SMR Global Supplier Manual
Appendix P -
Volkswagen Group Customer Specific Requirements for Suppliers

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SMR Global Supplier Manual - Additional Customer Specific Requirements

Scope of this document

The scope of this document is to ensure compliance to customer requirement by sub-suppliers of SMR Automotive who are supplying for any VW project. This document is listing requirements for these suppliers in addition to standard IATF16949 requirements and in addition to standard SMR requirements.

Responsibility

Suppliers who are supplier for SMR of a component for a VW product shall meet all requirements listed in this document during the whole project lifetime. This includes but not limited to:

- Regularly check for updates of this document on www.smr-automotive.com
- Ensure availability and awareness of related VW standards and requirements mentioned in this document
- Ensure requirements are met in their supply chain

1.0 Quality Management System (IATF 16949 section 4.4)

Primary manufacturer responsibility for the purchased parts installed in the finished product lies with the Supplier or Sub-supplier. The Supplier must therefore implement all organizationally and technically feasible measures to ensure the product safety of its parts and those of its Sub-suppliers and to minimize product liability risks.

The Supplier shall ensure, and require its Sub-suppliers to ensure, the following:

1. that a highly-developed appreciation of the importance of quality exists throughout their organization,
2. that the required product safety is guaranteed in the component development stage,
3. that special attention is paid to product safety in the quality planning process,
4. that the quality capability of the production processes is ensured and documented,
5. that appropriate production quality assurance measures are implemented to minimize the risk of faulty products,
6. that timely identification of faulty products as early as possible in the production process is ensured by appropriate measures (to minimize cost / loss of value added),
7. that quality data and the legally required compliance tests are documented in detail sufficient to prove that the products have been manufactured in accordance with applicable law and safety standards,
8. that a material tracking system is in place to limit the consequences of any faults that occur,
9. that all relevant personnel receive detailed information and training on product safety and product liability issues and
10. all Sub-suppliers use comparable systems analogous to Formel Q-konkret etc. that meet the Customer's requirements,
11. That an on-site product safety representative (PSB) has been appointed for each stage in the supply chain. The first tier Supplier's product safety representative must be entered in the SMR Supplier Performance Evaluation System. The Supplier must ensure that this entry is up to date at all times,
12. that components with limited Shelf life meet all special labelling requirements,

2.0 Product Safety (IATF 16949 section 4.4.1.2)

VWAG requires a management role defined as “Product Safety Representative”.

3.0 Measurement System Analysis (IATF 16949 section 7.1.5.1.1)

Suitability of Inspection Processes – consideration of measuring accuracy in the Inspection Processes (VW10119). VDA Volume 5. 6

4.0 Record Retention (IATF 16949 section 7.5.3.2.1)

In addition to the general requirements of the Quality Management System, Suppliers must maintain verification for individual D/TLD parts. This data must be kept for a minimum of 15 years after last production (see VDA Volume 1). This also includes the following documents that are identified with “D” or “TLD”, these can be Drawings, Tables, Production Release Documentation, Technical Delivery Specifications, Test Specifications, Sample Reports, and other Quality Records, which can be demanded as proof and which can relieve the party of liability.
Verification Documentation also includes information regarding Planning Type activities, the selection and qualification of Personnel, suitability of Test Equipment, as well as Process Capability investigations and correspondence.
If there is a claim and/or if the Customer so requests, the Supplier must be prove that he has done everything in his

responsibility, as the supplying company, to eliminate any faults and defects in their particular product.
Suppliers are required to apply a systematic verification process for all D/TLD parts.
As proof of effective implementation of the specific requirements the Supplier is required, using the Questionnaire for D/TLD (see supporting documents on the Group Business Platform), to conduct every 12 months a Self-Audit which has a valid period of max. 12 months. This shall be conducted self- reliantly for each manufacturing location by a Self-Audit and must be documented. The Supplier is responsible to apply the process in the same way within his Supply Chain, for Bought-in Parts and Outsourced Process Steps.
If shortcomings are identified during the Audit, it is expected that the Supplier will implement required improvements immediately of his own accord.
The implementation of Improvement Measures and their effectiveness are to be verified by the Supplier by conducting a new D/TLD Audit, this is within their own responsibility. Required documentation is to be traceable. Results of the Self Audit are to be kept for at least 15 years and to be made accessible for any verification by the Volkswagen Group at any time. The evidence of activities by the Supplier to secure and comply with Quality Requirements is to be guaranteed at all times. For the verification process all defined Standards according to VDA Volume 1 and Volume 6 Part 1, ISO/TS 16949 as well as Customer Specific requirements (amongst others the Formel Q-Konkret) are to be considered. The Customer reserves the right, to verify the compliance with the requirements at the Supplier by Process Audits, Technical Reviews, D/TLD audits or other supplier checks.
Upon request the results for the D/TLD Self Audit are to be accessible to the Customer.

5.0 Customer Designated Special Characteristics (IATF 16949 sections 8.2.3.1/8.3.3.3)

VWAG requires suppliers that supply parts with D/TLD-marking, to perform an annual self-audit according to the VW-defined D/TLD-Audit. (See: Formel-Q-Capability (Chapter 7) – Quality Verification for D/TLD-Parts; Formel-QCapability Appendix (Chapter 2; 6.2.3; D/TLD-requirements)

6.0 Development of products with embedded software (8.3.2.3)

VWAG requirements regarding sub-supplier management are described in Formel Q-Capability **Software** (Chapter 8) as well as in other applicable documents indicated in Formel Q-Capability Software (Chapter 2)

7.0 Design and development changes – supplemental/Control of changes (8.3.6.1/8.5.6)

VWAG requires its suppliers to obtain documented approval, or a documented waiver, prior to production, See Formel-Q-konkret, (Chapter 4.5) - Change management and Volkswagen Standard VW 01155

8.0 Supplier selection process (8.4.1.2.e)

VWAG requires in the Formel Q-Capability Software (Chapters 4-8) the employed quality assurance tools for evaluation supplier's quality capability to develop software products. Depending on the product additional requirements may apply, which are described in other applicable documents indicated in Formel Q-Capability Software (Chapter 2)

9.0 Supplier Monitoring (IATF 16949 section 8.4.2.4)

The Supplier is responsible within their Supply Chain for Purchased Products and Outsourced Processes. This includes that the Direct Supplier informed its Sub-Suppliers throughout the supply chain about the Volkswagen Group requirements and ensures that the requirements are known, understood and implemented. The Supplier must ensure that all risks within his Supply and Process Chain are clearly identified and also evaluated, and systematic measures will be implemented to reduce any risks. For the Evaluation of the Supply Chain, all requirements and evaluations according to Formel-Q Capability must be fulfilled. Upon request and in the Self-Audit the supply chain is to be present. This basically includes the requirement of Project specific evaluations according to ISO/TS 16949, Risk Analysis (critical paths similar to VDA for the maturation grade assurance) and Evaluation of Quality Capability of the overall Supply Chain. The Process Chain (Sub-Suppliers) includes all planned and realized value added activities / services that may have an impact on the required process and Product Quality.
The Customer reserves the right, to review such documentation and to verify the Evaluation of the Supplier, e.g. by mutual on-site Assessments with the direct supplier (1st tier supplier) within the Supply Chain or for Outsourced Process Steps. Basically the evaluations of the Supplier Chain can be taken into consideration for the overall Quality Capability. The evaluation will be conducted according to the actual Sub-Supplier Management questionnaire or with the Process Audit Process. With a negative evaluation the Customer reserves the right to take this into account for rating the Direct Supplier. The evaluation is based on the traffic signal system for the individual assessment of each question, as well as in the overall classification. The criteria of the traffic light system are described in Appendix "C".

10.0 Second-party audits (IATF 16949 section 8.4.2.4.1)

Formel-Q-Capability Appendix (Chapter 2; 5.7)

The process-audits in the supply chain must be conducted in accordance to Formel-Q-Capability by certified VDA 6.3 auditors (see auditor qualification in Section 3.2 of FQF 8.0).

11.0 Control plan (IATF 16949 section 8.5.1.1)

(see: Formel-Q-capability, (Chapter 4.2) Product Audit)
The Product Audit must be defined on the product Control Plan. Product Audit shall take place at least every 12 months for each product manufactured as a Series Production part

12.0 Control of changes/Design and Development changes – supplemental (IATF section 8.5.6/8.3.6.1)

VWAG requires its suppliers to obtain documented approval, or a documented waiver, prior to production, See Formel-Q-konkret, (Chapter 4.5) - Change management and Volkswagen Standard VW 01155

13.0 Layout inspection and functional testing (IATF section 8.6.2)

Formel-Q-konkret (Chapter 4.6) – Requalification
In the context of Volkswagen Group the term “Requalification” is equivalent to the IATF-term “layout inspection and functional testing”:To ensure quality, the Supplier must carry out a regular requalification of its scope of supply in accordance VDA publication "Robust Production Processes" (section 5.3.4). Volkswagen Group requires a complete requalification (equivalent to Production-and-Process-approval/initial sample release) at least every three years. Requalification cycles can be defined by legislation, government agencies, and by component-specific requirements (e.g. in the performance specifications/Lastenheft) and must be implemented in the related product control plan. Any deviation from the requalification content must be agreed between the supplier and the customer.

14.0 Statutory and regulatory conformity (IATF section 8.6.5)

It is to expect a worldwide use if certain destinations were not specifically restricted by Volkswagen Group

15.0 Management of production tooling and manufacturing, test, inspection tooling and equipment (IATF section 8.5.1.6)

Volkswagen Group Standard VW 34022 for Marking of Tools, Auxiliary Tools, Test Equipment, and Gages. (Identification Plate) must be ensured.

16.0 Release of Products and Services (IATF 16949 section 8.6.1)

Formel-Q-konkret (Chapter 3.2) - Initial Sample testing and approval:
The sample testing is to be based on VDA vol.2. The latest version of Formel Q-Neuteile Integral contains additional, more detailed Customer requirements regarding the sample testing process. This section 3.2 defines rules for designated parts in assemblies and for assuring consistent component quality.

17.0 Nonconforming Product Disposition (IATF 16949 section 8.7.1.7)

Must include suitable inspection and evidences of sub-supplier parts.

18.0 Monitoring, Measurement, Analysis and Evaluation (IATF 16949 section 9.1)

Process Capability review for Measurable characteristics (VW 10131)
When validating the process capability, the quality of a process in terms of the specifications of the products created by the process is evaluated. On-going process capability shall be determined and assured by process capability inspections (PFU), see ISO/TS 16949 sections 7.5.2 and 8 ff., in accordance with VW Standards 10130, 10131, and 10119, see VDA vol. 4.1 and 5.
The minimum scope of the special characteristics that are measured to determine the Cp and Cpk values shall be defined in the FMEA for the product and the process (P FMEA). These documents can be viewed at any time by the Customer.

18.1 Internal Audit (IATF 16949 section 9.2)

VW requires a yearly supplier self-audit (VA/SL) acc. to FQ capability (chapter 3), 12 months max.

A specific self-audit format must be used. Supplier self-audit must be conducted by certified VDA 6.3 auditors.
In case of D/TLD - marked parts supplier to VWGA a yearly D/TLD - supplier self Audit acc. Formel Q-Capability (Chapter 7: "Quality Verification Audit for D/TLD parts")

18.2 Quality Management System Audit (IATF 16949 section 9.2.2.2)

To ensure quality, the Supplier must carry out a regular requalification of its scope of supply in accordance with the VDA publication “Robust Production Processes”, section 5.3.4, see ISO/TS 16949, section 8.2.4.1. The Customer requires a complete requalification at least every three years. Requalification cycles can be defined by legislation, government agencies, and by component-specific requirements, e.g. in the specifications, and shall be implemented. Testing frequencies shall generally be re-evaluated and agreed with the Customer's Quality Assurance department wherever the capacities to be produced are changing considerably. Any deviation from the requalification content must be agreed between the Economy Supplier and the Customer.

18.3 Manufacturing Process Audit (IATF 16949 section 9.2.2.3)

Process Audit in Series Production presumes a completed Product Creation Process (Product / Process Development) and includes increased focus on Customer Satisfaction and Supporting Processes.
The completion / implementation of defined actions once the Product Creation Process is finished is a Mandatory Requirement and will be verified during the Audit.

The Audit in Series Production without Process Development can be conducted with the launch of Series Production (SOP) or during the overall Manufacturing Period.
The Process Audit is conducted according to VDA 6.3 and uses the questions of the Process Elements:

- P5: Supplier Management
- P6: Process Analysis / Production
- P7: Customer Care, Customer Satisfaction, Service

Additionally, there are further requirements listed in the section “Additional Formel Q Capability Requirements that exceed VDA 6.3 Requirements
The evaluation procedure is described in Appendix "Formel Q Capability Process Audit". Additional results from the Product Audit conducted in parallel will be considered. For determining the overall result for Formel Q Capability Process Audit, the Grading guidelines must be applied.
An up-grading can only take place through a Customer Audit at the Production site of the Supplier after the successful and sustainable implementation of the Improvement Measures.
An upgrading from C to B will only be established once a “robust B” rating during a Customer Audit is reached. (i.e. degree of fulfilment greater than or equal 85% (see VDA 6.3)

18.4 Product Audit (IATF 16949 section 9.2.2.4)

Product Audit acc. Formel-Q-capability (Chapter 4) – Product Audit
The Supplier is obliged to conduct Product Audits according to VDA 6.5
Product Audit shall take place at least every 12 months for each product manufactured as a Series Production part.
For any A and B-faults as well as systematic C-faults caused by the supplier, the supplier shall immediately inform the Supplier Quality department of the Customer by reporting the issue. The implementation of further necessary actions is to be coordinated.

19.0 Warranty Management Systems (IATF 16949 section 10.2.5)

The process of failure analysis including NTF shall be implemented. Procedure shall comply with VDA volume "Field Failure Analysis"

No.	Cause of modification	Date	Modifier	Approved
1	First issue	16.10.2017	Judith Robertson	Steffen Dehner
2	Second issue: Update according to IATF 16949: Customer Specific Requirements of Volkswagen group (January 2018)	20.01.2018	Horacio del Río	Steffen Dehner
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