of samples has to be defined with Veoneer.

14. Sample Product Parts

The supplier shall submit sample parts as requested by the using facility.

In case of required AAR the supplier has to retain released and signed off samples from Veoneer. The sample specific quality characteristics shall be clearly indicated on the samples or on an attached label. The amount of samples has to be defined together with Veoneer.

15. Master Sample Parts

Unless specified otherwise, the supplier shall:

- Identify three (3) parts identical to measured parts (see item 7 above), as Master Sample Parts and label them with Master Sample tags.
- retain two (2) Master sample Parts and submit one (1) with the PPAP submission.

16. Checking Aids

If requested by Veoneer, the supplier shall include in the PPAP submittal, any part specific Checking Aids. Checking Aids can include: fixtures, gages, models, templates, and/or

mylars used to accept product, as identified in the Control plan. The supplier shall certify that all aspects of the Checking Aid(s) agree with the part dimensional and functional requirements. The supplier shall provide for preventive maintenance for any checking aids for the life of the part.

17.1 Approved VS005-Waiver Request

The submission requirements of this chapter are only applicable, if materials are designed or chosen by the supplier:

For any materials, components and products containing substances classified as forbidden (Ref. VS005: Declarable and Forbidden Substances List) the supplier must make sure that the Veoneer approved Waiver Request (Ref. VS005: Waiver Request Form for Forbidden Substances) is included in the PPAP package.

Note that the inclusion of the approved Waiver Request in the PPAP submission is to show the authorized use. The action to obtain this Veoneer authorization (approved Waiver Request) must take place prior to PPAP. (Ref. VS005 and VSM General Requirements/General/Environment).

17.2 Submission of VS 244 - label samples

The supplier shall submit a sample of serial representative labels properly filled out to verify its compliance to VS244 and any local requirements defined by the receiving plant, if requested by Veoneer. (Ref. AIAG, VS244)

17.3 Manufacturing Lot Traceability

The Supplier shall include a generic flow chart describing the product traceability system per VS004. This flow chart is to include their supplier traceability, receiving of material, production and shipping to Veoneer.

17.4 Special Processes Audits

If the Supplier is responsible for performing any "special process" per VS069 such as heat treating, plating, coating, welding, soldering or crimping, they are responsible to ensure a self audit or an Veoneer sponsored audit is performed each year. Results of the latest audit are to be submitted with the PPAP.

17.5 Packaging Instructions

Include copy of the packaging instructions if required.

17.6 Tool Asset Form

Check if a copy of the Tool Asset Form was sent to the proper party / location (if applicable).

18. Part Submission Warrant (PSW)

Completely filled out PSW, PPAP submission level is 3 unless otherwise directed by the Veoneer using facility. The supplier declares that all product and process requirements are fulfilled, unless otherwise stated. Sub-supplier PSWs to be available for review upon request. The PPAP is approved when the supplier receives a copy of the approved PSW.

19. Bulk Material Requirements (BMR) Checklist:

The supplier shall include a BMR checklist if it is required for bulk material.

Signature Blocks:

The supplier representative responsible for PPAP shall sign the PPAP.

Output from Supplier:

PPAP (Ref. VSM - General Requirements/ PPAP)

Required Documents:

As defined in VSM - General Requirements/ (PPAP)

Reference Documents:

- AIAG manuals
- VSM General Requirements/ Specific Requirements/ Quality - PPAP
- VSM General Requirements/Specific Requirements/ Logistics
- VSM General Requirements/General/Environment
- VS004 (Product Traceability)
- VS004 Appendix 1b - Traceability Flow chart (Supplier Example)
- VS004 Appendix 2 - Traceability Classification Levels
- VS004 Appendix 3 - Traceability Data Requirements Charts
- VS005 (Substance Use Restrictions)
- VS052
- VS 244
- VS 244 Appendices: see VSM Section 6.2 Templates
- Automotive Electronics Council (AEC) Manuals
- Supplier Change Request

2.2.3 Project Management

Purpose:

- To inform about the Veoneer requirements on the supplier's:

1. Project Management System.
2. Personnel capabilities and resources in project supporting departments.
3. Engineering- and project supporting equipment.

- Close and frictionless project collaboration between suppliers and Veoneer is a key success factor. Project collaboration is supported by two main columns:

Professional project management processes on both sides, structured collaboration processes and well defined interfaces. Regular meetings and effective communication.

Input from Veoneer:

Project specific inputs are defined in the "Component and Software Life Cycle". If any project inputs are missing, the supplier shall pro-actively request missing information. If missing inputs compromise the project time line, the supplier shall inform the responsible buyer immediately in writing.

Requirements:

1. Project Management System

1.1 General Requirements

The supplier defines implements and maintains a PM-System with procedures for project teams and management, which describe how projects are run and controlled. These procedures must be incorporated into the suppliers quality management system. The PM-System must focus on risk and problem avoidance through early risk and problem detection and management.

Project Team:

In accordance to IATF 16949 supplier projects shall be driven by an interdisciplinary team and lead by a project leader. The suppliers management shall assign to the project team the full responsibility and competence for the defined project tasks and results. The project team shall ensure that all end-of-phase milestones, hereafter called "Tollgate", requirements are met prior to a tollgate review.

Project workflow:

Every supplier project must follow a defined, supplier specific workflow, which - in accordance with the IATF 16949 requirements - shall be separated into different (project) phases.

Example:

Veoneer's VPDS (Veoneer Product Development System) Workflow consists of five phases and five Tollgates (TG).

The supplier shall ensure continuous project synchronization with Veoneer and sub-suppliers.

Tollgates (TG) :

A "Tollgate" shall end each defined project phase. A Tollgate is a significant event marking the progression of the supplier project. A Tollgate requires a Tollgate review and approval to pass. The supplier Tollgate reviews require participation of the executive management responsible. It's recommended to include the Managing Director and the functional management responsible. To structure the Tollgate Reviews, the supplier shall synchronize the project plan with actual project results (based on project QCD (Quality/Cost /Delivery). Tollgate dates shall be fixed dates (milestones) controlled by the project plan.

Language:

The project plan, the APQP (Advanced Product Quality Planning) report and submitted test, PPAP (Production Part Approval Process) and other documentation must be in English.

Project and Design Changes

The supplier shall install procedures to control project and design changes according to IATF 16949 requirements. For all changes, which impact the project timing, the project

synchronization has to be repeated and the Project Plan and S-APQP-plan has to be updated.

In case of any major risks or actual QCD-target (Quality/Cost/Delivery) conflicts, Veoneer has to be informed immediately in writing and an action plan has to be submitted.

1.2 Requirements on Supplier Development Processes:

The Supplier Development Process shall contain the product/component development process (if applicable) as well as the manufacturing process development.

To successfully run a project, the supplier defines in the Supplier Development Process all project tasks and their relations.

1.2.1 Supplier Development Process

The Supplier Development Process shall be based on:

- The supplier, sub-supplier, technology, tool and manufacturing process specific project tasks. Project tasks, their planning, realisation and review in the following areas must be considered in the Suppliers Development Process:
    - Programme and Resource Management
    - Cost Controlling
    - Product-, Process- and Tool Development
    - Manufacturing
    - Logistic (incl. Packaging)
    - Purchasing and Sub-Supplier-Management
- The Advanced Product Quality Planning (APQP) project activities in the 'S-APQP & PPAP management in PLM' using 'SQP IT application in VPP' (see Training). Reference is also the AIAG-Manual APQP.
- The defined supplier PM-System and its project phases and Tollgate-reviews.
- The Veoneer project requirements described in the VSM main block "Component and Software Life Cycle"".
- The project related IATF 16949 requirements.

- The AIAG-Manual PPAP.

1.2.2 Supplier Standard-Project-Plan

- The Supplier Development Process shall be defined through a supplier specific Standard-Project-Plan.
- The supplier's Standard-Project-Plan describes how the project tasks are related to each other. The Standard-Project-Plan shall be a general plan not taking any specific product into consideration. It shall show and reflect the task relations with the least amount of risk. It must focus on risk and problem avoidance through early problem detection and risk management. This must include the use of Risk-Analysis- and FMEA-methods.
- The Standard-Project-Plan shall case by case be adapted to every new project, as defined by Veoneer and to be used for all Veoneer projects. The project oriented, adapted Standard Project Plan is then called Project Plan.

2. Personnel capabilities and resources in project supporting departments

- Personnel capabilities and resources in project supporting departments must be adequate to the assigned tasks.
- Project personnel resource planning shall also consider, that Veoneer expects project accompanying, regular meetings at Veoneer's Design- and Production facilities.
- Project personnel training must be traceable and should -beside functional knowledge and qualifications- cover:
    - PM- Methods and tools
    - Project Planning Software training (e.g. MS-Project)
    - APQP method and tools
    - VE/VA-methods (Value Engineering and Value Analysis)
    - P-FMEA
    - Statistical Methods
    - PPAP
    - CAD-training
    - VSM-training (including referenced Veoneer Standards)

- D-FMEA, DOE or similar tools (if product design is a supplier responsibility)
- Veoneer product training (request Veoneer support, if necessary)

3. Engineering- and project supporting equipment

- The supplier must have available a CAD-Terminal and appropriate CAD-software to support product design and to exchange and edit drawings and 3D-Models with Veoneer. Specific CAD-software on Veoneer request. Note: The supplier should be prepared to receive drawings and specifications through the VPP (Veoneer Partner Portal).
- When electronic CAD data (3D-Models and drawings) are submitted to the supplier, it is the native format in which it was originally designed, this is considered as the master data. Any translations done on this data is the supplier's responsibility. If re-submission of the data to Veoneer is required, the supplier is responsible for the integrity of the data.
- Appropriate project planning software (preferable MS-Project) is to be used for all Veoneer projects. The supplier's Standard-Project-Plan shall be reproduced by the software and through that available for project specific adaptations.
- The supplier shall provide appropriate test- and measurement equipment and capacity. At least all tests and measurements specified on drawings and specifications must be executable. External partners may be used, but in-house capacity is preferred.
- A prototype- and prototype tool shop should be available for quick and flexible prototype and prototype tool manufacturing. External partners may be used, but in-house capacity is preferred.

Output from Supplier:

General:

- PM-System procedure implementation.
- Standard-Project-Plan implementation.
- Adequate personnel capabilities and resources in project supporting departments.
- Required engineering- and project supporting-equipment as specified above.

Project specific:

- According to VSM main block "Component and Software Life Cycle"
- Project Plan
- S-APQP Plan
- Project/Launch performance, products and processes reaching the QCD-targets

Required Documents:

- PM-System documentation (as part of supplier Quality Management Manual)
- Standard-Project-Plan (reference is point 1.2. above)
- The 'S-APQP & PPAP management in PLM' process shall be used (see S-APQP overview) supported by the 'SQP IT Application in VPP (see Training).
- Project specific documents according to VSM main block "Component and Software Life Cycle"

Reference Documents:

- VSM main block ""Component and Software Life Cycle"
- VSM main block "Supplier Life Cycle"
- IATF 16949
- ISO 9001
- AIAG-Manuals APQP and PPAP

2.2.4 Manufacturing Systems

Purpose:

- To prepare a successful future for Veoneer and their suppliers, Veoneer's suppliers shall utilize a lean manufacturing system within all of their facilities resulting in the best value and lowest risk products for the end customer.
- To inform new and existing suppliers about Veoneer's supplier manufacturing system requirements and recommended tools the supplier should use in its manufacturing system.

Input from Veoneer:

- Veoneer provides access through VSM to the VES-booklet (Veoneer Excellence System) and a list of reference literature.
- Initial introduction and awareness training coordinated through direct Veoneer purchase contact:
    - Management training
    - VPS booklet training, concepts and support tools.

Requirements:

- The supplier shall implement a lean manufacturing system. (Introduction of lean manufacturing is also part of Veoneer's VSDP (Veoneer Supplier Development Programme)
- The supplier shall nominate a lean manufacturing coordinator/champion.
- New and existing suppliers, who have not implemented a lean manufacturing system yet, shall establish a lean manufacturing implementation plan.
- Veoneer recommends to conduct an initial VES Assessment to establish current level and set priorities.
- The supplier shall identify potential manufacturing process improvements. The supplier is encouraged to use the VES Assessment Standard for that purpose as well.
- The supplier should implement internal workshops on the concepts and tools as follows:

The 8 VES concepts are:	VES-tools are for example:
Quality First	5 Why
Team Work	Ishikawa diagram
5S	SPC
Standards	Quality Matrix
Muda (Waste) Elimination	Problem Solving Process
TPM	PDCA-wheel
JIT	FMEA
Employee involvement	Pareto Diagram
	Six-Sigma

- Continuous improvement workshops shall be under a programme of regular management review of status, priorities and resources.
- The supplier shall implement lean manufacturing indicators with defined targets. Veoneer recommends the use of a QOS (Quality Operating System).

Output from Supplier:

- Supplier requests training assistance from Veoneer on demand.
- Productivity/operational efficiency improvements
- Cost reduction proposals
- Reduced process variation
- Reduction of inventory
- Lean manufacturing training- and implementation- plan and -status
- Implementation of lean manufacturing indicators

Required Documents:

- Lean manufacturing training- and implementation- plan and -status
- Documentation may be required on any or all aspects on a routine or occasional basis depending upon supplier performance.

Reference Documents:

- VSM-Product-Life Cycle/"Continuous Process and Cost Improvement"
- VSM-Veoneer Supplier Development Programme
- SQPS-061 (Presentation of Continual Improvement Process)

2.2.5 Logistics

Purpose:

To define Veoneer Logistic Requirements: Packaging, Labelling, Contract Requirements, Forecasts and Orders, EDI, Deliveries, and Logistics Audits.

Input from Veoneer:

- Forecasts and Orders
- Packaging Specifications.
- Veoneer Partner Portal supplier login and password for:

- access to local Logistic Requirements (VSM/Local Documents)

- access to WEB SUPPLY

Requirements:

In this document the word "shall" indicates a requirement and the word "should" indicates a recommendation.

1.Scope

Veoneer Logistics Requirements are applicable to all Veoneer suppliers and their sub-contractors.

Additional local logistics requirements are posted on the Veoneer Partner Portal.

Failure to comply with any Veoneer Logistic Requirements should start a Non-Conformance Report (NCM), and the resolution process that follows the VSM "Complaint Reporting and Resolution".

This will affect the supplier's On Time Parts Index (OTP) as described in the Veoneer Standard Supplier Rating VS051.

2.Packaging

2.1.General

All packaging shall be according to VS246 and import/export regulations, and approved by Veoneer prior to any delivery. Packaging might be evaluated by qualification tests upon Veoneer's request.

2.2.Packaging Specification

Veoneer and the supplier shall agree upon packaging in the Contract Review and S-APQP. The packaging shall be specified in the Packaging Specification. Information related to packaging definition and validation shall be uploaded into the SQP Project using 'SQP IT application in VPP' (see Training).

It is the supplier's responsibility to ensure delivery of non damaged parts according to the Packaging Specification and to inspect the packaging with regard to suitability before using it.

2.3.Returnable packaging

Veoneer favours the use of re-usable standard packaging where applicable.

Veoneer or the supplier shall buy or rent a limited quantity of packaging. If Veoneer owns the packaging the supplier may be charged rent for exceeding quantities.

The responsibility of maintenance and cleaning is to be defined in the Packaging Specification. If not specified, it is the supplier´s responsibility.

Returnable packaging assigned for the defined supply chain is to be used exclusively for Veoneer supplies. In the event of missing or damaged quantities Veoneer shall be notified immediately.

Veoneer may debit the supplier's account a replacement fee if packaging owned by Veoneer is missing or is damaged due to supplier negligence.

2.4.Disposable Packaging

Disposable packaging is only to be used when considered economically beneficial or when regulations require it.

Any form of disposable packaging (including sub-packaging) shall comply with all international and local recycling regulations. Cartons and pallets shall be of sufficient quality to protect goods in transit.

2.5.Changes of Packaging

Changes of packaging are only possible after agreement from Veoneer and shall be implemented by the supplier after receiving a new Packaging Specification or packaging amendment documentation.

2.6.Substitute Packaging

In the event that substitute packaging cannot be avoided Veoneer shall be sent a written deviation request prior to the delivery. Veoneer shall consider the effects of the deviation and estimate the extra costs from the non-standard process that may be debited to the supplier's account.

2.7.Packaging weight and size

Individual packaging weight and size shall be according to the Packaging Specification.

2.8.Packaging storage

Packaging shall be stored and maintained dry, clean and usable.

2.9. Pallets

All pallets shall be in perfect condition to ensure stackability and usage without risk.

For intercontinental transports pallets and collars shall comply with ISPM 15.

2.10.Transportation

Pallets shall during transportation be loaded and secured to avoid any kind of damage. Metallic straps are forbidden.

For continental and domestic transports plastic wrapping should be avoided if possible. For intercontinental transports plastic wrapping should be used if applicable.

2.11.Markings

All appropriate marking shall be compliant with local regulations.

3.Labelling

Correct labelling is the supplier's responsibility. All labels shall be in English to avoid any confusion.

To secure traceability correct labelling is mandatory on each box and on both sides of each individual pallet.

The supplier shall print labels according to the Veoneer Standard Package and Transport Label / VS244. It includes requirements on approved label layouts, sizes, and the information the labels shall contain. It also declares how to handle mixed components on pallets.

All suppliers can print correct labels by using the WEB SUPPLY application through the Veoneer Partner Portal.

Labelling shall be approved through the PPAP process.

Pre-PPAP samples have to be marked with an orange sticker (Pre-PPAP Label)(Pre-PPAP Requirements)

4.Contract Requirements

4.1.Capacity Planning

Capacity planning of tools, production lines, and personnel training needs to be anticipated, achieved and checked by the supplier to meet the required volumes, based on forecasts given by Veoneer.

If the forecasts or orders are showing demands higher than the supplier's capacity, the supplier shall take immediate contact with the local Veoneer Logistic Department and propose an alternative supply solution.

A defined reserve of production capacity shall be available within a defined lead time at the supplier upon Veoneer request. This should be specified and agreed in the Contract Review and verified through a Run at Rate.

4.2.24 hours emergency phone number

The supplier shall have English speaking contact persons, and a 24 hours emergency phone number. This contact(s) shall be communicated to the Veoneer Lead Buyer and the local Veoneer Logistic Department.

4.3.Scheduling serial deliveries

Serial production and deliveries shall start only after PPAP approval or interim PPAP approval, and when a valid forecast and order release are available unless specifically required by Veoneer.

4.4.Product Changes and Phase in/out operations

In co-operation with Veoneer the supplier has a responsibility for avoiding obsolete material during phase in/out operations and engineering changes.

Focus areas are:

- Lead time / minimize batch sizes.
- Constantly monitor changes.
- Intensify contacts with the local Veoneer Logistic Department.
- If necessary modify the Packaging Specification.

5.Forecasts and order releases

5.1.General Information

Veoneer strives for giving the supplier as frequent and reliable information as possible. The basis for Veoneer planning is: customer forecasts and orders, and a levelled production. The planning is done locally by each Veoneer plant.

A new forecast or order release shall always replace the previous release. It is the supplier's responsibility to review the forecasts and order releases and advise Veoneer in case of problems.

5.2.EDI or WEB SUPPLY

Veoneer enforces the use of EDI. If not EDI capable the supplier shall use the WEB SUPPLY application through the Veoneer Partner Portal (VPP).

EDI is the preferred communication tool for Veoneer and will be rolled out to the Veoneer plants over time.

Veoneer communicates with EDI as described in the Veoneer Standard EDI Messages (VS242/1; 2; 3; 4).

5.3.Forecasts and Order Releases

A forecast is a tool for the supplier to plan for material, production and future deliveries. Forecasts and delivery schedules are communicated to the supplier by DELFOR (EDI) as described in VS 242/1.

An order release is a request from Veoneer for a specific material and quantity to be delivered to Veoneer at a defined time. Order releases are sent to the supplier for delivery and are communicated to the supplier by DELJIT (EDI) as described in VS 242/3.

During roll out of EDI and WEB SUPPLY by Veoneer, order releases may be sent to the supplier by fax or e-mail.

6.Deliveries

6.1.General delivery compliance

Veoneer requires 100 % conformance to delivery and service requirements from all suppliers. It is the supplier's responsibility to ensure that goods are available at the right location on time required by each Veoneer plant, even in the case where Veoneer has defined the forwarding agent. In all cases, the supplier shall make arrangements to have material shipped to meet all required dates even if the supplier is on holiday or shut down. The On Time Parts rating is described in the

Veoneer Standard Supplier Rating VS051.

It is the supplier's responsibility to inform the local Veoneer Logistic Department immediately of any potential difficulties in meeting delivery schedules to avoid production downtime and/or premium freights.

Veoneer reserves the right to reject any delivery that does not conform to the logistics requirements. Failure to comply may also result in Veoneer debiting the supplier's account for all incurred costs.

6.2. Premium freights

In the event that premium freights cannot be avoided, the type of transport should be adapted to the emergency situation. The local Veoneer Logistic Department shall receive all necessary information to be able to contact the transport driver at any time (e.g. Premium Transportation Authorization) and also be informed in advance of the estimated arrival time.

6.3. Deliveries according to FIFO

Veoneer Standard Product Traceability VS004 defines the supplier's manufacturing lot/batch size. Deliveries to Veoneer must follow the First-In-First-Out (FIFO) principle in respect to the oldest batch available.

6.4. Documents

Since payment is based on receipt of appropriate documents, a physical printed Delivery Note shall be attached with the delivered material. This documentation is mandatory and shall be 100% complete. The Delivery Note shall contain the necessary information described in VS242/2.

An electronic Delivery Note (DESADV) shall be mandatory practice for the supplier (to send) if required by Veoneer as described in VS242/2. In addition an electronic Invoice (INVOIC (self billing)) shall be mandatory practice for the supplier (to receive) if required by Veoneer as described in VS242/4.

7.Logistic Audit

Veoneer recommends the supplier to use the Logistics Evaluation Report issued by the Odette Organization (Material Management Optimization Guideline / Logistics Evaluation) for logistic audits.

Output from Supplier:

Acknowledgement of acceptance of VSM (Veoneer Supplier Manual) which includes:

- Packaging according to Packaging Specifications.
- Labelling according to VS244 (Package and Transport Label).
- Receive and send electronic messages according to (VS 242/1; 2; 3; 4).
- On Time Parts according to orders.
- Physical Delivery Note with the delivered material.
- Logistics documentation (e.g. delivery note, DESADV, EX1 export customs document).
- Logistics audits and associated improvement action plans.

Reference Documents:

- Packaging specification.
- Non Conforming Material Report (NCM)
- EDI Messages (VS 242/1; 2; 3; 4)
- Local Veoneer Logistics Specifications (VPP / Library / Documents / Regional Information...).
- VS004 (Product Traceability)
    - SQPS-004 Appendix 1b - Traceability Flow chart (Supplier Example)
    - VS004 Appendix 2 - Traceability Classification Levels
    - VS004 Appendix 3 - Traceability Data Requirements Charts
- VS 244 (Package and Transport Label)
- VS 244 Appendices: see VSM 6.2 Templates
- VS051(Veoneer Supplier Rating) / Appendix A (Supplier Rating Examples)
- Logistics audit (MMOG/LE – http://www.odette.org/html/home.htm)
- VSM ("Control Level Definition and Start of APQP-Process"), ("Contract Review Process"), ("Performance Review/APQP Closure"), ("Complaint Reporting and Resolution")

- Spare parts standard
- ISPM 15 (transportation of pallets and collars).

2.3 Supplier Registration

2.3.1 Package Direct Material

In order to complete the creation of a supplier in our information systems, we need to receive back from the supplier the Supplier Registration Package which contains the needed data to create its account.

The requested documents filled and duly signed have to be sent by e-mail to the contact at Veoneer supporting the supplier creation.

You can access to each document in the list below by clicking on the icon :

Supplier Registration Package - DIRECT MATERIAL			
Applicability	Item	Click to download	What to do ?
Mandatory	**Supplier Registration Form**	2	> Download & Fill the Veoneer form in English > Return
	Bank Account details	No Form	> Send document from your Bank

	Business Code of Ethics for Suppliers (VS319) – *Acknowledgement Letter*	2	> Read the § "Supply Chain" of the Code of Ethics for Suppliers > Download & Fill the Acknowledgment Letter in local langage > Sign & Return
	Veoneer Supplier Manual (VSM) – *Acknowledgement Letter*	2	> Download & Fill the Veoneer form > Sign & Return
	Insurance Certificate	No Form	> Send your Insurance certificate
	Quality Certificates *IATF 16949, ISO 14001, or others as applicable*	No Form	> Send your valid certificates, for each facility producing for Veoneer
Optional	**EDI Connection –** *PipeChain*	2	> Fill the form > Return
	Supplier Fact Profile	2	> Fill the form > Sign & Return > Send requested documents

Veoneer Commercial Terms & Conditions are available under section : 2. General Requirements / 2.1 General / 2.1.4 Commercial Terms & Conditions

Doing business with Veoneer in ...

On top of the global requirements, please find below the regional or country specific forms.

Europe	**e-Invoicing - BASWARE**	2	> Read & Register
America (US and Canada)	**IRS Form W-9** (For US Suppliers)	2	> Fill the form > Sign & Return
	IRS Form W-8BEN-E (For International Entities)	2	> Fill the form > Sign & Return
	EFT Authorization Form	2	> Fill the form > Sign & Return
Canada	**Veoneer Health and Safety Agreement**	2	> Fill the form > Sign & Return

2.3.2 Package Indirect Purchasing

In order to complete the creation of a supplier in our information systems, we need to receive back from the supplier the Supplier Registration Package which contains the needed data to create its account.
The requested documents filled and duly signed have to be sent by e-mail to the contact at Veoneer supporting the supplier creation.

You can access to each document in the list below by clicking on the icon :

Supplier Registration Package - INDIRECT PURCHASING

Applicability	Item	Click to download	What to do ?
Mandatory	**Supplier Registration Form**	2	> Download & Fill the Veoneer form in English > Return
	Bank Account details	No Form	> Send document from your Bank
	Business Code of Ethics for Suppliers (VS319) – *Acknowledgement Letter*	2	> Read the § "Supply Chain" of the Code of Ethics for Suppliers > Download & Fill the Acknowledgment Letter in local langage > Sign & Return

Optional	**Insurance Certificate**	No Form	> Send your Insurance certificate
	Quality Certificates *IATF 16949, ISO 14001, or others as applicable*	No Form	> Send your valid certificates, for each facility serving Veoneer
	Supplier Fact Profile	2	> Fill the form > Sign & Return > Send requested documents

Veoneer Commercial Terms & Conditions are available under section : 2. General Requirements / 2.1 General / 2.1.4 Commercial Terms & Conditions

Doing business with Veoneer in ...

On top of the global requirements, please find below the regional or country specific forms.

Europe	**e-Invoicing - BASWARE**	2	> Read & Register
	IRS Form W-9 (For US Suppliers)	2	> Fill the form > Sign & Return

America (US and Canada)	**IRS Form W-8BEN-E** (For International Entities)	2	> Fill the form > Sign & Return
	EFT Authorization Form	2	> Fill the form > Sign & Return
Canada	**Veoneer Health and Safety Agreement**	2	> Fill the form > Sign & Return

3.1.1 Project Support and Pre-Quotes on Request

Supplier support of early project phase:

Already before potential suppliers have started official projects, Veoneer expects them to serve the Veoneer project with information and support to facilitate Design for Manufacturing.

Veoneer starts its supplier selection process during this project phase.

Input from Veoneer:

- DRD (Design Requirement Documents) or product specifications
- Project information: Major project milestones
- Possibly: Request for quotation (use the Supplier Cost Breakdown (SCBD template)
- Target costs
- Information of documentation confidentiality, if any

Requirements:

- Conduct first project review (e.g. project timing, resource planning etc.)
- Conduct a first product review; e.g.
    - start Team Feasibility Commitment (TFC) (requirements understood ?, complete ?, achievable ?, applicable? and measurable ?)
    - give information about possible tolerances.
    - are proposed materials o.k. ? Are alternative materials more efficient ?
    - check previous experiences with similar product or process etc.

- Submit feedback to the requirements and any suggestions for improvements.
- Review target costs, submit feedback.
- Supplier respects confidentiality.

Output from Supplier:

The potential suppliers provide on request:

- First TFC (use TFC template on Veoneer concepts and ideas).
- Design and process consultation and expertise.
- Pre-quotes (part price, tooling , equipment) on concepts and ideas (use SCBD template).
- Lead times for concept realization.

Required Documents:

If requested:

- TFC - Template
- Supplier Cost Breakdown - Template
- Supplier Cost Breakdown - Example
- Supplier Cost Breakdown - Training

3.1.2 RFQ, Quotation and Feasibility (TFC)

Purpose:

- Provide detailed quotations and cost breakdowns based on actual and reviewed Veoneer specifications.
- Declaration of feasibility (Example: requirement not feasible counterproposal requested). "Feasibility" means: Requirements are understood, complete, achievable, measurable and risk is reviewed/minimized.

Input from Veoneer:

Project and delivery information provided through SCBD (Supplier Cost Breakdown):

- Drawings / CAD-models (Computer Aided Design), specifications, standards.
- Necessary Design-FMEA (Failure Mode and Effects Analysis) information.
- If the supplier has full or partial design responsibility: DRD (Design Requirement Documents), BOM (Bill of Material), necessary System-FMEA (Failure Mode and Effects Analysis) information.
- If requested by Veoneer: An audit at the supplier production site.

Requirements:

- Complete the Supplier Cost Breakdown (SCBD template).
- Complete the Team Feasibility Commitment (TFC - Template):
    - Listing the feasibility agreement status. Feasibility analysis to be signed by supplier and submitted to Veoneer with each quote. All open issues shall be documented by the supplier in the action plan.
    - TFC to include a commitment 'Feasible (PPAP without any deviations)' / 'Feasible with proposed changes if below listed concerns have been solved'.
- Complete "Packaging and Transportation Sheet" on Veoneer request.

Output from Supplier:

- Quotation (use SCBD template): part and tooling price, lead times, etc.
- TFC template

Required Documents:

- SCBD template
- SCBC template example
- SCBD (Supplier Cost Break Down) Training
- TFC - Template
- TFC Supplier Training
- Packaging and Transportation Sheet (on demand)

Reference Documents:

For the TFC:

- VS004 (Product Traceability)
- SQPS-004 Appendix 1b - Traceability Flow Chart (Supplier Example)
- VS004 Appendix 2 - Traceability Classification Levels
- VS004 Appendix 3 - Traceability Data Requirements Charts
- VS005 (Substance Use Restrictions)
- VS051 (Supplier Rating) / Appendix A (Supplier Rating Examples) VS 052 (Product Characteristics Classification), Appendix B (CC/SC list)
- VS244 (Package and Transport Label)
- VS244 Appendices: see VSM - Standards and Templates

3.1.3 Supplier Selection Supplier Project Start

Purpose:

- To award business to the supplier.
- To initiate the supplier's project start.

Early supplier selection should ensure, that the serial supplier's project involvement and cooperation in projects starts immediately.

Background for this is, that Veoneer needs and expects the Supplier's expertise and support to ensure, that the project, the product and process become optimized with regard to cost, quality, delivery feasibility and risk.

Input from Veoneer:

- After quotation review, Team Feasibility Commitment (TFC) and supplier selection: Confirmation of business award: e.g. Letter of intent / serial commitment.

Requirements:

Before the supplier is selected:

- Supplier shall have accepted the VSM (Veoneer Supplier Manual). VS051 performance will be received as part of the sourcing process (listed on Sourcing Board review) and management will make final decision for new business award after all applicable information is presented to the Sourcing Board.
- Supplier shall have completed the TFC, Major feasibility concerns and design change requests must be agreed on by Veoneer before supplier selection. (Reference: Step 2/VSM-Product-Life-Cycle).

After supplier selection:

- Suppliers may expect to receive either a “letter of intent”, a serial commitment or other from Veoneer.
- As a result Veoneer expects the supplier's commitment to start an official project supporting the milestones by providing the needed resources, services, capital, equipment etc. to meet the Veoneer requirements. For Project Management requirements, reference is made to the General Requirements/Specific Requirements/Project Management

Output from Supplier:

- Sign-off of TFC
- Commitment to latest status of TFC and action plan
- Identification of project leader and team
- Release of supplier project and start of project plan

Required Documents:

- TFC - Template

Reference Documents:

- VSM-Main block "General Requirements"

3.2.1 Control Level Definition and Start of APQP-Process

3.1 Sourcing Process
3.2 Launch Process
3.3 Serial Process
3.4 Service Part
3.1.3 Supplier Selection Supplier Project Start
3.2.2 Contract Review Process

Purpose:

- CLD (Control Level Definition): Veoneer is assessing and rating the project risk based on the selected supplier, the product and the process criticality. This is determining the level of control and follow-up from Veoneer and supplier side during the project, as defined in the "SQPS-927 CLD3 GUIDELINES".
- Launch the Product Quality Plan-process through the use of APQP (Advanced Product Quality Planning). APQP is a structured method of defining and establishing the minimum steps and requirements necessary to ensure that the product satisfies the Veoneer requirements and to assure that all required steps are completed on time.

Input from Veoneer:

- Information about the determined Control Level Definition (CLD) and resulting reporting requirements in SQP project in VPP (see Training) (Check 'SQPS-927 CLD3 GUIDELINES ')
- Veoneer key milestones.
- Support and participation (on request) in setting up and updating the supplier project time line synchronized with the Veoneer key milestones. (Project-Synchronization)
- S-APQP-reporting frequency.
- CC/SCs and preliminary drawings and specifications and the necessary D-FMEA (Design Failure Mode and Effects Analysis) information.

Requirements:

1. **For all projects - CLD 1, 2 and 3 :**

(Ref.: "SQPS-927 CLD3 GUIDELINES"):

- Establish the supplier S-APQP-process in 'SQP IT application in VPP' and the supplier project plan based on the synchronized project time line.
- Follow the project plan, the S-APQP-process and execute the project controlling using 'SQP IT application in VPP' in line with supplier internal and VSM (Veoneer Supplier Manual) requirements.
- Problem and potential risk analysis.
- In case of any problems or deviations of demands vs. expected results (risks for project's timing and/or quality) the supplier shall inform Veoneer immediately (in writing) and provide problem analysis and recovery plan proposal.
- Initiate and maintain continuous update of S-APQP tasks and deliverables using 'SQP IT application in VPP'.
- Report APQP-progress and submit the S-APQP-template according to defined frequency. Report APQP-progress by submitting S-APQP and PPAP deliverables according to expectations from CLD & PPAP levels submission directly in "SQP IT application in VPP"

2. **Additional S-APQP requirements for CLD 2 projects**

(Ref.:"SQPS-927 CLD3 GUIDELINES")

- The supplier and Veoneer shall conduct S-APQP review meetings.

3. **Additional S-APQP requirements for CLD 3 projects**

(Ref.:"SQPS-927 CLD3 GUIDELINES")

- The supplier and Veoneer shall conduct S-APQP review meetings and Go & See PFMEA activities as preventive actions at supplier site.

Output from Supplier:

For all projects:

- S-APQP established and reporting started using 'SQP IT application in VPP'.
- Supplier project plan shall be described and planned with SQ using 'SQP IT application in VPP'.

- Problem and potential risk analysis and recovery plan, if applicable.

Required Documents:

- SQP project tasks status updated by supplier in 'SQP IT application in VPP'.
- SQP project tasks deadline updated by supplier in 'SQP IT application in VPP'.

Reference Documents:

- AIAG-Manual APQP
- SQPS-927 CLD3 GUIDELINES(CLD)
- SQPS-935 SQP Handbook for Suppliers
- SQPS-918 S-APQP Overview
- VS 104 FMEA

3.2.2 Contract Review Process

Purpose:

- Contract, design and process review before serial/tool order to prevent problems, misunderstandings and to lower risks.
- Intention is to make sure the Veoneer requirements and specifications are met.
- To involve suppliers early enough to be able to introduce changes to improve QCD (Quality, Cost and Delivery). (before design freeze!)
- To agree on all technical and commercial aspects of the business.

Input from Veoneer:

- Project information from previous process steps.
- For CLD 2 and CLD 3 projects (Ref.:"SQPS-927 CLD3 GUIDELINES"), a Contract Review process is started by Veoneer and a review time plan is provided.
- Updates of drawings, specifications and standards.
- Delivery and packaging aspects, volumes, ramp-up, PPAP-requirements (Production Part Approval Process), special testing and gauging requirements (if any), VS 412 (Interim Inspection Plan).
- Veoneer or customer directed sourcing requirements, if applicable.
- Information from previous lessons learned with same or similar products and processes.
- Collaboration with supplier to resolve all feasibility and product review open issues.

Requirements:

1. **For all projects the supplier must ensure:**

- That all feasibility and product review open issues are resolved before serial order (e.g. tool order etc.).

- That updated Team Feasibility Commitment (TFC) and impact on product cost and timing for any design change is provided, when necessary.
- Review of own and Veoneer provided lessons learned with same or similar products and processes and definition of appropriate actions.
- Identification and preparation of material-, machine-, man-power- and other requirements to support the ramp-up plan.
- Compliance with Veoneer source directed requirements, if any.

2. For CLD 2 and CLD 3 projects **(Ref.:"SQPS-927 CLD3 GUIDELINES"),** a Contract Review process is started by Veoneer. The requirements for suppliers to actively support this process are:

- Appropriate supplier representatives participate in the review process and attend the meetings.
- Supplier prepares and provides necessary information (i.e. preliminary tool design and Process-Flow-Chart, process layout etc.) for the meetings.
- Actively support the supplier deliverables in the Contract Review Process (use the Contract Review - Template).
- Finalization and completion of Contract Review Process before serial order (e.g. tool order etc.) :
    - All Contract Review open issues should be closed.
    - For any open issues not closed an approved action plan, which supports the project time line shall be available.
    - Both parties (Veoneer and supplier) commit, agree and sign-off the "Contract Review - Template" -document.

Output from Supplier:

- Completed Feasibility Study process: All open issues from the TFC (Concern Action Plan) are resolved before Veoneer Design Freeze and serial order.

Required Documents:

- TFC - Template
- Contract Review - Template

Reference Documents:

- SQPS-927 CLD3 GUIDELINES (CLD)
- VS 005 (Substance Use Restrictions)
- VS 244 (Package and Transport Label)
- VS 244 Appendices: see VSM Standards and Templates

3.2.3 Prototype Order and Delivery

Purpose:

Prototype parts are parts used for Veoneer prototype builds, Design Validations or engineering evaluations.

Documented data is required to support further investigation and verification of final assembled product performance and capability over the whole tolerance range.

Input from Veoneer:

- Prototype purchase order including list of requirements (required level of prototype documentation, sample quantity, lead time, labelling, packaging, prototype drawing and specifications etc.).
- Feedback from Veoneer's prototype reviews and tests on request.

Requirements:

Suppliers chosen for prototype delivery shall submit prototypes with prototype documentation as requested by Veoneer.

Prototype Documentation may consist of the following, but not limited to:

- Cover page
- Dimensional Report
- Material Certificate
- Checking Aids (make a list of measurement equipment and gauges and reference to product characteristics).
- Test Results (use the QS-9000 form "Performance Test Result").
- Appearance Approval Report (use the QS-9000 form "AAR").

- Action Plan for deviations.
- Prototype parts shall use Pre-PPAP Labeling on outside and inner containers and as defined in VSM General Logistic Section. (Pre-PPAP Label)(Pre-PPAP Label Requirements)

The prototype manufacturing process should be controlled by a Prototype Control Plan.

For Prototypes, which do not meet the prototype drawings and specifications, the supplier shall clearly describe the deviations.

Prototypes shall be marked and traceable to the sample's manufacturing- and sub-component lots.

The prototypes should be (as much as possible) produced using serial technology and manufacturing process if not otherwise defined by Veoneer.

Further requirements should be defined at the time of prototype order.

Limit / margin / borderline parts on identified critical and significant characteristics (CC/SC) on request.

--> This is required to prevent quality and functional problems during the life time of the product related to normal lot to lot variation within the defined tolerances. The whole range of variation within the defined tolerances needs to be evaluated.

Output from Supplier:

- Prototype samples (incl. specific marking/labeling)
- Prototype documentation

Required Documents:

- Prototype-documentation (use the AIAG-Manual PPAP-templates) as defined through Veoneer`s prototype purchase order.

Optionally Veoneer standard forms can be used:

1. Prototype Sample Cover Page

2. SQPS-907 Dimensional Report
3. SQPS-904 Checking Aids
4. SQPS-912 Production Part Approval Material Test Results
5. SQPS-901 Appearance Approval Report
6. Action Plan for deviations

Reference Documents:

- AIAG-Manual PPAP (Production Part Approval Process)

3.2.4 Production-Trial-Runs

Purpose:

- To demonstrate that the process has the capability to produce products that consistently meet all drawing requirements and specifications at the requested production rate and to reduce product/process risks.
- To ensure that the supplier can successfully meet this requirement on time before SOP (Start of Production) Veoneer requires:
    - First-Production-Trial-Run
    - PPAP-Production-Trial-Run
    - Run at Rate
- To ensure, that the supplier can submit PPAP (Production Part Approval Process) on time, complete and "right the first time" the First Production-Trial-Run and implementation of resulting corrective actions before PPAP-Production-Trial-Run is required.
- Any deviation from the following rules/requirements needs a project specific approval by Veoneer.

Input from Veoneer:

- SQPS-412 (Interim Inspection Plan)

Requirements:

Depending on the defined "SQPS-927 CLD3 GUIDELINES":

- CLD 1 : Production-Trial-Runs and documentation is mandatory.
- CLD 2 : Production-Trial-Runs and documentation is mandatory and to be submitted.
- CLD 3 : as CLD 2 plus Veoneer participation at supplier's Production-Trial-Runs including Go & See PFMEA activities.

- The "SQPS-925 Production Trial Run Standard" lines out the timing requirements, the demanded Production-Trial-Run content, conditions and documentation.
- The length of time between the trials should be considered in the project time plan and included in the S-APQP (from project start on) and provide adequate time for correction of deviations. The time length is defined supplier-, project-, and process specific and shall be integrated into the SQP project (see Training) by the Supplier Quality Engineer.
- Any deviations must result in an approved action plan supporting the project time line.
- If the First-Production-Trial is done under serial production conditions and the results meet the PPAP-requirements, these results can be used for the PPAP-Production-Trial-Run and for PPAP-submission. The decision to skip the PPAP-Production-Trial-Run or any of its contents, may only be taken after the First Production-Trial-Run has been executed as scheduled and the actual results confirm such decision.
- If the PPAP-Production-Trial-Run (according to Production-Trial-Run-Standard) satisfies the Run at Rate requirements, the PPAP Production-Trial can be counted as a Run at Rate in agreement with Veoneer.
- Parts produced in the Production-Trial-Runs are manufactured at suppliers risk. If parts are at PPAP-approved engineering level, they can be sold.

All parts ordered from Production-Trial-Runs shall be sold at serial price.

Output from Supplier:

For CLD 2 and CLD 3:

- measure and document all drawing and specification characteristics
- conduct a capability-study (reference: VS052)
- conduct and document a process quality audit (use "SQPS-914 Production Trial Run Checklist")
- conduct and document a production capacity evaluation (use SQPS-913 Production Trial Capacity Report) according to the agreed project time line.

Required Documents:

- Dimensional-Report (use AIAG-manual form), optional use Veoneer-form : "SQPS-907 Dimensional Report"
- Capability Study: No specific form required.
- SQPS-914 Production Trial Run Checklist
- SQPS-913 Production Trial Capacity Report

Reference Documents:

- SQPS-925 Production Trial Run Standard
- AIAG-Manual APQP
- AIAG-Manual PPAP
- VS052 (Product Characteristics Classification)
- VS104 FMEA
- SQPS-927 CLD3 GUIDELINES
- SQPS-918 S-APQP Overview

3.2.5 PPAP

Purpose:

Is to determine, if Veoneer specifications and requirements are properly understood and that the manufacturing process has the potential to produce products consistently meeting these requirements under consistent (normal) production conditions. All externally provided products and services (as applicable) shall be approved per ISO 9001 requirements prior to submission to the Veoneer/customer.

Input from Veoneer:

- PPAP-request (PPAP-submission date, PPAP-Level etc.).
- Veoneer released drawings and specification.
- SQPS-911 PPAP checklist (if requested by Veoneer)

Requirements:

- Check general requirements for PPAP in AIAG-Manual PPAP and in VSM section "General Requirements/Specific Requirements/Quality - PPAP".
- All submitted PPAP-documentation must be in English.
- PPAP desired format is electronic file.
- PPAP-submission on time and according to PPAP-request.
- Only if PPAP is 100% complete and o.k. it should be submitted to Veoneer. In case supplier will request an interim approval, the "SQPS-910 Interim Recovery Worksheet" shall be submitted before PPAP. For any deviations an approved action plan supporting the project time line is required before submitting the PPAP.
- The PPAP-Approval is not a delivery signal. The supplier shall wait for further delivery information/schedules.

Output from Supplier:

- PPAP-Submission on time and "right the first time"

Required Documents:

The PPAP-package shall consist of :

- PPAP-documentation according to the PPAP-Level defined in the PPAP-request (use AIAG-Manual PPAP-forms)
- Veoneer specific submission documents as defined in the PPAP-Request (Section 17 4 of PPAP-Submission-Index-template).
- SQPS-911 PPAP checklist (if requested by Veoneer)

Optionally Veoneer PPAP-standard forms can be used:

1. Design Records (Drawing Specifications...)

1.2. Approved IMDS declaration of material (done in IMDS database: http://www.mdsystem.com/index.jsp.)

2. Engineering Change Documents: "Supplier Change Request (SCR)"

3. SQPS-909 Engineering Sample Approval

4. SQPS-104 Appendix A (Design FMEA)

5. Process Flow Diagrams (no specific form required)

6. SQPS-104 Appendix A (Process FMEA)

7. SQPS-905 Control Plan

8. Measurement System Analysis Studies

9. SQPS-907 Dimensional Report

10. SQPS-912 Production Part Approval Material Test Results

11. Initial Process Studies (no specific form required)

12. Qualified Laboratory Documentation (no specific form required)

13. SQPS-901 Appearance Approval Report

14. Sample Production Parts (no specific form required)

15. Master Sample (no specific form required)

16. SQPS-904 Checking Aids

17. Veoneer specific requirements (as applicable):

17.1. VS 005-Waiver Request Form

17.2. Sample of an AIAG label per VS 004 and VS 244

17.3. Manufacturing lot traceability flow diagram per Veoneer VS 004

17.4. Are heat treatment audits (if required) included (Ford format desired or compliant to CQI-9 unless otherwise requested) < 1 year old

17.5. Copy of the packaging instructions

17.6. Copy of the Tool Asset Form sent to the proper party/location (if applicable)

If applicable (for interim approval): SQPS-910 Interim Recovery Worksheet

18. SQPS-921 Veoneer PSW template

Reference Documents:

- AIAG-Manual : APQP, PPAP, SPC, MSA
- VS004 (Product Traceability)
- SQPS-004 Appendix 1b - Traceability Flow Chart (Supplier Example)
- VS004 Appendix 2 - Traceability Classification Levels
- VS004 Appendix 3 - Traceability Data Requirements Charts

- VS005 (Substance Use Restrictions for Veoneer Inc.)
- VS052 (Product Characteristics Classification)
- VS104 (FMEA = Failure Mode and Effects Analysis)
- VS244 (Package and Transport Label)
- VS244 Appendices: see VSM Standards and Templates
- "VSM General Requirements/Specific Requirements/Quality - PPAP"
- "VSM General Requirements/Specific Requirements/ Logistics"
- "VSM General Requirements/General/Environment"

3.3.1 Start of Production and Serial Deliveries

Purpose:

To communicate requirements for first and ongoing production deliveries.

Input from Veoneer:

Delivery orders can be communicated through (i e. EDI, VPP (Veoneer Partner Portal):

- Delivery schedules (call-offs) and/or Kanban- or Pull-signal

Requirements:

- After PPAP-approval the supplier ships according to the received delivery information.
- Any deviations from the above has to be approved by the using Veoneer facility.
- In case of actual or potential delay in delivery (i.e. due to a lack of capacity), the supplier shall inform the production control department of the receiving Veoneer plant and, if applicable other Veoneer subcontractors (e.g. transport) immediately. An action and recovery plan is required.
- Invoicing and payment terms and conditions are defined on a local level, unless otherwise agreed.
- For further logistic requirements, reference is made to the VSM main-block "General Requirements/Specific Requirements/Logistics“

Output from Supplier:

On time deliveries according to delivery information in the right quantity and fulfilling all requirements.

Required Documents:

- According to local requirements (e.g. ASN (Advanced Shipping Notice) etc.).

Reference Documents:

- VSM "General Requirements/Specific Requirements/Logistics"
- VS 244 (Package and Transport Label)
- VS 244 Appendices: see Standards and Templates
- Packaging and Transportation Sheet
- Supplier Cost Breakdown - Template
- Supplier Cost Breakdown - Example
- Supplier Cost Breakdown - Training
- Contract Review - Template
- Purchase order
- Local/divisional logistic requirements

3.4.1 End of Serial Production and Spare Parts

Purpose:

To inform about Veoneer requirements and procedures for product phase out and spare part management after EOP (End of serial Production).

Input from Veoneer:

- EOP-notification.
- Veoneer Spare Parts Standard

Requirements:

- After EOP the supplier transfers the product into his spare part management process.
- Supplier implements and maintains spare part procedures satisfying the "Veoneer Spare Parts Standard"
- Document retention according to "VSM General Requirements/Specific Requirements/ Quality - General".

Output from Supplier:

- Spare part deliveries, information and procedures according to "Veoneer Spare Parts Standard"

Required Documents:

- According to "Veoneer Spare Parts Standard".

Reference Documents:

- "Veoneer Spare Parts Standard"
- "VSM General Requirements/Specific Requirements/ Quality - General“
- "VSM General Requirements/Specific Requirements/Logistics“

4.1.1 Supplier Pre-Qualification Process

Purpose:

To inform about the Veoneer procedure to assess and release potential new suppliers.

To inform which minimum requirements a potential new supplier must fulfil.

To describe the Veoneer decision process to select potential new suppliers.

This process shall:

Prevent that orders are given to unacceptable suppliers and/or suppliers with a lack of future potential or missing commitment to Veoneer requirements.

Save and prioritize resources in supplier improvement programmes by filtering unacceptable suppliers.

Support the Veoneer Commodity Team decision taking and strategy implementation.

The Supplier Pre-Qualification Process is the start of the supplier's development to fully comply with all VSM-Veoneer Supplier Requirements.

Input from Veoneer:

Introduction presentation about Veoneer

Veoneer requirements in the VSM (Veoneer Supplier Manual).

Information about potential business

Requirements:

Participate in the Supplier Pre-Qualification Process and provide requested information.

Support all pre-qualification audits and assessments.

Thorough review and acceptance confirmation of Veoneer requirements in accordance to the

Supplier Pre-Qualification Process. Note: A release of a new supplier is always linked to a certain plant/production location. Other supplier plant(s) require(s) a reapplication of the Pre-Qualification-Process.

A process audit according to Veoneer Standard VS002 will be performed once the supplier has a process in place for producing Veoneer components.

Output from Supplier:

Support of the Pre-Qualification Process.

Provide requested documents and information.

Required Documents:

- Supplier Fact Profile
- VSM - Supplier Acknowledgment Letter

Other specific documents on request.

Reference Documents:

- VSM-Main block "Supplier Requirements Supplier Pre-Qualification-Process
- VS069 Special Processes - Requirements and Assessments
- Confidential Agreement (Example Only) - Note: Confidential Agreement will be issued in Iron Clad tool.

The assessment templates for information:

VS002 Appendix A4 - Process Audit Questionnaire

VS002 Appendix A1 - Veoneer Supplier Pre Qualification Questionnaire

VESS-001 Appendix A - VES Assessment

VS002 Appendix A3 Project Management Audit Questionnaire

SQPS-906 Development Process Audit

VS069 - Heat Treat Assessment File

VS069 - Plating Assessment File

VS069 - Coating Assessment File

VS069 - Welding Assessment File

VS069 - Soldering Assessment File

VS069 - Crimping Assessment File

4.2.1 Performance Review APQP-Closure

Purpose:

- Eliminate risks to ensure 100% successful launch and serial production.
- Ensure 100% of APQP (Advanced Product Quality Planning) activities are closed including both PPAP and S-APQP.

Input from Veoneer:

- VS051 (Supplier Rating) results. (Note: All supplier factories are rated by all receiving Veoneer plants.)
- Complaint reports, if any.

Requirements:

1. **Supplier Launch Performance Review:**

- Perform a launch and process review.
- Follow-up any specified project QCD-targets (Quality/Cost/Delivery), (e.g. production efficiency, failure rates, delivery performance, customer feed-back etc.) and implement actions for any non-conformities.
- Monitor early production containment (SQPS-412 Interim Inspection Plan) actions (if requested by Veoneer). If problems occur, define further countermeasures until problems are solved.
- SQPS-412 actions can not be terminated before written approval from Veoneer has been issued.

2. **Closure of APQP (Advanced Product Quality Planning):**

- All open APQP issues shall be resolved and closed.
- All Lessons Learned shall be identified, documented and implemented and if requested shared with Veoneer.

- For all projects, the SQP project shall be documented and all required deliverables submitted through 'SQP IT application in APP' (see Training).

3. Continuous Performance Monitoring:

- For continuous performance monitoring the supplier shall follow the VS051 requirements and set up further relevant key indicators. "General Requirements/Specific Requirements/Manufacturing Systems".
- All VS051 and other relevant key indicators and referred action plans must be available for Veoneer review upon request.
- Note: Supplier should carefully review his VS051-results on monthly basis. If supplier can not reproduce or does not agree to the VS051-results submitted by Veoneer, Supplier should answer to Veoneer immediately by using the VS051 Dispute form.

Output from Supplier:

- Zero-defects.
- Quality performance according to specifications.
- 8D reports and action plans for any non-conforming issues.
- 100% on time deliveries.
- Closure of S-APQP by submission of above necessary deliverables to Veoneer SQ through the SQP project task 'project closure' using 'SQP IT application in VPP'.

Required Documents:

- Submission of necessary deliverables as an evidence through the SQP project task 'project closure' using 'SQP IT application in VPP'.

Reference Documents:

- AIAG-Manual APQP (Advanced Product Quality Planning).
- VS051 (Supplier Rating) / Appendix A (Supplier Rating Examples)
- VS051 Targets and Thresholds
- VS051 Dispute form

- SQPS-412 (Interim Inspection Plan) / SQPS-412 Appendix A - IIP Result Sheet

4.2.2 Continuous Process and Cost Improvement

Purpose:

By effective continuous improvement the supplier shall

- Improve quality level
- Improve delivery reliability and
- Reduce the costs for supplier and Veoneer
- Ultimately reducing overall customer risks

Input from Veoneer:

- Supplier Rating /VS051.
- VSDP (Veoneer Supplier Development Programme) feedback and support.
- VE/VA-support. (VE/VA = Value Engineering/Value Analysis)
- Training on request (e.g. VSDP).
- Future business plans and road maps (incl. target costs, volumes etc.).

Requirements:

1. **Continual improvement on product manufacturing process**

Potential manufacturing process improvements shall be identified. Supplier is encouraged to use the Veoneer Excellence System VES Assessment-template for that purpose. The supplier can also use the VES-booklet to implement internal workshops (including methods such as 5S audit, SMED, TPM, Just In Time).

Continual improvement workshops shall be under a programme of regular management review of status, priorities and resources.

The supplier shall actively be engaged and take the initiative in the Veoneer Supplier Development Programme (VSDP).

2. Continual improvements on product design and performance

The supplier has the expertise of its technology and is strongly invited to suggest design changes to improve the product cost, quality, process and performance. Any proposal must be submitted in writing in accordance with local requirements.

Process:

The supplier contacts Veoneer for a preliminary feasibility review. After that the supplier issues an engineering or process change proposal in writing through the SCR-template. After Veoneer approval, the process or engineering change can be initiated.

All changes require a review of applicable items from step 3.2.1 onwards "Control Level Definition Standard and Start of APQP-Process".

Output from Supplier:

--> Process and Product Cost Reduction

--> Continual improvement on product manufacturing process:

- Potential improvement identification and associated action plans.
- Improvements on VS051 results and other process key indicators.

--> Continual improvements on product design and performance:

- Engineering change proposals (leading to cost and/or performance improvements).
- Information about technical innovations and trends.
- Change projects managed according to VSM-project phase definitions "Control Level Definition Standard and Start of APQP-Process" and follow the SCR-process. All Process/Design changes at Veoneer's suppliers or sub-suppliers require written notification to Veoneer of the change. VSM Change Points Description, defines changes requiring notification as well as those needing formal SCR submission to Veoneer. Also, reference the AIAG-Manual PPAP which notes that changes that require customer notification include:

1. Use of other construction or material than was used in the previously approved part or product.

2. Production from new or modified tools (except perishable tools), dies, molds, patterns, etc. including additional or replacement tooling.

3. Production following upgrade or rearrangement of existing tooling or equipment.

4. Production from tooling and equipment transferred to a different plant site or from an additional plant site.

5. Change of supplier for parts, non-equivalent materials, or services (e.g. heat treating, plating, etc.)

6. Product produced after the tooling has been inactive for volume production for twelve months or more.

7. Product and process changes related to components of the production product manufactured internally or manufactured by suppliers.

8. Change in test/inspection method – new technique (no effect on acceptance criteria).

Additionally, for bulk materials:

9. New source of raw material from new or existing supplier.

10. Change in product appearance attributes.

Required Documents:

- Engineering Change Proposals "Supplier Change Request (SCR)"-template.
- For engineering change processing: documents as required in VSM-project phase definitions. "Control Level Definition Standard and Start of APQP-Process"

Reference Documents:

- "VS007 Appendix J -Supplier Change Request management"
- "VSM-General Requirements/Specific Requirements/Manufacturing System".

- Recommended reference document: VES-booklet

4.2.3 Complaint Reporting and Resolution

Purpose:

To communicate, document, track and solve supplier product quality and delivery problems.

Input from Veoneer:

NCM (Non Conforming Material Report) and corrective action plan (8D-Report) request.

Requirements:

Every time a product quality or delivery concern is identified:

1. **Quality concerns:**

- 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 NCM Escalation Model / "Normal Problem Solving Process") or in
    - accordance with the NCM-requirements (Non Conforming Material).

- The supplier must respond in writing in a timely manner (time is defined in NCM Escalation Model / "Normal Problem Solving Process") using the 8D-discipline (item 1 to 3). The recommended form is the 8D-Report, if not otherwise agreed with Veoneer.
- The supplier reports corrective actions (timing according to in NCM Escalation Model / "Normal Problem Solving Process") after the NCM (Non Conforming Material Report) receipt using the 8D-discipline (item 4 to 5). The recommended form is the 8D-Report, if not otherwise agreed with Veoneer. It is also recommended that the content of the 8D be assessed by the supplier using the 8D assessment tool and to attach the assessment to the 8D submitted to Veoneer.

8D Assessment Tool. 8D Assessment Tool Introduction.

- The supplier reports the problem preventive actions and 8D-discipline closure (8D-item 6 to 8):
    - Problem resolution is confirmed through ongoing confirmation and verification of corrective actions.
    - P-FMEA (Process Failure Mode and Effects Analysis), Control Plan and other affected documents are updated.
    - Follow-up of results (f.i. through tracking of any re-occurrences).
    - The Go and See PFMEA approach shall be considered as part of preventing future issues and reducing product/process risks and is part of closing corrective actions (i.e. was the Go and See PFMEA previously performed and missed an improvement opportunity or has there been a change made to the process, based upon corrective action(s), that needs Go and See PFMEA evaluation?)
- In case the supplier requests a deviation approval he should contact the local Veoneer SQ and use local templates, if available.

2. Delivery concerns:

- Veoneer reports to the supplier a Non Conforming Material Report (NCM).
- The supplier must respond in writing in a timely manner using the 8D-discipline. The recommended form is the 8D-Report, if not otherwise agreed with Veoneer.

3. Important notes:

In case the supplier detects a quality or delivery problem that may involve a product that has been shipped or is scheduled to be shipped and could disrupt supply they are to notify Veoneer immediately.

The supplier and his sub-supplier shall provide Veoneer with full documentation access.

Premium freight, quality cost, production stops, sorting actions, scrap, etc. and other consequences, will be charged to the supplier.

Output from Supplier:

- Number of actual defective parts after sorting (important for correct PPM calculation).
- Containment actions, problem solving and preventive actions.
- Shipment information according to Veoneer instruction.
- Backlog recovery plan.
- On-site support at Veoneer.

Required Documents:

- 8D-discipline reporting. The recommended form is the 8D-Report, if not otherwise agreed with Veoneer.
- Backlog recovery plan.

Reference Documents:

- NCM Escalation Model
- SQPS-063 (Problem Management & Lessons Learned)
- VS104 FMEA
- "VSM General Requirements/Specific Requirements/ Quality -General"
- SQPS-937 (Supplier NCM Physical Analysis Protocol)

4.2.4 Veoneer Escalation Model

Purpose:

To involve the supplier and Veoneer management ensuring that the necessary priorities and resources are dedicated to the problem resolution.

Input from Veoneer:

- It is the Veoneer expectation that problems are solved without any escalation.
- When required communication to the supplier will be made according to the NCM Escalation Model.

Requirements:

- Requirements and resulting actions are defined in the NCM Escalation Model.
- Any other actions (process audit, capacity or logistic audit, third party actions, etc.) Veoneer may direct as necessary.

Output from Supplier:

- According to NCM Escalation Model.
- Any other additional outputs as required by Veoneer.

Required Documents:

- According to NCM Escalation Model.

Reference Documents:

- NCM Escalation Model

- SQPS-063 (Problem Management & Lessons Learned)
- VS051 (Supplier Rating) / Appendix A (Supplier Rating Examples)
- SQPS-937 Supplier NCM Physical Analysis Protocol

4.2.5 Performance and Profile Evaluation

Purpose:

- To inform the supplier of the methodology of our supplier performance review process, and its effect on the Veoneer-Supplier relationship.

Input from Veoneer:

- Supplier VS051-rating (available on VPP)
- Supplier Status Review Meeting agenda proposal

Requirements:

- The supplier and Veoneer shall follow the SQPS-920 Supplier Status Review.
- Meetings are scheduled based on a number of determining factors.
- Responsible participants are requested to attend from supplier and Veoneer.
- Preparation is required in advance by the supplier based on an established agenda.
- Preparation and presentation on the part of the supplier includes but is not limited to knowledge and detailed understanding of supplier's VS051-status and improvement action plan, Flag Panel status, Supplier Development status, cost reduction roadmap, new technology/product development plans and previous action plan requests.

The business result of the meeting could be either determining the supplier is:

- GREEN: Veoneer and Supplier need to discuss the ability to maintain and increase the business
- YELLOW: Veoneer and Supplier agree on a development plan to improve the supplier.
- RED: Veoneer and Supplier agree to eliminate or constructively phase-out the supplier.

Output from Supplier:

- Action plans
- Financial statements
- Cost reduction roadmaps
- Technology/new product development information

Required Documents:

- Improvement action plans

Reference Documents:

- SQPS-920 Supplier Status Review

4.2.6 Quality and Delivery Review

Purpose:

To assure that the supplier identifies systemic problems (repeat problems, unacceptable VS051 performance) and assign adequate resources to permanently eliminate the problems and their root causes to reduce customer risks.

The Quality and Delivery Review is a reaction to existing quality and delivery concerns. For long term, proactive system and process improvements the VSDP (Veoneer Supplier Development Programme) can be initiated by Veoneer.

The information resulting from these actions are forwarded to the commodities and will have a strong influence on sourcing decisions."VSM - Performance and Profile Evaluation"

Input from Veoneer:

- VS051-results and other, additional data
- Assignment and priority of resources

Requirements:

If a supplier shows repeat problems or unacceptable VS051 performance Veoneer may start a Supplier Performance Improvement Program.

Targets, requirements and actions shall be clearly communicated to the supplier for agreement prior to a startup of such a program.

Attendance of appropriate supplier senior management is required as requested by Veoneer.

Supplier shall prepare by establishing a consolidated problem analysis including identification of systemic problems and action plan.

Note: Supplier should carefully review his VS051-results on monthly basis. If supplier does not agree to the VS051-results submitted by Veoneer, he should answer to Veoneer immediately by using the VS051 Dispute form. It is important, that the supplier agrees to the VS051-results with Veoneer.

Corrective action workshop(s) may be required, if the supplier's current corrective actions do not satisfy Veoneer's expectations. This needs to be addressed and acted on immediately as a protection for Veoneer production and customers.

If the supplier can not meet the agreed targets or results agreed upon in the improvement program, the responsible Veoneer Commodity Manager can set the supplier "On Hold", which blocks the supplier for any new business. A supplier unwilling to participate in improvement programs and / or initiatives can also be put “On Hold” by the Commodity Manager (Management).

Output from Supplier:

- Commitment and prioritization of resources
- Problem resolution action plan
- VS051 status: Satisfactory Performance (Green), striving for Zero Defects

Required Documents:

- VS051 results
- Any other operational indicators previously identified
- 8D-Reports
- Problem resolution action plan

Reference Documents:

- "VSM-Performance and Profile Evaluation"
- "VSM-General Requirements/ Specific Requirements/Quality - General”
- VS051 (Supplier Rating) / Appendix A (Supplier Rating examples)
- VS051 Targets and Thresholds

- VS051 Dispute form

4.3.1 Product Re-Sourcing

Purpose:

To guarantee the supply of quality products, delivered on time, at the best price to Veoneer and 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.

4.3.2 Veoneer Spare Parts Standard

Purpose:

Inform about the Veoneer requirements and procedures for spare part management after EOP (End of Serial Production)

Input from Veoneer:

- EOP-date-notification, considering the material and process leadtime
- Information, if spare parts are required or not for any and all Veoneer facilities.
- Predefined spare parts stock level before completion of series production, if applicable.
- A forecast about the quantity after EOP: Possibly a definition of all-time requirement.
- Information about packaging requirements or delivery address changes.
- Purchase orders for spare parts

Requirements:

- Spare parts must be available for minimum 15 years after EOP or longer if individually defined.

Note: For special electronic components individual requirements can be applicable.

- Veoneer expects the supplier to deliver spare parts not later than 30 days after notification or as agreed
- Serial pricing is required for a period of five years after EOP if not otherwise agreed with Veoneer.
- To fulfill Veoneer's leadtime requests the supplier needs to maintain necessary stock levels.

- Any product, process, material and sub-supplier change request must be pre-approved by Veoneer.
- PPAP procedure according to "VSM Component and Software Lifecycle/ Launch Process/ PPAP"
- Tools, fixtures, gages and other equipment may not be scrapped without written Veoneer approval.
- Tools, fixtures, gages and other equipment maintenance and refurbishment remains under the responsibility of the supplier.
- Packaging to be defined between supplier and Veoneer.
- Supplier shall inform about minimum lot size requirements in advance, if any.
- Spare parts may not be sold to third parties without written Veoneer approval.
- The performance for supply of spare parts is monitored under the same quality and delivery requirements as serial parts. Reference: VS051.
- Claims for excess material, products, equipment etc. must be submitted to Veoneer with supporting documentation no later than 60 days after EOP.

Output from Supplier:

- PPAP-approval according to "VSM Component and Software Lifecycle/Launch Process/PPAP ".
- Information about any changes linked to the above requirements (manufacturing process, tool or equipment , material, packaging and about any transfer to other location etc.)
- Obsolescence claims (e.g. obsolete stock), if any.
- Spare part quality and delivery performance according to Veoneer specified requirements.

Required Documents:

Same as for serial deliveries

Reference Documents:

- "VSM General Requirements/Specific Requirements/Quality - PPAP"

- "VSM Component and Software Lifecycle/Launch Process/PPAP "

5.1 Training Modules

Please find below links to the following VSM training modules:

- *VSM Overview Training*
- SQPS-932 Quality
- *Purchasing Break Out Session*
- SQPS-931 Product Life Cycle
- SQPS-934 S-APQP and Contract Review Training
- SQPS-935 SQP Handbook for Suppliers
- SQPS-933 Production Trial Run Capacity Report - Training
- Supplier Cost Breakdown - Training
- Supplier Cost Breakdown - Example
- TFC - Training
- *SQPS-940* NCM - Database Supplier Guideline
- SQPS-941 NCM - Excel Report- Supplier Guideline
- *Request for Quote (RFx) Supplier Guideline*
- SQPS-939 Supplier initiated Change Request (SCR) Training
- SQPS-061 User Guideline (Presentation of Continual Improvements Processes)

6.1 Standards

Veoneer Standards

- VS002 Supplier Audit
  - VS002 Audit Appendix A1 - Pre-Qualification Audit - summary report
  - VS002 Audit Appendix A2 - Social Responsibility Audit - summary report
  - VS002 Audit Appendix A3- Project Management Audit - summary report
  - VS002 Audit Appendix A4 - Process Audit - summary report
- VS004 (Product Traceability)
  - SQPS-004 Appendix 1b - Traceability Flow Chart (Supplier Example)
  - VS004 Appendix 2 - Traceability Classification Levels
  - VS004 Appendix 3 - Traceability Data Requirements Charts
- VS005 (Substance Use Restrictions),
  - VS005 Appendix A - Declarable, Restricted and Forbidden Substances List
  - VS005 Appendix B - References - Declarable, Restricted and Forbidden Substances List
  - VS005 Appendix C - Veoneer Policy on Conflict Materials
  - VS005 Appendix D - Waiver Request Form
  - VS005 Appendix E - Waiver Request Flowchart
  - VS005 Appendix F - Veoneer Supplier IMDS Declaration Requirements
- VS007 Appendix J - Supplier Change Request Management
- VS007 Appendix J1 - Supplier Change Request Template
- VS007 Appendix J2 - Veoneer SCR_P5 Sample Warrant Template
- VS051 Supplier Rating
  - *VS051 Appendix A - Supplier Rating Examples*
  - VS051 Targets and Tresholds
  - VS051 Dispute form
- VS052 (Product Characteristics Classification), Appendix B (CC/SC), SQPS-052 Appendix D Measurement Agreement Sheet, see above (templates)

- SQPS-061 (Presentation of Continual Improvement Processes), SQPS-061 Appendix 1 Monthly; SQPS-061 Appendix 2 Weekly
- SQPS-063 Supplier Problem Management & Lessons Learned (8D Problem Solving Process)
- VS069 (Special Processes-Requirements and Assessments)
- VS100 (Veoneer Product Development System - APDS) Veoneer internal Standard. This is a reference document in certain VS (e.g. VS 52) but not applicable for suppliers!
- VS104 (Potential Failure Mode and Effects Analysis in Design and Manufacturing and Assembly Processes)
    - SQPS104 Appendix A FMEA Process Map
- VS242/1 (EDI Messages)
- VS242/2 (EDI Messages)
- VS242/3 (EDI Messages)
- VS242/4 (EDI Messages)
- VS244 (Package and Transport Label)
    - VS244 Appendix A Transport Label.pdf
    - VS244 Appendix B Europe VDA small.pdf
    - VS244 Appendix C Package Label.pdf
    - VS244 Appendix D Credit Card Label.pdf
    - VS244 Appendix E Europe B10.pdf
    - VS244 Appendix F1 USA AIAG B10 AAM Container.pdf
    - VS244 Appendix F2 USA AIAG B10 AAM Master.pdf
    - VS244 Appendix F3 AIAG B10 AAM Mixed.pdf
    - VS244 Appendix G Electronics Credit Card.pdf
    - VS244 Appendix H Label sizes.pdf
    - VS244 Appendix I USA B10 2D PDF417.pdf
- VS246 Packaging Standard
    - VS246 Appendix A (Packaging Proposal Sheet)
- Business Code of Ethics for Suppliers (Various Languages)

- SQPS412 (Interim Inspection Plan)
- Veoneer Environmental Policy
- Veoneer Climate Policy (VS030 Appendix E)
- Veoneer IMDS Reporting Guideline
- Veoneer Spare Part Standard
- Veoneer Standards of Business Conducts and Ethics
- VESS-001 VES Assessment Standard
- SQPS-929 Process-Flow
- SQPS-923 VSDP Review-Guideline
- SQPS-927 Control Level Definition (CLD3) Guideline
    - SQPS-927 Appendix A -CLD3 Checklist
- SQPS-900 Supplier NCM Escalation Model
- SQPS-925 Production Trial Run Standard
- SQPS-922 Veoneer Supplier Pre Qualification Process
- SQPS-920 Supplier Status Review
- SQPS-930 Change Point Analysis
- SQPS-937 Supplier NCM Physical Analysis Protocol
- SQPS-938 Pre-PPAP Labeling Requirements
- Commercial Terms and Conditions

Other Standards

- AIAG Manual / APQP (Advanced Product Quality Planning)
- AIAG Manual / PPAP (Production Part Approval Process)
- AIAG Manual / SPC (Statistical Process Control)
- AIAG Manual / MSA (Measurement System Analysis)
- AIAG Manual / QSA (Quality System Assessment)
- AIAG Manual / P-FMEA (Process Failure Mode and Effects Analysis)
- ISO 9001
- IATF 16949 Quality Systems

- ISO 14001
- IMDS Database (http://www.mdsystem.com/index.jsp)
- Legal (local, national and global) requirements referring to material restrictions

6.2 Templates

- VES Booklet
- VESS-001 Appendix A - VES Assessment
- VESS-001 Appendix B - Assessment Guideline
- VESS-001 Appendix C - VES Assessment Training Module
- VESS-001 Appendix D - Calibration Agenda and Pre-Work
- VSM-Supplier Acknowledgement Letter
- VS002 Audit Appendix A1 - Pre-Qualification Audit - summary report
- VS002 Audit Appendix A2 - Social Responsibility Audit - summary report
- VS002 Audit Appendix A3- Project Management Audit - summary report
- VS002 Audit Appendix A4 - Process Audit - summary report
- VS007 Appendix J1 - Supplier Change Request Template
- VS007 Appendix J2 - Veoneer SCR_P5 Sample Template
- *VS051 Appendix A - Supplier Rating Examples*
- SQPS-061 Appendix 1 - Monthly
- SQPS-061 Appendix 2 - Weekly
- SQPS-061 Appendix 3 - Daily
- SQPS-052 Measurement Agreement Sheet
- SQPS-063 Appendix A Containment Guideline
- SQPS-063 Appendix B 8D Template (excel)
- SQPS-063 Appendix C 8D Template (ppt)
- SQPS-063 Appendix D 8D Assessment Tool
- SQPS-063 Appendix E 8D Introduction to 8D Assessment Tool
- VS069 - Heat Treat Assessment file

- VS069 - Plating Assessment file
- VS069 - Coating Assessment file
- VS069 - Welding Assessment file
- VS069 - Soldering Assessment file
- VS069 - Crimping Assessment file
- SQPS- 412 Appendix A - IIP Result Sheet
- Contract Review - Template
- SQPS-901 Appearance Approval Report
- SQPS-904 Checking Aids
- SQPS-906 Development Process Audit and Review Process
- SQPS-907 Dimensional Report
- SQPS-908 Dock Audit Report Template
- TFC - Template
- SQPS-910 Interim Recovery Worksheet
- VS246 Appendix A - Packaging Specifications
- SQPS-911 PPAP checklist (if requested by Veoneer)
- SQPS-938 Appendix A Pre-PPAP Samples Label
- PPAP-documentation (use AIAG-Manual PPAP-forms)

Optionally Veoneer standard forms can be used:

1. Design Records (Drawing Specifications…)

   1.1. Approved IMDS declaration of material (done in IMDS database: http://www.mdsystem.com/index.jsp

2. Engineering Change Documents: "Supplier Change Request "
3. SQPS-909 Veoneer Engineering Sample Approval
4. Design Failure Mode and Effects Analysis (Design FMEA)
5. Process Flow Diagrams (no specific form required)
6. Process Failure Mode and Effects Analysis (Process FMEA)

7. SQPS-905 Control Plan
8. Measurement System Analysis
9. Dimensional Results
10. Records of Material/Performance Test Results
11. Initial Process Studies (no specific form required)
12. Qualified Laboratory Documentation (no specific form required)
13. Appearance Approval Report
14. Sample Production Parts (no specific form required)
15. Master Sample (no specific form required)
16. Checking Aids
17. Records of compliance with Veoneer specific requirements

    17.1. Submission of VS 244-labels samples (no specific form required)
18. SQPS-921 Part Submission Warrant (PSW)
19. SQPS-902 Bulk Material Requirements Checklist

- SQPS-914 Production Trial Run Checklist
- SQPS-913 Production Trial Capacity Report
- SQPS-924 VSM Production Trial Run Capacity Report Training
- SQPS-912 Production Part Approval Material Test Results
- SQPS-915 Red Bin Audit and Reject Reduction Report (Excel file)
- SQPS-926 Bin Audit and Reject Reduction Guideline (Presentation)
- Supplier Cost Breakdown - Template
- SQPS-918 VSM S-APQP Overview
- SQPS-919 Supplier PFMEA Go See Fix Handbook
- Supplier Fact Profile
- Confidential Agreement (Example Only)

Glossary

Term Description
AAR Appearance Approval Report
AEC Automotive Electronics Council
AIAG Automotive Industry Action Group (acc. to AIAG Manual) The AIAG is a group formed by DaimlerChrysler, Ford Motor Company, and General Motors. The purpose: To provide an open forum where members cooperate in developing and promoting solutions that enhance the prosperity of the automotive industry. AIAG's focus is to continuously improve business processes and practices involving trading partners throughout the supply chain.
APQP Advanced Product Quality Planning (acc. to AIAG Manual / APQP) Plan and process to support the product preparation prior to component qualification (PPAP). The purpose is to assist the Product Quality Planning Team in developing and defining appropriate quality measures to support product specific customer requirements, needs and expectations.
BOM Bill of Material
Bulk Material Is a substance (e.g. non-dimensional solid, liquid, gas) such as adhesives, sealants, chemicals, coating, fabrics, lubricants, etc. A bulk material may become production material if issued a customer production part number.
CC Critical Characteristic: Product/Process Characteristic affects a product safety, operator safety and/or compliance with regulatory (governmental and legal) requirements.
CLD Control Level Definition
Commodity Manager / Team
CPK

Continuous Process Ko-Efficiency

CSL
Controlled Shipping Level

DAR
Dock Audit Report

DMR
Defective Material Report

DRD
Design Requirement Document

Early production containment plan
Extended control and inspection activities implemented during SOP and to contain quality issues if defined.

EDI
Electronic Data Interchange

ESA
Engineering Sample Approval

FIT
Failure in time

Flag Panel
It is a internal Veoneer Purchasing Commodity form that presents our current supplier base and their actual status.

I**MDS**
International Material Data System

JIT
Just in Time

LTAP
Long Term Action Plan

MPS
Manufacturing Process Specification, Veoneer internal specification for critical manufacturing processes / process steps.

MTTF
Mean time to failure

NCM
Non Conforming Material

PDCA
P (Plan) D (Do) C (Check) A (Act)

PPAP

Production Part Approval Process (acc. to AIAG Manual / PPAP)
It defines generic requirements for production part approval, incl. Production and bulk materials. / The purpose is to determine if all customer engineering design record and specification requirements are properly understood by the supplier and that the process has the potential to produce product consistently meeting these requirements during an actual production run at the quoted production rate.

PPK
Preliminary Process Ko-Efficiency

Pre-Launch Control Plan
(according to AIAG Manual / APQP) Pre-Launch control plans are a description of the dimensional measurements and material and functional tests that will occur after prototype and before full production.
The Pre-Launch control plan should include additional product / process controls to be implemented until the production process is validated. The purpose of the Pre-Launch control plan is to contain potential nonconformances during or prior to initial production runs.

PSW
Part Submission Warrant

QCD
Quality, Cost & Delivery

QOS
Quality Operating System

SC
Significant Characteristic: Product/Process Characteristic affects a product form, fit or function (other than safety and regulatory requirements e.g. environmental, health and safety, customer or internal regulations) or has other valid reasons for control and documentation.

Shall
Must

SMED
Single Minute Exchange Dye

SPC
Statistical Process Control (acc. AIAG Manual / SPC)

SQ
Supplier Quality

TPM
Total Productive Maintenance

VE/VA
Value Engineering / Value Analysis
VES
Veoneer Excellence System
VPP
Veoneer Partner Portal
VSDP
Veoneer Supplier Development System
VSM
Veoneer Supplier Manual

8. Download

VSM booklet.pdf

Single section PDF files can be downloaded for Standards and Templates under *"VSM Training and Templates"*

Single section PDF files can be downloaded for Training presentations under "*VSM Training Modules*"

Latest Updates

Revision date Revisions Title Category Sub Category

22.11.2022 14:14:03
6.2 Templates
Updated VS007 Appendix J1, VS007 Appendix J2.

22.11.2022 14:09:05
6.1 Standards
Updated SQPS-061, SQPS-052 Appendix D, VS007 Appendix J, VS007 Appendix J1, VS007 Appendix J2, VS004 Appendix 2

21.10.2022 13:50:41
2.1.2 Environment
Section 2.1.2 Environmental Policy clarified, by removing redundant sentence.

12.10.2022 08:15:00
6.2 Templates
New version of the "TFC - Template"

15.09.2022 18:17:06
5.1 Training Modules
Updated with revised Training Module - SQPS-932

15.09.2022 16:26:58
2.2.1 Quality - General
Updated section "16. Continuous Improvement" to include paragraph "All electronic component suppliers are.... device technology."

10.06.2022 15:33:19
2.2.1 Quality - General

Updated section "14.Document Control and Records" from 20yr to 23yr.

08.06.2022 16:59:31
6.1 Standards
Updated new versions of SQPS-412, VS005 Appendix F, SQPS-063 Appendix C

08.06.2022 16:57:30
3.2.1 Control Level Definition and Start of APQP-Process
Corrected Link Name under Reference section - SQPS935.

17.05.2022 12:08:06
2.1.2 Environment
Addition of Veoneer Climate Policy and associated requirements.
Addition of CAMDS on top of IMDS and update of related paragraph.

25.02.2022 20:47:57
8. Download
Updated VSM booklet.pdf

25.02.2022 20:42:53
2.2.2 Quality – PPAP
Updated sub-section - 12 Qualified Laboratory Documentation from ISO/TS 16949 to IATF 16949.

25.02.2022 14:18:07
6.2 Templates
Updated VS007 Appendix J1 template.

25.02.2022 13:53:13
5.1 Training Modules
Updated with revised Training Module - SQPS-935

31.01.2022 18:20:48
6.2 Templates

Updated broken link for SQPS-926.

31.01.2022 18:17:59
5.1 Training Modules
Updated with SQPS-940, SQPS-941 Guidelines.

27.01.2022 17:00:01
5.1 Training Modules
Updated with SQPS-061 User Guideline.

25.01.2022 17:18:25
2.2.4 Manufacturing Systems
Updated with SQPS-061 (VS061 is withdrawn).

25.01.2022 17:16:30
6.2 Templates
Updated with SQPS-061 Appendices 1, 2, 3.

25.01.2022 17:14:07
6.1 Standards
Updated with SQPS-061 Standard + appendices

21.01.2022 18:52:11
5.1 Training Modules
Updated with new Training module - SQPS-939

14.01.2022 13:04:59
2.2.2 Quality – PPAP
Updated SREA to SCR link.

12.01.2022 12:39:18
4.2.4 Veoneer Escalation Model
Updated Reference Documents with SQPS-937 Supplier NCM Physical Analysis Protocol.

12.01.2022 12:37:03
4.2.3 Complaint Reporting and Resolution
Updated Reference Documents with SQPS-937 Supplier NCM Physical Analysis Protocol.

11.01.2022 20:15:52
3.2.5 PPAP
Removed link to SREA Form and updated with link to SCR Form.

11.01.2022 20:12:16
6.2 Templates
Updated Links for VS002 Appendix A1, A2, A3, A4, VS007 Appendix J1 and VES Booklet.

11.01.2022 20:04:30
6.1 Standards
Updated with SQPS-938, SQPS-937, SQPS-938 Appendix A, VS007 Appendix J, VS007 Appendix J1 and VS244, VS002 appendices A1, A2, A3, A4,

11.01.2022 19:22:21
3.2.3 Prototype Order and Delivery
Updated 3.2.3 Prototype Order and Delivery links for Pre-PPAP Label and Pre-PPAP Label Requirements

11.01.2022 19:17:52
2.2.5 Logistics
Updated 2.25 Logistics with Pre-PPAP Label and Pre-PPAP Label Requirements

10.01.2022 20:50:44
2.2.1 Quality - General
Updated text from SREA/ SCR to SCR.

10.01.2022 20:45:31
4.2.2 Continuous Process and Cost Improvement
Updated text from SREA to SCR.
Updated links for SCR Template and VS007 Appendix J -Supplier Change Request Management.

26.08.2021 17:32:12
2.1.2 Environment
Corrected reference from ISO14001:2004 to ISO14001:2015

07.07.2021 16:26:56
3.2.1 Control Level Definition and Start of APQP-Process
Updated SQPS-927 CLD3 GUIDELINES

29.01.2021 13:22:29
8. Download
VSM booklet.pdf was added to this section.

26.01.2021 18:32:31
5.1 Training Modules
Updated with new Training Modules - SQPS-931, SQPS-932, SQPS-933, SQPS-934, SQPS-935

09.11.2020 16:07:46
2.1.3 Personal Data Statement
Change Chapter Title : Data Privacy Policy becomes Personal Data Statement.
Add a banner, and correct the content of the Chapter.

26.10.2020 17:36:55
4.3.2 Veoneer Spare Parts Standard
Update broken links.

26.10.2020 17:30:13
4.2.6 Quality and Delivery Review
Updated broken links.

13.10.2020 14:30:34
4.2.2 Continuous Process and Cost Improvement
Updated broken links.

13.10.2020 14:25:46
4.2.1 Performance Review APQP-Closure
Updated broken links.

13.10.2020 13:54:08
3.4.1 End of Serial Production and Spare Parts
Updated broken links.

13.10.2020 13:46:15
3.3.1 Start of Production and Serial Deliveries
Updated broken links.

13.10.2020 13:40:49
3.2.5 PPAP
Updated broken links.

13.10.2020 13:26:22
3.1.3 Supplier Selection Supplier Project Start
Updated broken links.

13.10.2020 13:19:47
3.1.2 RFQ, Quotation and Feasibility (TFC)
Updated broken link.

12.10.2020 18:34:30
2.2.5 Logistics

12.10.2020 18:10:41
1. Introduction
Update broken links.

12.10.2020 17:59:30
2.2.3 Project Management
Update broken links.

12.10.2020 17:34:57
2.2.2 Quality – PPAP
Updated broken links.

12.10.2020 17:18:47
2.2.1 Quality - General
Updated broken links.

12.10.2020 16:19:00
2.1.2 Environment
Updated broken links.

05.04.2020 08:00:00
Veoneer Supplier Manual launch (6-APR-2020) with all sections updated with Veoneer content.

Sitemap