1.1.7 Cybersecurity management

The supplier is obliged to prove that his cybersecurity management system is not only compliant with specific customer requirements but also with the requirements of ISO 21434.

As a prerequisite for a contract for the respective development site, along with the requirements of Formel Q, the successful audit certificate (A, B) in accordance with VDA "Automotive Cybersecurity – Management System – Audit" must be presented for cybersecurity-relevant software and hardware, including modules.

1.2 Request documents

The supplier must check all requirements of the request documents with regard to completeness, consistency, feasibility and the current state of the art and report anomalies to the customer in writing.
If any amendments/additions are required, for example with regard to software, paint quality, residual dirt, safety equipment, (airbags, etc.), they will be clarified with the respective technical departments of the customer before the offer is created (e.g. product development, production process and product requirements) and will be documented in writing.

1.2.1 Supplier's duty to obtain information

The supplier is responsible for obtaining the documents referenced in the request documents. Customer-specific documents are provided on the ONE.KBP.

1.2.2 Test equipment and gauges

An appropriate gauge and test equipment concept must be part of the scope of the offer.

Suitable test equipment for product qualification and accompanying inspections at the production site must be available for individual parts as well as assemblies. The test equipment must be procured so that all relevant characteristics can be checked. If a test by measurement is not possible, contour gauges or reference parts agreed with the customer shall be provided as test equipment.

The test equipment capability of all test equipment used must be verified by examination by the latest by the parts provision deadline for the VFF and by EOS in accordance with VDA volume 5, in particular "Certificate of Measurement System Capability". In consultation with the customer, the verification can also be performed in accordance with AIAG Measurement Systems Analysis.

For components that are assembled by the supplier (e.g. assemblies/modules), additional suitable assembly test equipment (e.g. partial master jigs, installation or add-on cubes) must be created with suitable measuring systems for independent assessment and coordination.

If modifications are made to components, the test equipment and gauges affected must be adapted immediately in coordination with the customer.

1.3 Supplier concept development

After consultation with the customer, the supplier will prepare an offer, the content of which will vary depending on the scope of development and which must consider least the following items:

- Description of structural design (e.g. geometry, materials, functions, software).
- In case of cybersecurity relevance, presentation of the cybersecurity management system in the supply chain.
- Project organization planned with responsible contact partners for the development and production site.
- Explanation of planned development and production processes, factory layout and supply chains.
- Explanation of a deadline schedule for a parts approval target forecast.
- Details of testing and approval planning (manufacturing chain including recipient).
- Description of sub-supplier management and change management as well as the requalification process.
- Explanation of measures for achieving quality targets.
- Plausibility analysis and agreement on targets (0 km and field).
- Commitments regarding target costs, deadlines, capacities.
- Risk assessment regarding deadlines, costs, and quality.
- Stipulation of a cost bearer for special measures that incur costs.
- Binding feasibility statement based on specifications.
- Logistics and packaging concept.

A plausibility check for project-critical scopes is carried out as part of the Quality Technical Requirement (QTR). Any deviations from the requirements must be reported in writing to the customer's QTR contact person and escalated if necessary.

1.3.1 Selecting sub-suppliers

There may be additional customer specifications with regard to the selection of sub-suppliers. Compliance with the requirements of Formel Q in concrete terms (e.g. from Chapter 1.1.4) must also be ensured by the supplier within the supply chain and the subcontractors must be obliged accordingly.

Only the companies approved by the customer are to be used as sub-suppliers for painting and chrome-plating of components and for high-strength connecting elements and seals. These are to be obtained via the responsible procurement department.

If necessary, the Procurement and Quality divisions of the customer conclude appropriate interface agreements with the 1st-level supplier.

1.3.2 Logistics and packaging concept

In order to avoid transport damage, the supplier must store and deliver the goods in suitable transport means approved by the customer, taking account of the agreed conditions (time, temperature, light, shielding gas, ESD requirements etc.).
Unless otherwise agreed, packaging planning is the responsibility of the supplier. The supplier must provide evidence of the suitability of the transport protection concept and the packaging in pre-production (installed for PPD pilot production, verified for PPD pre-production).

The supplier is responsible for the cleanliness of the transportation containers as well as for compliance with cleanliness criteria during delivery (transfer of risk).

1.4 Quality framework agreement

The customer stipulates a zero failure strategy. In addition to the supply contract regulations on defects and other liability claims, the supplier must agree with the customer in writing to a quality improvement program in the case of any defects occurring. If no written agreement exists, the supplier is obliged to an annual halving of the error quota.

The supplier undertakes to take the Formel Q into account as part of its quality management system and to meet the requirements of IATF 16949, as far as project-specific applicable, and to ensure the corresponding requirements for the external resources (services and value creations) commissioned by it. The first step for the verification of this are internal self-assessments, that demonstrate the implementation and fulfilment of the requirements of the Formel Q papers and Automotive SPICE® (for software implementation or components and systems running software) and the Automotive SPICE® for Cybersecurity (for software implementations or software-operating components or systems that are relevant to cybersecurity), including remote sites used (remote functions) and external resources (services and added value) commissioned by the supplier.

As part of the offer assessment, recognized valid certifications according to IATF 16949 or declarations of conformity from recognized certification bodies are to be provided to the customer for the supplier evaluation (see chapter 2 following) along with corresponding self-evaluations according to Formel Q capability or where applicable according to Formel Q capability software at the request of the customer.

The supplier is responsible for the quality of the products and the documentation supplied to the customer. The supplier will manage and coordinate the sub-suppliers in the production and supply chain. The supplier ensures, using relevant contractual regulations, that documentation valid for the relationship between the customer and the supplier is likewise observed in dealings with sub-suppliers in the production and supply chain.

Should the customer require the 1st level supplier of a product in the production and supply chain to use specific (sub-) suppliers, directed part suppliers, the two parties must conclude a quality assurance agreement with each other. The 1st level supplier bears full responsibility for the quality of the goods supplied to the customer in this constellation.

1.4.1 Responsibility in the supply chain

The supplier (e.g. assembly supplier with assembly operations and responsibility for individual parts/assemblies) is responsible for ensuring that its sub-suppliers (and also directed part suppliers, service providers etc.) comply with the quality requirements. This includes the following points:

- The production process and product approval (PPF) is carried out by the assembly/system/module supplier. Deviations and exceptions must be contractually agreed in coordination between the supplier and the customer (e.g. interface agreement).
- Ensuring and verifying quality capability and performance in the supply chain.
- Defining quality assurance agreements. The customer's requirements must be taken into account accordingly.
- Ensuring all component-specific requirements.
- Consideration and assurance of functions, special characteristics of products and production processes, including the application and verification of required preventive methods (e.g. risk analyses, FMEA).
- Ensuring the flow of information between the contractual partners
- Specifications for handling D/TLD parts and other legal or official requirements (e.g. CCC, CoP) and the necessary documentation (e.g. IMDS or CDX).
- For suppliers of chemical products or suppliers whose scope of supply contains chemical products and which are relevant to customer service, proof of the supplier's conformability in accordance with the VW 50156 standard is required.
- Specifications for warranty and traceability of components.
- Successful processing of the qualification program for new parts integral (QPNI) according to Formel Q – New Parts Integral.
- Ensuring change management in the supply chain.
- Ensuring cybersecurity management in the supply chain.
- The contractor must provide the client with information about all software elements used in the delivered software (FOSS, 3rd party, in-house development).
- If, according to the customer's risk assessment, hedging measures on the scope of delivery are required that lie outside the added value of the supplier or its direct sub-suppliers, the supplier must transfer the requirement to subsequent delivery stages and support appropriate discussions between all partners involved.
- Ensuring qualitative and quantitative component supply throughout the product life cycle.

1.4.2 Transparency in the supply chain

PPF documents (PPF report, process approvals), QM plans, production steering plans, test plans and work instructions as well as results and assessments from sub-suppliers must be handed over to the customer in case of legitimate interest and on request or made available by the supplier for inspection.

Appropriate customer forms must be used to demonstrate the supply chain upon request.

1.4.3 Access to business and plant premises of sub-suppliers

The supplier will ensure that access for the customer to the business premises of the sub-suppliers is appropriately guaranteed. The required joint access must be agreed in advance between the customer and the supplier.

1.5 External service providers

External service providers may only be commissioned by the supplier after consultation with the customer.

In relation to the use of external service providers, the following regulations must be complied with:

- If the supplier buys in external resources in the form of processes, products and services, the customer's guidelines and requirements and IATF 16949 must be implemented and guaranteed. In particular, the provisions of ISO/IEC 17025 with regard to the accreditation of laboratories must be applied or these service providers must be approved by the customer accordingly. The supplier is responsible for documenting this for the customer.
- If, due to legal requirements regarding tests, the execution by specifically accredited laboratories or external service providers is required, the contractor must have these tests carried out in the accredited laboratories or with external service providers.
- If the supplier uses their own personnel or externally commissioned service providers to process complaints (e.g. for hall or field incidents) at the customer's site(s), this must be approved by the customer. As part of such activities, the supplier must ensure especially that:
  - No danger to rework or sorting personnel occurs due to necessary rework and sorting actions on site during customer operations
  - Applicable accident prevention, safety regulations and departmental safety regulations are observed
  - Production processes are not additionally disrupted and
  - The information and communication channels required during operation are adhered to.
- The customer reserves the right to use external service providers for its own purposes. The supplier is obliged to cooperate in partnership in a manner compatible with its legitimate interests (e.g. for production process and product approval or complaint processing).

The customer's contact with the service providers of the supplier will take place exclusively via the respective contact persons on the supplier's side. Suppliers ensure that contact with the service provider and access by the customer to its business premises are ensured in a suitable manner.

2 Quality criteria for award of contract

Before a contract is awarded, each supplier is assessed based on the prevention evaluation for quality capability and proven quality performance. If no quality ranking is available, a process evaluation of the respective production/development sites will be carried out before the contract can be awarded. The customer also reserves the right to subject the offer to a technical plausibility review (QTR), which can result in a project-specific rejection.

Contract award is not possible in the event of a C evaluation in one of the evaluation criteria (Q capability, Q performance, QTR).

Manufacturers of customer-relevant interfaces are evaluated and approved for award decisions according to a brand-specific procedure (see Formel Q capability).

Should one of the chosen manufacturing sites be set to “new business on hold” (“C” rating for Q performance / Q capability) after contract award, the supplier's management or corporate headquarters will take immediate action to upgrade it, with outside assistance if necessary.

2.1 Elements of assessment criteria

- Quality capability:
  Refers to the assessment of process suitability according to Formula Q capability and Formula Q software capability.
- Quality performance:
  Refers to the performance assessment of the supplier in the project and series production phases, based on criteria such as delivery quality, production process and product approval, adherence to schedule, and field and 0 km complaints. The supplier’s performance is also assessed for the provision of spare parts (After Sales). The results are included in the supplier’s overall assessment. Failure to meet quality requirements in the project, series production and After Sales can also result in escalation into the Critical Supplier programme and could lead to a “C” rating.
- Quality Technical Requirement:
  Refers to the project-specific review of technical plausibility of the offer prior to contract award. The assessment by the customer, if necessary, takes place in a discussion between the supplier and the customer (see Formel Q – New Parts Integral). If no QTR documents are transmitted after a request, this also leads to a C classification and thus to exclusion from the award.

2.2 Safeguarding measures in conjunction with award of contract

For awards that come into effect according to a set schedule and/or various production sites, the supplier must present a corresponding action plan/deployment concept (e.g. safeguarding of greenfield/brownfield sites) at the time of the award.

2.3 Concept Responsibility Agreement

The Concept Responsibility Agreement (KVV) is agreed between the customer and its suppliers as part of the award process and is a prerequisite for nomination. It serves the early, binding delimitation of responsibilities for the development of products and services (e.g. software) between the customer and the supplier.

As part of the request, the supplier is given a component-related concept responsibility quota of the customer.

The agreed concept responsibility quota applies in case the supplier delivers defective goods if and to the extent that the analysis of the defective products and services reveals a concept or development-related defect.

The concept responsibility quota agreement does not apply if responsibility cannot be determined on the basis of the analysis of the defective products and services. In this case ("No trouble found" kFf/NTF), the costs will be split equally between the supplier and the customer until the cause is found conclusively.

Further information can be found on the ONE.KBP in the "Information\Divisions\Quality Assurance\Basic Requirements\Regulations (QA)" directory and in the KVV framework contract.

3 Cooperation with suppliers during the product emergence process

3.1 New parts integral qualification program

The qualification program for new parts integral (QPN Integral) comprises the procedure for assuring the maturity level for new parts (as per VDA RGA), the QTR, the PPF process (VDA volume 2) and the certificate of series capability (SFN, previous multi-staged 2-day production).

QPN Integral is based on the milestones of the Volkswagen Group Product Emergence Process (PEP) and is used by the customer.

The Maturity Level Assurance of delivery scopes as a project management method is based on a maturity level milestone philosophy. The customer's Quality Assurance department plans a schedule for these maturity levels and agrees this schedule with the supplier after contract award. This means that suppliers (and also sub-suppliers in some circumstances) of critical delivery scopes and the customer are integrated in the product emergence process at an early stage (see Formel Q New Parts Integral and VDA RGA).

All suppliers are obliged to implement the Maturity Level Assurance process and associated modules.

3.2 Quality planning

The supplier must ensure that the maturity levels specified in Formel Q – New Parts Integral are reached on time. The supplier must complete and keep the quality framework schedule up to date in such a way that all product and Q-relevant key deadlines as well as the project deadlines specified by the customer are covered.

The supplier is responsible for the implementation and presentation of suitable analyses, feasibility studies, construction and process FMEA and quality assurance and measurement concepts derived from this (e.g. statistical tolerance chain analysis incl. influences of add-on parts and assembly variance), process flow charts as well as equipment and maintenance planning.

In any case, the supplier shall ensure that the current state of the art is applied.

The supplier must create inspection plans and must coordinate them with the customer on request. The inspection plans must take account of all previously defined inspection characteristics (in particular for D/TLD scopes) (with regard to test equipment, see also 1.2.2).

The supplier must independently develop a CoP test plan for the CoP-relevant scopes (Conformity of Production legislation valid worldwide) and make these available to the customer on request. The supplier will coordinate the components, bodies and body parts necessary to perform the CoP inspections as well as their procurement with the customer prior to the conclusion of the contract.

The supplier must coordinate with the customer the characteristics for which a 100% end-of-line inspection is necessary.

The functionality of the scopes must be 100% assured regardless of the employee by suitable testing equipment. Any deviations must be agreed with the customer in writing.

For products for which an expiry date must be taken into account, the latest usability must be specified together with the customer before the contract is awarded.

At the request of the customer, the supplier will demonstrate the manufacturability of all nominated components in detail. The supplier will ensure the personal participation of authorised and qualified representatives of its company, sub-suppliers and service providers.

The components are to be 100% measured with regard to relevant characteristics until process capability has been proven. The test characteristics must be coordinated with the customer as part of quality planning. The measured values must be recorded and evaluated statistically. Individual verifications can be requested by the customer if necessary.

During quality planning, the damaged parts analysis process for field-damaged parts must also be taken into account (considering the VDA volume “Schadteilanalyse Feld” – analysing damaged parts in the field) and all necessary prerequisites for this must be implemented before SOP. Trigger criteria for the NTF process (no trouble found) must be agreed with the customer. Furthermore, all requirements and tests required for product safety must be included in the quality planning.

If the safety function of safety-relevant scopes (e.g. airbag module, seats) is yet to be implemented (e.g. with sample deliveries), this property must be clearly and permanently marked. The labels (also electronic labels) must be recognisable or readable in an installed condition and must be coordinated beforehand with the customer.

3.3 Production process and product release (PPF)

The PPF process is valid until the end of service (EOS) and is generally conducted on the basis of VDA volume 2 or another acceptance procedure agreed with the customer. Already from the first parts production and delivery to the PPF of the first plant, the supplier is obliged to provide the documentation in BeOn for all delivery volumes. Further detailed requirements of the customer regarding the PPF procedure can be found in Formula Q New Parts Integral.

At the request of the customer, semi-finished products/individual parts of the product or the respective scope of supply must also be provided for production process and product approval (this applies for the entire product life).

The respective valid version of a reference sample (sample for PPF) and the inspection reports must be kept by the supplier in accordance with the legal and regulatory requirements, but

at least for a period of five (5) years after termination of the contract (even in After Sales) if no further agreements have been made with the customer.

For software-based systems, the supplier must be able to implement all error corrections in the software that the customer deems necessary up to 15 years after the end of production (EOP - component). The supplier must ensure that the delivered software is kept available and that all necessary conditions for processing and delivery of the software are met in compliance with the requirements of KGAS.

The following customer-specific regulations apply to the handling of directed parts for PPF certification:

- The 1st tier supplier is responsible for implementing the PPF process of directed parts in higher-level assemblies. In addition, all results for self-procured components and directed parts must be presented to the customer.
- Details must be defined in the PPF coordination discussions between the customer and supplier. This applies especially where sample testing of variant rich assemblies is necessary, for assemblies with diverse equipment options (such as seats and door trim panels).
- If there are several receiving plants, agreements must be made with the first plant to use the parts, generally this is also the type leader plant, or project specific.
- Assemblies such as the front end module, cockpit, axles, seats, fuel tank, roof modules, complex welded assemblies, etc. may also contain directed parts that, for technical reasons, are delivered as individual parts directly to the customer in the Volkswagen Group company for PPF release. In such cases, the customer and the 1st tier supplier will define the scope of services and responsibility of the supplier in an interface agreement when the contract is concluded.

3.3.1 Components requiring certification

Certificates of components are a mandatory requirement for type approval and approval of the customer's products. Country-specific approvals must be carried out in good time so that the results are available on the agreed date.

If there is a certificate requirement or the customer requires voluntary certification, the associated valid certificates (e.g. component certificates and Factory Inspection Reports) must be uploaded into the customer systems as an appendix (e.g. LiOn on the ONE.KBP.

The supplier must ensure that all required certificates – both in the project and the production phase and in the delivery of spare parts – are valid and available at all times. The certificates (e.g. CCC, radio certificate and Factory Inspection Reports) must be valid for at least two more months at the time the production process and product approval is set up.

The supplier will independently and in good time arrange for a new request for and/or extension of certificates if statutory requirements change or the validity of certificates expires.

Changes to certificates must be agreed with the customer in advance. The loss of certificates must be reported immediately in writing in order not to jeopardize the type approval and approval of the customer's products.

3.4 Software

The supplier commissioned with the creation of the software must create a complete functional and release documentation for this product in accordance with VDA volume 2 and Automotive-SPICE® process reference model and deliver it to the customer along with the software.

The software must be state of the art. The commissioned supplier must meet at least the following requirements:

- applying the Formel Q capability software,
- use of the Group base requirements for software (KGAS),
- applying of the cybersecurity base requirements (CSGA),
- the development of software-based systems compliant at least with Automotive SPICE® capability level 2,
- establishment and evidence of a cybersecurity management system in accordance with the VDA volume "Automotive Cybersecurity Management System – Audit" (ACSMS).

Automotive SPICE® assessments and cybersecurity management audits are to be included as part of the audit planning of the software development supplier.

4 Quality measures during series production

All of the following provisions apply for the entire period of the supply relationships up until EOS.

4.1 Ongoing assurance of process capability

The supplier must provide for tests during series production in order to safeguard its manufacturing process. The type and scope of tests during series production must be coordinated with the customer, e.g. in the context of concept and test planning. The agreed tests during series production must be performed in accordance with approved test planning and verified upon request.

If the capacities to be produced change significantly, inspection frequencies must be fundamentally re-evaluated and coordinated with the responsible authorities of the customer.

For the defined product/process characteristics, the process capabilities must be determined and verified continuously over the entire production time.

The supplier must record critical attributes (for example, from the process FMEA, the product FMEA or cybersecurity risk analysis) and must document this. An assurance concept must be presented and coordinated with the customer for these characteristics as well as special characteristics and function-relevant characteristics specified by the customer (e.g. functional dimensions).

The determination and assurance of continued process capability (using PFU, see IATF 16949) is to be implemented in accordance with VDA volume 4.1 and VDA volume 5. Valid customer standards must be observed.

The minimum scope of the special characteristics that are measured to determine the Cp and Cpk values will be defined in the FMEA for the product and the process. These documents can be viewed at any time by the customer.

The customer orientates its processes with a process capability Cpk of 1.33. If the supplier cannot comply with the process capability Cpk >= 1.33 or if SPC cannot be used, an employee-independent 100% examination for the defined product/process characteristics of the scope of supply must be implemented.

The supplier is required to monitor and manage all defined reportable functional dimensions, which are to be set out in the inspection plan. The control of functional dimensions is an important element in assuring process capability. The supplier will provide its measurement data for defined functional dimensions to the customer on request.

The periodic calibration of all test equipment used will be documented. This also applies to process-integrated test equipment that is installed on machinery and used for process control.

In the event of system malfunctions, the parts in the plant must be excluded from further use. This must be implemented primarily through technical measures.

4.1.1 Tool management

The supplier is obliged to provide documentation of a tool management system as well as scheduled and preventive service / maintenance for machinery and tools. Tool maintenance and modifications will be documented. Any loss of tools or damage must be reported to the customer immediately (see VDA volume 6.3).

4.2 Product safety and product liability

The customer has responsibility for the final assembly as well as overall responsibility for the finished product, the vehicle. This includes all purchased parts.
The primary responsibility for the products used in the end product lies with the supplier. The supplier will 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.

Furthermore, the supplier must have documented processes for the management of safety-relevant products and production processes that also include its upstream supply chain.

In the event of damage and/or if requested by the customer, the supplier must be able to demonstrate that it has discharged its entrepreneurial duty of care in order to preclude faults from the product.
The supplier takes measures in its organization and obliges its employees as well as its sub-suppliers to ensure that:

- a highly-developed appreciation of quality exists throughout the company,
- the required product safety is guaranteed when components are developed,
- that the product also covers the required functional safety and cybersecurity,
- a product conformity officer as per VDA volume “Product Integrity” is nominated and available at the supplier and for the next level of the supply chain and is known to the product conformity officer of the respective contract partner,
- the product conformity officer (and a qualified representative) of the 1st tier supplier is entered in the supplier database (LDB) and kept up-to-date,
- the quality capability of the production processes is guaranteed and proven,
- the likelihood of defective products is minimized using appropriate quality assurance measures during series production,
- defective products are identified as early as possible in the production workflow using appropriate measures (to minimize costs/waste of added value),
- quality data and the compliance tests required by law and regulatory authorities are documented in sufficient and transparent detail in order to prove that the products have been manufactured in accordance with all relevant laws and safety standards,

- a material tracking system can be used to pinpoint the effects of any faults that occur if required,
- all relevant personnel receive detailed information and training on product safety and product liability issues (among others functional security and cybersecurity),
- all sub-suppliers use comparable systems analogous to the Formula Q documentation that match the customer's requirements,
- components with a limited durability meet special labelling requirements, particularly in accordance with the manual for original parts suppliers.

4.3 Products requiring documentation and special verification

The supplier must regulate corresponding checks and proofs in the production control plan for the Conformity of Production (CoP) relevant scopes.
The supplier shall continuously provide evidence in accordance with its CoP inspection planning and make it available to the customer on request.

4.3.1 D/TLD verification

In addition to the general requirements of the QM system, product-specific quality verification for products requiring documentation is to be conducted by the supplier and archived for at least 15 years after the end of production (see VDA volume 1). These include technical documentation marked with “D”, “TLD” or “A” such as drawings, tables, manufacturing approvals, technical terms of delivery, inspection specifications, sample reports and other quality records that may be required as evidence and used for the purposes of exoneration. This also includes evidence of planning activities, selection and qualification of personnel, suitability of test equipment, and process capability analyses and correspondence.

Suppliers are required to use the system for every product to be supplied requiring documentation.

The systematic and consistent procedure for verification is checked and evaluated on a spot-check basis by the supplier with a D/TLD self-audit and by the customer as part of process audits, technical audits or other supplier visits.

On request, the proofs must be made available to the customer.

4.3.1.1 Labelling of technical documentation

The customer has three labelling variants of equal importance (the older “D”, “TLD” and “A”).
If the supplier uses labelling other than that listed above for its documents and records, the supplier must provide a key that shows the correlation to the labelling listed above (e.g. an overview matrix with the labels for all customers and internal labelling) as managed specifications.

4.3.1.2 Self-audit – products requiring documentation (D/TLD self-audit)

To check the implementation of the requirements for products requiring documentation, the supplier must perform and document a site-specific D/TLD self-audit independently every 12 months (with a validity period of 12 months) in accordance with the current requirements catalogue for components requiring documentation (form – TLD Quality Audit; see ONE.KBP. The supplier is obliged to use this procedure in the same way for its supply chain, purchased parts and outsourced process steps. The date of the last passed D/TLD self-audit must be documented in the BeOn IT System at the time of the PPF process. The obligation to the D/TLD self-audit begins with the first PPF procedure of the commissioned product.

If defects are detected during the audit, it is expected that the supplier will immediately implement the necessary improvement measures independently.

The supplier will check the implementation of the improvement measures and their effectiveness in a new D/TLD self-audit carried out independently. Corresponding documentation of this must be maintained.

The results of D/TLD self-audits must be archived for at least 15 years and kept available for verification by the customer at all times. Evidence of the supplier's activities to ensure compliance with the quality requirements must be guaranteed at all times. All specifications as per VDA volumes 1 and 6, part 1 and IATF 16949 and customer-specific requirements must be taken into account during the verification process.

On request, the results of the D/TLD self-audits must be made available to the customer.

4.3.1.3 Product group specification / product selection

The supplier must ensure that all products requiring documentation or all specified characteristics requiring verification are considered as important parts/characteristics. During auditing, for each characteristic requiring documentation of all D/TLD scopes to be supplied, sample products must be selected for which compliance with specified requirements must be verified by the process and product audit. The reference parts are selected from a delivery list of parts requiring documentation for the customer that is permanently kept up-to-date by the supplier. The random sample size of the product audit must be defined appropriately for the product and the characteristic to be checked, i.e. a sample product selection is made from the delivery list in which all characteristics requiring verification occur. Furthermore, the supplier is required to name characteristics for its product and manufacturing process other than those already named by the customer and to categorize them as function- and safety-relevant.

4.3.1.4 Assessment of individual questions / audit results

Each question is assessed with regard to consistent fulfilment, including in process assurance, as follows:

Circumstances	Assessment
Requirements completely fulfilled	Yes
Requirements not or not fully fulfilled	No

Table: Assessments

All relevant requirements must be fulfilled, and deviations must be corrected with an improvement program by the supplier. If the supplier detects deviations that can directly influence the product quality (e.g. missing test equipment), the supplier must define measures (e.g. external testing) to ensure immediate safeguarding of the product. Should these deviations be determined as part of a PPF procedure, they must be taken into account in the supplier's risk assessment.

If the supplier is still unable to meet the requirements, it must notify the receiving plants and its contact person in the customer's Procurement division without delay.

4.3.1.5 Audit report / action plan

The D/TLD self-audit report includes the following documents and evidence:

- Cover sheet "Documentation of D/TLD Parts Quality Audit" specifying the parts selection, D/TLD characteristics, the results of the product audit (within a validity period of max. 12 months) and fulfilment of characteristics requiring verification; determination of immediate measures required if customer requirements are not fulfilled; deadline for any necessary improvement programme (final deadlines of all measures to be implemented).
- "List of Requirements for Parts Requiring Verification" with an assessment
- Action plan for deviations identified in relation to the questions in the requirements catalogue (naming of weaknesses/measures, rectification date and responsibility)
- Results overview(s) of the product audit with the test results for the parts selected, including all D/TLD characteristics that must be specially marked.

For products in the pre-series phase, the supplier must ensure that all questions have been answered with "Yes" until the 0-series (date of PPF process completion).

For products in series production, the supplier must immediately define further measures in the event of detected deviations and inform the quality assurance of the all receiving plants in writing.

The weaknesses reported must be eliminated by the stated end date.

If the above points are not fulfilled, the quality capability is downgraded to "C" (new business on hold) and, if necessary, the supplier is added to the Critical Supplier program.

4.3.2 Verification – chemical products

In order to be able to use chemical products in vehicle construction, vehicle operation or After Sales, the supplier must ensure that all binding obligations, in particular national and international laws and official requirements, as well as the requirements of the customer are met (e.g. VW 50156). Suppliers of chemical products must verify the conformity capability of the supplier in accordance with the VW 50156 standard. It is assessed on the basis of the Chemical Compliance Assessment (CCA).

4.3.2.1 Chemical Compliance Assessment (CCA)

A CCA is performed on the basis of a CCA self-evaluation conducted once a year (every 12 months) by the supplier. The CCA self-evaluation must be transmitted to the customer without prompting once completed. In addition, the customer decides whether an on-site CCA is required on the basis of the result of the CCA self-evaluation. Suppliers whose CCA self-evaluation was positive are selected at random for an on-site CCA. For aspiring suppliers, an onsite CCA is generally conducted on the basis of the CCA question catalogue after the CCA self-evaluation. The CCA self-evaluation and/or on-site CCA are carried out at the supplier's headquarters.

In the event of deviations from conformity, the responsible department of the customer can escalate the supplier into the Critical Supplier program.

The on-site CCA is carried out by trained employees of the Volkswagen Group. Suppliers are classified as “compliant” or “non-compliant” with regard to the assessment of the questions and the overall assessment.

The CCA documents are available on the ONE.KBP.

4.4 Identification and management of problems

4.4.1 Complaints management

In the course of handling complaints, the customer and its suppliers acquire important early warning information on new and previously unknown product problems.

The supplier is obliged to immediately and systematically rectify any defects that occur or that are reported by the customer within the framework of existing regulations and demonstrate the sustainability of its measures.

Products from suppliers for which non-conformities or suspicions of defects in the product and/or production process must immediately be reported by the supplier to the customer[2], the corresponding logistics centers of the Volkswagen Group companies who have received the same scope of delivery and, where applicable, other partners in the supply chains.

If, due to time constraints, the supplier initially only gives a verbal notification, a written confirmation must be submitted within 24 hours or by the next regular business day.

[2] The contact details can be found in the complaint procedure.

At the request of the customer, the supplier must take immediate action to ensure rectification. This includes:

- Immediate sorting out/reworking of stock at the receiving plants
- Implementation of a 100% effective goods filter to prevent delivery of more faulty parts
- Sending a representative with the authorization to take decisions to the customer's Quality Assurance department to coordinate fault rectification on site.

If this cannot be implemented by its own personnel, the supplier must commission a service provider approved by the customer with the processing in coordination with the customer. The supplier will use the systems provided by the customer for all complaint processing and handling.

Inspection reports, delivery quality evaluations and rejected products will be made available to the supplier in order to address faults immediately and shorten the analysis process in accordance with the contractual agreements, and must immediately be analysed by the supplier. Corrective measures must be defined, scheduled and implemented for all fault causes, and their effectiveness must be verified. This also includes the necessary measures at sub-suppliers up to and including on-site assessment/audit by the supplier and, if necessary, by the customer. In the event of any deviations from the specifications, the supplier must conduct a qualified risk assessment and communicate this to the relevant divisions of the customer. It must be ensured that the customer is supplied with OK products approved by the customer.

The customer reserves the right to perform or demand additional inspections (e.g. goods receipt inspections) if there are repeated quality problems.

Regardless of the agreed ppm quotas, corrective measures and improvement programmes must be developed, presented to the customer and implemented sustainably if fault patterns occur repeatedly.

Key figures defined in target agreements, e.g. ppm quotas, A/B faults and vehicle audit target values are binding and are used for supplier assessment. If the agreed target values are not reached for existing deliveries of parts for series production, the supplier may be escalated to the Critical Supplier programme.

In the event of repeated faults, breakdowns and complaints about safety-relevant scopes of supply that reach the customer, suitable methods for risk analysis and minimisation according to Formula Q capability must be independently implemented by the supplier and submitted to the customer on request. To avoid repeated faults, the supplier must generally revise the process FMEA after every complaint and submit it to the customer on request.

During the service life of the product (until end of service – EoS), the supplier will actively participate in the customer's fault rectification process. Product analysis on the supplier side must also be ensured after the contractually agreed warranty period. This applies in particular to components for which analyses are requested for market-specific and legally relevant reasons (e.g. defect reporting) or to demonstrate compliance with specifications.

4.4.1.1 0 km complaints

The customer reserves the right to determine and evaluate the quality of products that cannot be assessed upon delivery (especially raw parts and primary material) only in the subsequent process (e.g. ppm rates, value added losses per part). In the context of continual quality improvement, the supplier must reduce the amount of rework required in addition to the reject rate.

As soon as the supplier has been informed of the occurrence of complaints or after receiving the damaged part – if this is essential for the analysis – the customer must be informed in writing in an 8D report, at the latest on the next regular working day, about the measures that have been taken. Initial analysis results must be presented to the customer within three (3) working days and a usage decision regarding parts blocked by the customer must be issued. If there is no usage decision from the supplier within this time frame, the blocked parts can be scrapped at the supplier's expense. The 8D report must be updated with the long-term measures within the time window specified by the customer, but within a maximum of 10 working days. If this time frame cannot be complied with, the supplier must submit an interim report within this period.

When the complaint is reported, the supplier must immediately consult with the customer to agree on the amount of time required for the analysis (date of completion) if the stipulated completion dates cannot be met. If the work on addressing complaints regarding products (8D report) results in the completion dates being exceeded without any prior consultation with the customer, the complaint will be closed out after four (4) weeks at the supplier's expense regardless of the question of responsibility. The supplier remains obliged to send the completed 8D report.

Unless otherwise requested by the customer, the 8D report must be completed at the latest within 20 working days. Where necessary, evidence of the delivered generation statuses and corresponding delivery notes must be presented.

4.4.1.2 Reworking and sorting activities

The customer is producing on up to seven (7) days per week on a three-shift basis, and therefore also outside normal business hours on a regular basis. If on-site service or a permanent contact person cannot be guaranteed by the supplier, this means for the customer that coordination with the supplier is not possible at short notice.

In the event of complaints outside of normal business hours, the customer is therefore entitled to implement measures that cause the least possible damage and to pass on the associated costs if the supplier is informed at the start of normal business hours.

This provision also applies if the supplier does not fulfil its obligation to rectify the damage to the extent required.

The supplier must ensure that the personnel employed for sorting and reworking activities are sufficiently qualified for the planned scope of work, and that the workplace equipment, infra-

structure and personal equipment used by the personnel assigned or commissioned by the supplier are state of the art. The necessary documentation for qualified performance of the work will be created in full by the supplier. The supplier shall provide evidence of the effectiveness of the rework.

Rework and deviations in important features must be coordinated with the customer.

4.4.1.3 Field complaints

During the service life of the product (until EOS), the supplier will actively participate in the customer's fault rectification process.

Rejected products from the field that are recorded in the corresponding systems must be processed by the supplier within a maximum of 20 working days after receipt of the complaint or return delivery of the damaged part.

The necessary sustainable measures must be initiated and their effectiveness checked. This also includes the necessary measures with sub-suppliers. The customer's contact person must be informed in writing of the measures taken, in the form of an 8D report.

In derogation from the feedback deadline mentioned above, reduced processing times apply to prioritised damaged parts (e.g. breakdowns, customer quality and security focuses of the customer). Within three (3) working days of receipt of the complaint or damaged part, the available analysis results and planned corrective measures must be communicated by means of an 8D report. In these cases, the 8D report must be completed within 10 working days.

If the specified time frame cannot be complied with, the supplier must immediately consult with the customer to agree on the amount of time required for the analysis (date of completion). If the work on addressing complaints regarding products results in the completion dates being exceeded without any prior consultation with the customer, the complaint can be closed out at the supplier's expense regardless of the question of responsibility. The supplier remains obliged to send the completed 8D report.

Until the effectiveness of the corrective measures has been verified by the supplier, the customer can demand special measures (e.g. outgoing goods inspections at the supplier, additional product tests). To avoid repeated faults, the supplier must generally revise the process FMEA after every complaint and present it to the customer on request.

4.4.1.4 Analysis parts with export or transport restrictions

The supplier must also ensure an analysis of components that are omitted in a market with export restrictions for analysis parts unless otherwise agreed with the customer. To this end, a contact person and a delivery address must be designated by the supplier in the respective market. For the analysis, the products are provided by the customer in the respective market.

If there are transport restrictions for parts (e.g. hazardous goods), the aforementioned procedure can also be agreed for individual markets in the name of economic efficiency.

4.4.2 Early warning system

The supplier must play an active role in early warning systems (hotline, retail task force Product Security Incident Response Team (PSIRT), etc.), for example with resident experts on site, to assist with the early detection of field faults. With new product launches or with 100% obligation to report damaged parts in the market under observation, the supplier is obliged to accompany the defect rectification process on site.

Where purchased parts give rise to field complaints, the supplier will promptly transmit its analysis results and corrective measures to the customer through the relevant IT systems. The content and procedures of these analyses shall at a minimum satisfy the requirements of the VDA publication “Field Failure Analysis”. The customer may require that other analyses be carried out either instead of or in addition to those stated in the VDA publication.

4.4.3 Obligation to conduct own field observation

As part of its product monitoring obligation, the supplier is responsible for conducting its own market observation for its products and notifying the customer of any relevant results obtained. The supplier will notify the customer immediately of any delivery call-off anomalies anywhere in the world (e.g. increased demand for parts / spares, purchased part write-up list).

The supplier is obliged to establish a monitoring system and effective cybersecurity incident management with regard to possible hazard potentials.

In order to fulfil its obligation to conduct its own field observation, the supplier must have suitable processes and resources available.

4.5 Continuous improvement process (KVP)

The supplier is obliged to have and provide evidence of a documented process for continuous improvement (KVP). The supplier will reduce its internal and customer-relevant reject and rework rates by taking the relevant measures. Evidence of the process must be presented to the customer on request.

4.6 Change management

Changes to the production site, production process, product including software stands or the supply chain can lead to the loss of market approval of the vehicles and/or products and must therefore be communicated in good time so that the common goal of a status-appropriate development/quality release (location release, production process and product release) can be achieved.

The supplier will notify the customer in advance of all changes in its process chain (site, product, process, supply chain) and obtain written consent from the customer before such changes are implemented. Changes to DUNS no., e.g. due to a change of company name, changes to the ownership of the production site (mergers, sales etc.), expansions of delivery quantities and changes in the target plants must also be reported to the customer in advance and delivery capability must be ensured.

Further approval and information obligations in the event of changes are regulated by the trigger matrix of VDA Volume 2 "Production Process and Product Release".

In the event of any relocation (including within a given production site), a project plan and continuity concept must be drawn up in consultation with the customer before implementation.

In the event of relocations of the production site to another postal address, the supplier must ensure that this production site is entered in the supplier database (LDB) with its own DUNS number, that there is a verified positive assessment of the quality capability according to Formula Q capability and that all required permits/certificates are in place.

Material changes to products, operating supplies and process material as well as the expiry or loss of approvals must be actively communicated to the customer by the supplier immediately in writing and require the transmission of an updated material data sheet via IMDS or CDX.

A new PPF procedure must be carried out by the supplier in consultation with the customer. Approval by the customer is required before delivery from the new production site can take place.

Failure to observe these regulations will result in a “C” rating (new business on hold).

4.7 Layout inspection

The supplier must assure quality by carrying out a regular layout inspection of its scope of supply in accordance with IATF 16949 and in accordance with VDA volume Robust Production Processes. The customer requires a complete layout inspection at least every three years. The layout inspection starts with the completion of the PPF process. Layout inspection cycles may be defined by other legislation, government agencies or component-specific requirements (e.g. in the specifications), and must be implemented. If the capacities to be produced change significantly, check frequencies must generally be reassessed and coordinated with the customer.

Unless agreed otherwise with the customer, the scope of the layout inspection to be presented will correspond to that of the PPF product process and product approval. The results must be documented internally, stored securely and presented to the customer on request.

A layout inspection of the products must also take place in the last year of delivery.

Products with specific and/or authorisation-relevant characteristics (e.g. D/TLD markings) must be subjected to a layout inspection every 12 months.

The scope of the tests (including dimensional accuracy, laboratory checks, endurance tests) in the annual product audits as part of the layout inspection must be coordinated with the customer's quality departments during the project phase and adjusted accordingly in the event of changes/complaints.

4.8 Lessons learned

The supplier will take the information resulting from experience with both previous and on-going projects (e.g. from field failures, 0 km complaints, project performance, product safety, functional security and cybersecurity), and apply it as lessons learned to new projects and development work as well as to its ongoing production operations and in the supply chain. Measurable improvement with reference to previous key performance indicators must be documented for new models.

The lessons learned results relating to the product or process must be assessed with the FMEA and included if necessary. They must be presented to the customer on request.

4.9 Handling of warranty claims and special situations

The contractual customer-specific regulations of the companies for the further loading of supplier-caused additional expenses (e.g. in the case of field, 0km and CKD complaints) apply. The supplier's responsibility for field failures during the warranty period will be determined using a spot-check procedure in accordance with the VDA publication "Field Failure Analysis" based on Technical Factors (TF) or the Claims Acceptance Rate (AQ).

The supplier's responsibility for field failures during the warranty period may be determined by other means if the defect is corrected without parts replacement (e.g. software).

The technical and commercial handling of defective goods supplies will generally take place independently via the customers that use the product regardless of which customer placed the order.

The customer reserves the right to decide independently whether to implement quality-related measures (special situations). The term special situations refers, for example, to goodwill payments or recall, service, or workshop measures.

Suppliers will bear a portion of the customer's costs that is proportionate to their share of responsibility. The share of responsibility will be determined to reflect causation (principle of causation). The share of responsibility determines the percentage of total costs incurred that the supplier must bear.

Volkswagen Group will coordinate the handling of special cases affecting more than one customer.

Starting from an NTF percentage of 30%, the supplier is obliged to initiate an NTF (no trouble found) process in accordance with the VDA volume “Field Failure Analysis”. The number of underlying damaged parts per year can be found in the following table.

Brand	Number of damaged parts
Audi AG, Porsche AG, Bentley, Skoda, SEAT	10
VW Passenger Cars, VW Commercial Vehicles	20
TRATON, Lamborghini, Bugatti	To be agreed on a customer-specific basis

Table: Damaged parts per year for NTF process

4.10 Technical Supplier Reviews

Technical Supplier Reviews (TRLs) are not a substitute for process or product audits. They are a quality assurance measure for product quality. Further details can be found in Formula Q capability.

4.11 Critical Supplier program

In the event of deviations from quality requirements within project and series (for example, delivery quality, product process and product approval, deviations in the project, incorrect data in the IMDS entry or CDX material data sheet, complaints from the field, non-conformal CCA and red TRL evaluation), the customer can add the supplier to the Critical Supplier program. The program has four escalation levels:

Level 0 Supplier has problems
Level 1 Supplier is unsuccessful in solving these problems
Level 2 Supplier requires outside help
Level 3 Supplier is unsuitable for VW Group (new business on hold)

Level ratings from 0 to 2 are assigned by the customer's Quality Assurance department.

A Level 3 rating (“C” – new business on hold) may only be issued in a Top Q discussion by Group Procurement Supplier Management.

In its problem-solving process in preparation for the Top Q meeting, the supplier must apply quality management tools, including Pareto analysis and the Ishikawa method as a minimum. The resulting measures and deadlines must be presented as a step-down diagram. Here it is absolutely necessary to use suitable key performance indicators (KPIs). Corresponding guidelines will be included with the invitation.

Group Procurement Supplier Management reserves the right to directly assign a Level 3 rating where the circumstances warrant this.

A “C” rating may be overridden only by Group Procurement Supplier Management, and only after an appropriate period of time. Improvement measures that have been proven to be effective, performance indicators, and agreements reached in the Top Q meeting are the basis for any such decision.

A classification in the program "Critical Suppliers" ("Special Status" of the customer) must be displayed to the certification company by the supplier on its own responsibility.

The customer must be informed about the further procedure between the certification company and the supplier.

5 Terms and abbreviations

0 km faults	Faults detected when the part is delivered or on the assembly line in the customer's plant conducting the installation.
1st tier supplier	Direct supplier of the customer.
A, B, C faults	Faults are classified according to severity using the following categories: A1 Safety risk, breakdown A Unacceptable, will definitely result in a complaint B1 Severe impediment, obstacle, significantly outside specified standards B Unpleasant, disruptive, complaints anticipated, likely disruption of customer operations C1 Noteworthy complaint C Requires improvement, complaints and disruption of customer operations possible if frequency increases.
AIAG	Automotive Industry Action Group – worldwide organization of companies from all over the world to exchange information to promote the automotive industry.
Attributive characteristics	Attributive characteristics are characteristics for which only the number of faults is determined: • Percentage of faulty units (for example, 1.8% faulty bolts) • Average number of faults per unit (for example, 3 paint faults per vehicle)
Design type approval (BMG)	Issued by the customer's responsible development department. See standard VW 99000.
BeOn	Online sample approval system (**Be**musterung **On**line) supports paperless processing of the PPF procedure (previously: initial sample testing) for purchased parts and in-house parts. See ONE.KBP for instructions on activating and using BeOn, (Information\Divisions\Quality Assurance).
Special characteristics	Critical product, process, and test characteristics with functional relevance must be defined in cross-departmental teams using "System FMEA Product". Other special characteristics can emerge, e.g. from the "System FMEA Process" that follows. Besides statutory, safety-relevant, design and process-oriented aspects, these also include key customer-oriented aspects.
Brownfield	Auditable process that is not present in an existing production facility.
CCC	**C**hina **C**ompulsory **C**ertification. Certification system valid in China.
CDX	**C**ompliance **D**ata **E**xchange**.** In the same way as for material data recording in the IMDS system, the CDX system is available for non-vehicle-specific products. CDX information (www.cdxsystem.com) is also transferred to the MISS system via download and checked there.
Certificate of series capability	(German: Serienfähigkeitsnachweis) The certificate of series capability is the Volkswagen Group's instrument to avoid new parts quality and capacity problems. A certificate of series capability, previously: 2-day production (2DP), must be performed, documented by the supplier and the result must be presented to the customer on request. The customer reserves the right to be present on site when the 2TP is carried out after consulting with the supplier.

CoP	**C**onformity **o**f **P**roduction**.** Includes the verification to ensure that the manufactured vehicle from series production continues to match the approved type.
Cp	**P**rocess **C**apability Index – an indicator for the variance of a manufacturing process.
Cpk	**P**rocess **C**apability) – process capability index that in addition to manufacturing process variance, also takes account of the position of the median value in the frequency distribution compared with the specification tolerances.
Cybersecurity Incident	Individual or a series of undesirable or unexpected cyber security events that prove the exploitation of a vulnerability and could have a significant influence on the security of a component/function (e.g. cause damage to the asset).
Cybersecurity Incident (Response) Management	Process and responsibilities for dealing with cybersecurity vulnerabilities (weaknesses), cybersecurity vulnerabilities or cybersecurity incidents (incidents), for determining the cause (and affected products) and remedying them by appropriate means as well as communication with the client.
Directed parts	(German: Setzteile) Where an organization manufactures assemblies using parts that the customer requires it to purchase from specific suppliers, such parts are referred to as directed parts (see VDA vol. 2).
D-TLD	Documentation obligation/technical guideline for documentation – Documentation is mandatory for all objects and products subject to safety laws and/or internal Volkswagen provisions which could endanger the life of the user of the product in the event of failure. All objects/products requiring documentation are listed in the Technical Guideline Documentation, TLD.
EOS	**E**nd **o**f **S**ervice. From then on, spare parts will no longer be made available.
ESD	Electro Static Discharge – electrostatic discharge between two charged bodies. Unprotected contact with electrostatic components can result in their destruction.
FMEA	**F**ailure **M**odes and **E**ffects **A**nalysis – analysis of potential failure modes and their consequences.
Formel Q – New Parts Integral (QPNI)	The “Formel Q – New Parts Integral” brochure describes the modular and cross-departmental method of component qualification.
FOSS	Free and Open **S**ource **S**oftware is any software distributed under terms of use and license, the essential nature of which typically includes the distribution or disclosure of the source code of the software when it is distributed.
Greenfield	Production facility that does not exist and therefore cannot be audited.
IATF	**I**nternational **A**utomotive **T**ask **F**orce
IMDS	**International Material Data System** The IMDS is the international material database for the automotive industry in which all automotive suppliers enter the material data of their components (www.mdsystem.com). All material data from the IMDS is transferred to the internal Volkswagen MISS system via download and is checked there.
kFf	No Fault Found – complaint parts for which the cause(s) of the complaint could not yet be determined (see also NTF).
KPI	**K**ey **P**erformance **I**ndicator – measurement variable

KVV	Concept Responsibility Agreement, consisting of the single master concept responsibility agreement concluded with the supplier for each newly awarded contract, and the concept responsibility quota.
KV quota	Concept responsibility quota – fixes in legally binding form and at an early stage the parties' respective responsibilities for the development of components/modules/systems.
New business on hold	A supplier production site is blocked from further orders in the event of a "C" rating.
NTF	**N**o **T**rouble **F**ound – complaint parts for which the cause(s) of the complaint could not yet be determined (see also kFf).
PFU	Process capability study
PMP	Inspection characteristic plan – see manual for functional dimensions catalogue.
Poka-yoke	System for preventing unintentional mistakes.
PPF	Production process and product approval; specification of VDA (volume 2) for a phased approval of products throughout the supply chain.
ppm	**p**arts **p**er **m**illion
Critical Supplier programme	Escalation process for suppliers exhibiting inadequate performance in the production hall (0km) or field. The process can lead to the supplier being temporarily blocked for new contracts (business on hold).
QPNI-RGA	New parts qualification programme – maturity level assurance
QTR	**Q**uality **T**echnical **R**equirement – technical plausibility check of the offer of a supplier after offer submission.
Type leader plant	Type leadership responsibility is generally model-based and assigned to a factory where the vehicle is manufactured – the type leader plant. The type leader plant supports the product development process and the product-related preparation for the start-up / ramp-up process. The type leader plant also follows "its" vehicle model in all product-specific respects until the end of production.
VDA	**V**erband **d**er **A**utomobilindustrie e.V. (Association of the Automotive Industry, Germany)
VW standard	The customer's technical standards (e.g. VW 10540: manufacturer code for vehicle parts).