Quality Manual for Suppliers

Aiming for comprehensive customer satisfaction, the Quality Objective of RLS Merilna tehnika is, to make sure, the customers in our industry are delivered the top quality of products and services.

Considering that the quality of RLS products and services largely depends on the quality of outsourced products and services, it is our wish to establish and develop long-term and strong relationships with our suppliers, thereby making sure that our suppliers also continuously deliver quality improvements.

Two conditions for the required quality, reliability and competitiveness of our products and services are having an established and controlled quality system, and continuous improvements. The latter compel a mutual partner relationship between RLS and the selected suppliers.

Glossary

APQP	Advanced Product Quality Planning
FMEA	Failure Mode and Effect Analysis
PSW	Part Submission Warrant
PPAP	Production Part Approval Process
SPC	Statistical Process Control
R&R	Repeatability and Reproducibility
8D	8 Disciplines of Problem Solving
MSA	Measurement System Analysis

Table of Contents

1. Quality Management Objectives 4
2. Quality Management System 4
3. Suppliers Selection and Evaluation 4
3.1. Suppliers Selection 4
3.2. Suppliers Evaluation 5
4. Quality Planning 5
4.1. APQP 5
4.2. PPAP 5
4.3. SPC 6
4.4. FMEA 6
4.5. MSA 6
4.6. Initial Samples 6
4.7. Special Characteristics 7
5. Change Management 8
6. Non-Conformance Procedures 8
7. Audits 9
8. Requalifications 9
9. Documentation Management 9
10. Order Fulfilment Process 10
11. Packaging and Shipment Labelling 10
12. Delegated Materials/Suppliers 10

1. Quality Management Objectives

As RLS' supplier, you are responsible for the quality of products and services you deliver. The scope of this manual is to define RLS' demands towards the supplier pertaining to quality, thereby ensuring long-term:

- High-quality of products and services.
- Transparent communication.
- Continuous improvement of efficiency and effectiveness of the whole supply chain.

At the heart of product and service quality planning and assurance in RLS lie a preventive approach and the policy of continuous improvements. RLS also demands the enforcement of the policy of continuous improvements from our suppliers, who must above all focus on:

- "Zero defects" related to quality.
- Ensuring appropriate deliveries.
- Continuous improvement of products, services and processes.

2. Quality Management System

The implementation of an efficient quality management system according to the latest valid issue of ISO 9001 and the development of a quality management system according to IATF 16949 are the main conditions for establishing a long-term business relationship between RLS and the supplier.

The quality management system's efficiency is proven by/through:

- The results for delivered products and services (PPM, volume of complaints, costs of complaints).
- The timeliness of deliveries.
- Efficient implementation of corrective and preventive actions.
- Continuous and provable improvements to products, services and processes.
- Fulfilling the objectives of respective projects (time-, quality- and cost-wise).
- Effective communication on all levels.

3. Suppliers Selection and Evaluation

3.1. Suppliers Selection

At RLS, new suppliers are approved by process in which we gather next data: financial status of supplier, risk analysis, signed contracts, information about suppliers quality standard, evaluation of VDA 6.3 audit.

Criteria for approving new potential supplier are next:

- Financial status 10 / A : > 4 / > C.
- ISO STANDARD : ISO 9001, ISO TS or IATF or evaluation VDA 6.3 audit >59%.
- Risk analysis done by RLS Merilna tehnika.
- Signed NDA.
- Signed contract with supplier.

In case that during the process of supplier selection, RLS detects some potential risks or improvements needed, RLS can make agreement with supplier to conduct action plan to improve non-conformities or to eliminate risks.

3.2. Suppliers Evaluation

With aim to improve the level of suppliers' quality, RLS follows suppliers' performance.

On yearly basis RLS officially analyses and issues suppliers achievement. RLS sends to supplier a report of evaluation and possible actions needed to improve targets that are not reached.

Structure of evaluation is written bellow:

	Quality standard		On Time Delivery			No. of claims		
Result	ISO 9001	No ISO 9001	>90%	80-90%	<80%	Up to/including 1	From 2 to 5	Above 5
Points	15	0	25	12.5	0	20	10	0

	PPM			Premium deliveries, Customer's rejections, recalls, warranties			Total		
Result	<500	500-1000	>1000	0 0 0	1 1 0	>1 >1 >0	>85	70-85	<70
Points	25	12.5	0	15	7.5	0	A	B	C

4. Quality Planning

4.1. APQP

The supplier must design and develop new products and services in line with the requirements of the APQP methodology, or other requirements defined by RLS, if so agreed. The supplier must appoint a professional who is qualified for preparing the documentation and performing activities according to the requirements of the automotive industry (APQP, PPAP, MSA, SPC, FMEA or equivalent according to VDA). All related costs must be calculated in the price of products and services.

4.2. PPAP

Prior to starting serial production, the supplier must deliver to RLS a PPAP composed of the following elements. RLS may allow some elements to be omitted, depending on the change / reason for resampling:

1. Coordinated document "Product requirements", signed-off by the supplier.
2. Last valid drawing.
3. Design FMEA (DFMEA).
4. Process FMEA (PFMEA).
5. Manufacturing process flow diagram.
6. Control plan.
7. Measurement report for geometrical dimensions.
8. SPC analysis / CPK report for special characteristics.
9. Analysis results (material certificates, testing reports).
10. Measurement system analysis (MSA).
11. Documentation pertaining to laboratory qualifications (ISO 9001, IATF 16949, ISO 17025).
12. List of control aids.
13. R@R report.
14. Packing requirements.
15. Confirmation of visual appearance.
16. RoHS, Reach conformance.
17. Sample products (PPAP samples).
18. Part submission warrant (PSW).

4.3. SPC

Different statistical methods (**S**tatistical **P**rocess **C**ontrol) are used to monitor and control processes, such as sampling, control charts, calculation of process performance Ppk, Cpk, measuring and test equipment capability etc. Sample size must be determined prior to using a specific method according to the VDA standard or PPAP.

Unless required otherwise, the process capability is proven and yields appropriate quality in the following cases:

Characteristic	Sampling	Serial production
Safety	Ppk ≥ 2.00	Cpk ≥ 1.67
Functional (significant)	Ppk ≥ 1.67	Cpk ≥ 1.33

4.4. FMEA

FMEA - **F**ailure **M**ode and **E**ffect **A**nalysis is an analytical preventive method, which prevents potential failures before they even occur. The method enables early identification of failure points, lowers the costs of failure identification and mitigates the risks due to failures. The supplier is obligated to conduct a risk assessment according to the above method or a suitable alternative method in the following cases: new product development, changed processes, deviations from the planned quality, and continuous quality improvements.

4.5. MSA

MSA (**M**easurement **S**ystems **A**nalysis) is quality assessment for an existing measurement system, which is decisive for controlling the process parameters and product and service characteristics. The supplier must conduct the assessments to analyse the following measurement system types:

- Variable measurement systems (variable characteristics are those whose value can be expressed numerically): we measure e.g. using vernier calipers, micrometers, dial indicators, height gauges.
- Attribute measurement systems (attributes/descriptive characteristics): we measure e.g. using limit gauges, Go-No Go gauges.
- Complex measurement systems (measurement systems which do not allow measuring the same piece several times - destructive or non-repeatable measurement systems).

4.6. Initial Samples

The supplier is obligated to submit initial samples for all products and services to be delivered to RLS. The initial sample presentation procedure is used to assess the conformance of products and services to their specifications. When presenting the initial samples, the supplier must respect a rule requiring that the products and services must be created using serial manufacturing equipment. The submission of initial samples is required in the following cases:

- New product or service.
- Modified product.
- Products and services made using repaired or new equipment.
- Modified manufacturing process or a new manufacturing location.
- After an interruption of production, longer than 6 months.

The minimum quantity of initial samples is a quantity manufactured in 1 to 8 hours, or no fewer than 300 pieces manufactured in a row, as prescribed by the latest valid edition of PPAP or a suitable alternative according to the VDA standard. In the case of smaller annual volumes, RLS can also define a smaller quantity of samples that will still fit the requirements of various analyses (SPC ...).

The submitted samples must be accompanied by a presentation report, according to the requirements of PPAP. RLS will reject any incomplete presentation reports for the initial samples. The supplier must label the initial samples with the words “initial samples” on all delivery documents and on the packaging. The supplier must e-mail the complete documentation (each document in a separate file) to the contact person appointed by RLS. In order to avoid any ambiguity regarding the identity of initial samples, a copy of PPAP documents must be enclosed with the shipment. RLS reserves the right to bill the supplier for any extra costs of resampling in case the initial samples do not conform to RLS’ requirements.

The possible statuses of sampling results are:

- Approved.
- Other.
- Rejected.

If the status is Other or Rejected, the supplier is obligated to present corrective actions that will make it possible to reach the Approved status, as agreed with the contact person at RLS.

4.7. Special Characteristics

To remain compliant with the high legal and regulatory requirements as well as to satisfy the ever-increasing demands of RLS' customers, both RLS and the supplier are obligated to pay extra attention to the specification, execution and validation of special characteristics. Failing to comply with the defined and agreed requirements may lead to significant consequences, such as recall from the market, service campaigns, replacement of non-conforming products and services, and prohibition to sell, possibly compromising reputation and leading to loss of business.

All functions that are designated with a special characteristic require the archival of all data, measurement values and documents for full verification of all controlled manufacturing processes, performed tests etc., as prescribed in the latest valid VDA standard.

Special characteristics can be:

- Safety characteristics.
- Characteristics subject to legal requirements.
- Characteristics affecting the function when the product is installed as part of an assembly.

These characteristics are defined in the tender specification and/or in the attached technical documentation, and are also clearly labelled. The supplier is obligated to control and monitor special characteristics in accordance with the approved control plan. Records on special characteristics must be kept for no less than 15 years after the end of production (EOP).

The supplier is obligated to label special characteristics in its documentation using the RLS' labelling method:

Description of characteristic	Safety characteristic	Regulatory characteristic	Functional characteristic
Symbol	  		

Note: see paragraph 4.3.

The storage of all documents subject to the requirements for special characteristics must be done appropriately, in accordance with the legal requirements and sets of rules according to the latest valid VDA standards (microfilming is allowed). The records must be kept for no less than 15 years after the end of production, except if required otherwise by RLS. In the event of supplier's bankruptcy, RLS retains the right to acquire all the documentation related to proving the quality of supplied products and services from the required period of 15 years.

The supplier must clearly label all deliveries of products and services with safety characteristics and characteristics subject to the legal requirements. Every packaging unit (gitterbox, palette, roll etc.) and material certificate must be labelled.

Every supplier's subcontractor must be approved and is obligated to execute the same procedures related to the documentation as it is required from the RLS' direct supplier.

5. Change Management

No modifications to the supplier's processes and/or products and services, or to its supply chain are allowed without prior notice given to RLS and without an approval from RLS. The supplier must provide an adequate scope of information in time, so that all necessary activities can be performed (installation of samples, RLS samples, certification, long-term testing and approval by the end customer (RLS' customers)). In the event of modifications to products and services, the suppliers are generally required to label its first deliveries according to RLS' requirements.

The supplier is obligated to record and, when necessary, present the history of revisions of the product, service or process. In case of any modification, the supplier is obligated to update the PPAP documentation and present it to RLS, based on the agreement with RLS regarding the required level of PPAP (see paragraph 4.2 in this Manual). A modification of product and service and/or process may be released to serial production only after the PPAP documentation has been approved by RLS. The supplier shall be billed for any additional costs incurred due to the reapproval procedure, which was requested by the supplier.

The supplier is responsible for the development of its own suppliers to an extent which is no smaller than the scope of requirements in this document. In case the supplier intends to replace one of its own suppliers, the former must first obtain an approval from RLS. RLS retains the right to audit and release the subcontractors. Any replacement of supplier, change of location or replacement of equipment leads to a reapproval of the products, services and process.

In case the supplier detects any deviations in the properties or the reliability of products and services from the agreed requirements, the supplier must immediately notify RLS and begin to remedy the non-conformance according to the requirements set forth in this document. Until corrective actions have been implemented and confirmed, RLS may demand special measures (e.g. a higher level of testing, 100% tests, additional work operations/process steps) to be taken for a certain period. The costs incurred shall be borne by the supplier.

6. Non-Conformance Procedures

Immediately after receiving a delivery of products and services, RLS shall execute acceptance sampling, consisting of the following checks:

- Identification of products and services.
- Volume of delivery.
- Any visible damages to packaging, products or services.
- Certificates.
- Key dimensions as labelled in the AS control plan.

In case RLS detects any defect in the delivered product or service during the acceptance sampling, the supplier shall be immediately notified via an official complaint. The supplier shall be notified later of any faults that have been missed during the acceptance sampling and are detected later in scope of the standard operating procedures. In case a fault is detected only after the acceptance sampling, i.e. in scope of RLS' processes or by the end customer (RLS' customers), this shall in no way lessen the supplier's responsibility for the appropriate logistics and quality of deliveries of products and services.

A complaint is any determined deviation from the defined requirements in terms of logistics and/or quality. After receiving a complaint, the supplier is obligated to deploy corrective actions to prevent repetition, mitigate the consequences and ensure uninterrupted supply. Immediate actions must be delivered in 24 hours after receiving a complaint. Further actions (8D) must be presented in 7 days, unless agreed otherwise. The complaint must be closed in 30 business days. Methods such as 5 Whys, Fishbone and action effectiveness validation must be used to determine and eliminate the root cause. The supplier must undertake a teamwork approach to problem solving.

In specific cases, the supplier may request in writing a release of products and services under special conditions. A release under special conditions is then agreed with RLS' departments and must be confirmed in writing. Unless agreed otherwise, the actions must be presented using the "Deviation approval form". The supplier assumes full responsibility for all costs incurred by any non-conformance, which was detected by RLS as the buyer or by the buyer's customers, and caused by the supplier.

7. Audits

The supplier is obligated to conduct regular (at least once a year) audits, and in the case of problems also additional exceptional audits of products and services and processes (usually according to VDA 6.5 and VDA 6.3, or as agreed in advance with RLS) to ensure continuous improvements of the manufacturing process.

RLS, its customer or a third party appointed by RLS have the right to audit the supplier or its subcontractor in order to determine the effectiveness of the quality management system and continuous improvements (system, process, product audits). RLS shall respect any supplier's restrictions in terms of industrial property protection. Supplier audits shall be agreed in advance with the supplier, and any information gathered shall be treated as confidential information.

In the event of any unexpected major defects or failures, RLS reserves the right to immediately visit the supplier and inspect the process control.

Audit results will be used for the decisions pertaining to supplier selection and to determine the necessary improvement actions.

In the case of recurring exceptional audits as a part of the escalation process, RLS reserves the right to the reimbursement of costs incurred by the audited supplier.

After receiving the audit report, the supplier is obligated to deploy the necessary actions for detected non-conformances within the agreed deadline.

8. Requalifications

The supplier is obligated to conduct requalification tests for all characteristics of products and services, as required upon the validation of PPAP. The supplier must execute the requalification procedures at least once a year, according to the requirements of IATF 16949 and the general requirements of RLS' customers. The supplier is obligated to send proof of executed requalification to RLS within 48 hours of receiving the request, and free of charge. RLS shall prescribe and approve the requalification documentation.

9. Documentation Management

The supplier is obligated to keep detailed records on the execution of its quality control actions, including the documentation pertaining to the initial samples, training, requalifications, as well as physical initial samples and the complete documentation related to the special characteristics.

Furthermore, the supplier is obligated to store the documentation for no less than 15 years after the end of production (EOP). The documentation management processes must be in line with the latest valid VDA standard and with RLS' specific requirements.

If necessary, the supplier shall provide access and support to RLS with the analysis of documentation and samples, as well as submit the samples and documentation upon request.

The supplier is obligated to present the requested documentation and samples within 24 hours of the request. This shall apply in particular to those characteristics of products and services that require proof of statistical process capability.

The supplier is obligated to attend to and coordinate with RLS' functional project management in the design and development phase of products and services, processes and other extensive tasks, in accordance with the latest valid VDA standard or an appropriate alternative.

10. Order Fulfilment Process

In the event of production equipment breakdown or malfunction, the supplier must ensure the availability of products and services for RLS through appropriate measures (e.g. a rapid and contractually based access to the toolmakers and manufacturers for equipment maintenance, safety stock of products and services). The supplier is obligated to set up and maintain an appropriate maintenance system to avoid any interruptions in deliveries.

The required capacities must be validated by RLS or by the supplier and proven in scope of the project phase. These capacities must be available at all times. The supplier is also obligated to develop a contingency plan for uninterrupted supplies to RLS.

11. Packaging and Shipment Labelling

The supplier must make sure that the products and services in storage are protected from damage and from material property changes due to environmental influences. Unless agreed otherwise, the supplier must provide the necessary packaging and identification according to RLS' requirements in the "Product specifications".

The packaging method must be coordinated and approved by RLS. The supplier must label its products and service according to RLS' requirements in the "Product specifications".

The supplier must be able to determine, at any time, which products may cause potential problems at RLS or its customers. Accordingly, the supplier must provide appropriate labelling of products and services.

12. Delegated Materials/Suppliers

In the event that a supplier has been appointed by a RLS' customer, the latter may directly define the conditions for the supplier.

It shall be deemed that the RLS' customer has passed all the requirements to the supplier, and that the supplier knows and accepts these requirements. In this case, the supplier shall notify RLS that all said conditions are being implemented and observed.

In the event that the supplier fails to notify RLS about any possible arrangements made between the supplier and the RLS' customer, the supplier is obligated to respect paragraph 6 of this document.

The supplier is obligated to submit to RLS, as the subject controlling the supply chain for the RLS's customer, the complete documentation pertaining to quality, the scope of which has been agreed and approved between the delegated supplier and the RLS' customer.

Head office

RLS merilna tehnika d.o.o.
Poslovna cona Žeje pri Komendi
Pod vrbami 2
SI-1218 Komenda
Slovenia

T +386 1 5272100
F +386 1 5272129
E mail@rls.si
www.rls.si