Supplier Quality Book

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0. SUMMARY

Revision #	Date	Changes	Responsible(s)
00	08/09/2017	New Release	R. Visini
01	20/05/2019	§4 (page 5): Service scores modified; Chap. 4 (page 6): Not Qualified replaced by Critical, TMM text modified;	F. Poggi
02	22/01/2020	§9 (page 16): Data for traceability *and weight* has to be clearly indicated on each single box of parts.	F. Poggi
03	10/03/2022	§4 (pages 5 and 6): Text entered: "or at least a plan to implement it"; §4 (page 6): OHSAS 18001 modified as ISO 45001.	F. Poggi
04	07/10/2024	Removed §3, Abbreviation and References table at page 3 and §4-§5 review	R. Visini
05	16/09/2025	§6.3 (page 9): Table Review of "To do (minimum requirements)" column and added "Note"	M. Tartaglione
06	14/11/2025	§7 (pag. 13): Evidences of the inspections performed according to the CP §8.1 (pag. 13): Update of the paragraph "Request for temporary deviation"	M. Tartaglione
07	08/01/2026	§3 Review (pag. 6-7): ESG principles and Score Card rating (ref. Tab1)	R. Visini

Abbreviations & Nomenclature	
Name	**Description**
Supplier selection process:	Process to select and qualify Suppliers with defined requirements
SQE:	Supplier Quality Engineer: it is the window person for the quality issues for the Supplier.
Cm-Pp/Ppk-Cmk:	Index which measures how much a sample of a pre-series item complies with specification limits in relation to the potential natural variability of the process. This is used when the process control cannot be assessed.
Cp-Cpk:	Index which measures how much a sample of an item complies with specification limits in relation to the natural variability of the process.
QDC:	Quality, delivery and cost performance.
PPAP:	Product Part Approval Process is used in the supply chain for establishing confidence in component Suppliers and their production processes. Actual measurements are taken of the parts produced and are used to complete the various test sheets of PPAP.
FIFO:	First in first out approach for warehouse turnover
Certification Program:	Evaluation method to monitor Suppliers

References
GTC (General term and condition) – available on ZAPI GROUP company website
Supplier Code of conduct – available on ZAPI GROUP company website
Product compliance (Prohibition and Declaration of Substances) - available on ZAPI GROUP company website
PPAP Technical Specification - available on ZAPI GROUP company website
Quality, Envoronment, Heath & Safety Policy - available on ZAPI GROUP company website
Conflict Mineral Policy - available on ZAPI GROUP company website
Standard Packaging - available on ZAPI GROUP company website

1. INTRODUCTION

ZAPI GROUP (hereinafter called ZAPI) considers quality and reliability as key factors in terms of competitiveness and therefore for the success of the company business. Cost is considered the natural result of an efficient and well-managed organization, achieved through robust processes and continuous improvement. In this context, ZAPI gives the quality of supplies great importance, both as regards their very close relationship with the quality of its finished products and as regards the strong disturbance that problems on components may cause on manufacturing flow. To meet the ever-increasing quality targets that the market demands, the supply relationship cannot be based on a system that filters incoming goods, but upon making Supplier responsible which must have availability of and use all the technologies and *resources* necessary to ensure excellent levels of quality and in any case of continuous improvement. Therefore, ZAPI demands for its Suppliers to adopt and maintain a quality management system to ensure zero defects (regardless of the levels of acceptance used by the Supplier). This system must prevent potential defects, assuring the quality and reliability of manufacturing processes and of the components supplied, but also include development of efficient and robust manufacturing processes, implementing appropriate verifications that keep under control deviations and operating costs. Suppliers should aim for Zero Defects and 100% On Time Delivery to ZAPI. Any established PPM target is not an accepted quality level, but represents an intermediate continuous improvement step toward shipment of components/materials meeting the zero defects requirement. Health and Safety are an integral part of our business and are encouraged in all stages to ensure the wellbeing of people.

2. PURPOSE AND APPLICATION SCOPE

This document defines rules and procedures to be adopted in relationships between Suppliers and ZAPI with the aim of ensuring suitable quality and reliability levels in the supplies. This document is defined according to the policies available at the company website. This specification is an integral part of all documents mentioned in the “References” table as well as any specific Supplier agreement. When a purchase order is accepted, including tacitly, the Supplier commits to comply with the rules laid out in this document. Supplier must check the availability for any document and version written on the purchase order. Respecting any local law or regulation is under Supplier responsibility. Supplier is responsible for the development of sub-Suppliers according to the requirements of this SQB.

The Supplier is fully responsible for sub-Suppliers, even if ZAPI originally selected and/or qualified them. The Supplier can suggest sub-Supplier changes (see § 6).

3. SELECTION AND MONITORING OF THE SUPPLIER

The following selection procedure is used to identify if the Supplier met ZAPI GROUP requirements. The selection and qualification index rating is based on a multidisciplinary approach including several aspects among which management system certification, information security, quality process audit, business continuity and risk management, ESG, finance, R&D and operation know how.

The qualification rating defines the status of the Supplier and if an action plan is requested.

Definition	Score	Status
Qualified	80-100	Continuous improvement request. PO placed
Temporary qualified	60-79,9	Action plan request. New evaluation after 12 months. PO placed
Not qualified	<60	Effective Action plan mandatory. PO stop before new evaluation.

Suppliers are expected to demonstrate commitment to ESG principles (Environmental, Social, Governance) by integrating sustainability, ethical practices, and transparent governance into their operations.

It is ZAPI's policy to give priority to and, if appropriate, to give exclusive admittance to Suppliers who have a quality system which complies with IATF 16949, and subsequent improvements. In all cases, it is a minimum requirement that a Supplier has a Quality System that has been certified by an accredited third party in compliance with ISO 9001 or at least a plan to implement it. A good intermediate step is to work according to MAQMSR, the Minimum Automotive Quality Management System Requirement (available on http://www.iatfglobaloversight.org). The Supplier should have and maintain an adequate and standardized management system for environmental, safety, ESG and information security.

A risk evaluation of Suppliers is performed to identify a list of top priority Suppliers. A monitoring scorecard system is implemented on these top Suppliers.

A scorecard is carried out once every three months by calculating an index which summarizes the Supplier performance in terms of Quality and Service. The score is from 0 to 100 (64 quality – 36 service).

This activity aims to inform the Supplier about the level of satisfaction in relation to the assigned target.

- Quality (64)
  - PPM (Target Defective Parts Per Million delivered)
  - NCR Internal (Non-conformance report at ZAPI plant)
  - NCR customer (Non-conformance report from ZAPI customer)

- NCR Response Time (Feedback timing (8D report))

- Service (36)
  - Cooperation
  - OTD Requested Date
  - OTD Confirmed Date

The Certification Program (Supplier performance) score is calculated as the average of last year's index, quarterly scorecard, and the results of audit reports into the same period (see § 7).

Table 1 Score card rating:

90 - 100	Green	Supplier is performing according to the expectation
80 - 89	Yellow	Action plan required and monitoring system (audit) activated according to evaluation;
< 80	Red	Action plan required and if the score is confirmed for 3 consecutive period, ZAPI will evaluate an exit strategy or new business on hold.

4. Escalation Procedure

In the event of repeated poor Supplier performance, an escalation procedure will be activated to ensure issue resolution and process control.

Procedure may include an inspection frequency increasing (firewall), Supplier Quality Engineer process inspection (Audit), the definition of dedicated action plans with effectiveness verification, the introduction of specific incoming inspections (whose costs will be charged to the Supplier), and the involvement of management to evaluate potential exit strategy.

5. Non-Disclosure Agreement (NDA)

Depending on the level of confidentiality of the information exchanged between the parties, the Supplier may be required to sign a Non-Disclosure Agreement (NDA) before accessing our company's confidential information. The NDA aims to protect intellectual property and sensitive information, ensuring that such data is not disclosed to third parties without our company's written consent. Adherence to this agreement is essential to maintain trust and collaboration between parties, ensuring that all shared information is treated with the utmost confidentiality and integrity.

6. PROCESS AND PRODUCT APPROVAL

The process and product approval shall ensure that purchased parts and components have been designed and manufactured without deviations in full compliance with specifications, with the present document and with any ZAPI requirements. This process must be performed on:

- New part
- Engineering change(s)
- Durable Tooling: transfer, replacement, refurbishment, or additional
- Tooling inactive > one year
- Correction of discrepancy
- Change to optional construction or material
- Sub-Supplier or material source change
- Change in part processing
- Parts produced at a new or additional location
- Following a request from ZAPI to suspend deliveries due to Quality problems.

6.1 PRODUCT DEVELOPMENT AND FEASIBILITY STUDY

Before any quotation, the Supplier, once having considered all the requirements and information provided by ZAPI, must guarantee the full feasibility of requirements. In case of any deviation, the Supplier must inform ZAPI immediately and provide alternative solution before any product delivery.

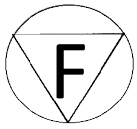
6.2 SAMPLES STATUS

The status level of samples required is related to the design project management. During a new design, the samples request starts from R&D according to the development gates. The Supplier is required to deliver samples for specific approval in different steps. Samples must be clearly identified.

Prototype Level A (concept units):	Size might be different. Connectors might change Not all requirements are defined.
Prototype Level B (verification units):	Final size of product. No change in external interfaces anticipated. Functions are operating. All requirements are defined.
Pre-series Level C (validation units):	Design is frozen. Only tooling/process planned to change. Minor modification due to qualification fails might occur. Samples fully comply with all product requirements. Parts are coming from definitive process.
Pre - production Level D (production units):	No change other than production line. Samples fully comply with all product and process requirements. Tools and production line are frozen.
Production Level P (production units):	No changes without customer approval.

6.3 MANAGEMENT OF SPECIAL CHARACTERISTICS

This is valid for ZAPI Group designed parts. Identification can be different from company to company.

Identification (*)	Description	Definition	To do *(minimum requirements)*
	Safety, critical or regulation	Any failure on these products or processes characteristics can introduce safety issue. Severity 9-10	***100 % Inspection*** or ***Cm/Cmk* >2** (Machine Capability) ***Pp/Ppk* > 2** (Short-term Capability) **Cp/Cpk > 1.67** (Long-term Capability - SPC) Reported on control plan Recorded Traceability request for 15Y Gage R&R <10% No repair allowed
	Functionality, Key	Any failure on these products or processes characteristics can introduce functional issue. Severity 7-8	***100 % Inspection*** or ***Cm/Cmk* >1.67** (Machine Capability) ***Pp/Ppk* > 1.67** (Short-term Capability) **Cp/Cpk > 1.33** (Long-term Capability - SPC) Reported on control plan Recorded No repair allowed
None	Standard	Other failures	Batch inspection

(*)The symbols shown are just representative - Special characteristics symbols are defined in the drawing.

Suppliers must identify additional special characteristics beyond those defined by ZAPI coming from PFMEA or similar process risk analysis. Suppliers with Design responsibility must identify additional special characteristics. All identified key characteristics must meet the above standard requirements.

Note: Any exception must be approved by Zapi Group (only the authorized Zapi Group representative) in writing, and subject to the final decision by Zapi Group (according to the Customer-Specific Requirements - CSRs)

6.4 PPAP

The Production Part Approval Process represents the development of the product and of the process to avoid any deviation during production. The below requirement list (recorded documents) must be implemented by the Supplier. Samples represent the development status and Supplier capacity. All samples (A, B, C, D) presented to ZAPI must be accompanied by appropriate documentation which makes them identifiable and shows the characteristics for the Prototype level requested. For the requested PPAP level (required documentation), see TECHNICAL SPECIFICATION or PPAP samples order. Unless otherwise specified, each sample must be accompanied, at the moment of its delivery, by a PPAP sample label. Requested documents are defined in the samples/PPAP order. A list of the complete PPAP documentation is detailed below:

1) **Part submission warrant (PSW):** This document shows general information that is useful for understanding the reasoning behind sampling, the type of component, the status of sampling and also shows a list of the documents required.
2) **Functional validation Report of functional tests performed on the component:** This request is applicable when reliability is the responsibility of the Supplier. For some types of product, tests can be requested to be performed by ZAPI. These requests may be for any samples and repeated periodically.
3) **Copy of requested part/product homologation (e.g. UL):** The Supplier will be asked for homologation certificates in cases of components that are homologated in the Supplier's name.
4) **Dimensional report and drawings with measurements:** This document summarizes the measurements taken by the Supplier of all the characteristics of the component for the number of samples requested by ZAPI. In case of parts from a mold, the measurement must be taken on every cavity. The samples and measurements (drawing with measurements) must be identified to allow traceability and metrological comparison. All requirements must be measured. Any deviation must be justified and identified.
5) **Raw material certificate of analysis/declaration of conformity:** This document comes from the (main) involved raw material(s) supplied and is used to demonstrate conformity with technical specifications. This document is drawn up as per UNI EN 10204 (or equivalent) paragraph 3.1.
6) **Raw Material Technical Data Sheet**: Documents from the manufacturer of the raw materials to define the nature and characteristics involved.
7) **Surface Treatment Information:** Information to help understand the nature and characteristics of surface treatments (if present), including the measurement of thickness.

8) **Capability Study:** This document confirms the records and results of the control charts (X -R) and the Cm/Cp and Cmk/Cpk Capacity Study statistical calculations. It depends on the production status.
9) **Aesthetic approval:** For components requiring aesthetic conformity, the criteria for acceptability and acceptance must be shared and approved. Defect pictures are included into this criterion.
10) **Process Flow:** A Flow chart describes all the manufacturing phases of components starting from raw materials and ending with packaging. The same reference must be used for FMEA and control plan documents.
11) **(D)PFMEA ((Design) Process Failure Mode and Effects Analysis):** This is an analysis of potential failure modes and of related effects on the component (design) manufacturing process. The Supplier must present the PFMEA that has been developed by its own company.
12) **Control plan:** This document shows the scheduled actions taken by the Supplier to keep full control of the manufacturing process. It should be available at the production plant. The control plan is the result between the customer requirements and D/PFMEA.
13) **MSA (Measurement System Analysis) Analysis of measurement system**: This study aims to determine the repeatability and reproducibility of the measurement system (forms available on request).
14) **Information about Molds and/or Equipment:** Information about molds and/or Equipment developed for manufacturing a component for sampling.

    Information in this case means:

    - Quantity and part number,
    - Overall view drawings,
    - Pictures,
    - Raw materials used.

15) **Reference samples:** Samples from every mold cavity, spindle, or jig representative of series manufacturing in dimensional and aesthetic terms (including samples representative of the criteria of aesthetic acceptability).
16) **Description of Packaging and identification:** This document describes the packaging that the Supplier intends to propose for the supply of sets of components.
17) **Environmental requirements and substances of concern (ESG)**: ZAPI aims to minimize its environmental impact by focusing on the material content of its products and CO_2 emissions. In support of this aim, ZAPI expects Suppliers, to:

    - Understand how their businesses and products impact the environment.
    - Know and comply with federal, state, and local regulatory requirements.
    - Notify ZAPI of any significant product/part compliance violations.
    - Stay current with global classifications of hazardous substances.

- Understand the requirements for registration of substances and how these requirements apply to own parts/products.

Product compliance (and ESG) requirements are available on the company website.

6.5 PPAP APPROVAL

PPAP approval is required only on samples level D. Any necessary deviation must be managed. The requested documentation forms are an integral part of the approval process and even just one missing document will compromise the progress of the procedure. Once the measurements and sample tests have been completed, ZAPI will assess the overall conformity of items with drawings and/or specifications, but also the submitted documentation in compliance with ZAPI requirements.

- ***APPROVAL***

Approval for manufacturing indicates that the product meets requirements and that the Supplier is authorized to deliver the quantities agreed in the delivery schedule.

- ***INTERIM APPROVAL (TIME LIMITED)***

Approval with a set time limit allows deliveries of batches for a limited period of time. Such approval with a set time limit is only permitted if:

  - The causes of non-conformity which led to non-approval are clearly defined.
  - It has been agreed and an action plan approved by ZAPI is documented.
  - A material which has been given temporary approval without the action plan being respected or which exceeds the time limit imposed in the exemption, will be rejected. Deliveries will not be authorized unless temporary authorization is extended.

- ***REJECTED***

Rejected means that the presentation, the manufacturing batch from which the product was taken, and/or the accompanying documentation, do not comply with requirements. The product and correct documentation shall be submitted again before manufacturing quantities can be delivered.

Production quantities shall not be delivered before ZAPI Approval.

7. EVIDENCES OF THE INSPECTIONS PERFORMED ACCORDING TO THE CP

Supplier shall maintain records of the inspection performed on the delivered parts according to the approved Control Plan and submit results when required by Zapi.

8. CHANGE CONTROL

The Supplier cannot change the product, its components, materials, manufacturing process, or the location of manufacturing compared to what has been approved by ZAPI. If a change needs to be made to enable supply to be conducted correctly, the Supplier must timely inform the ZAPI purchasing office in advance and provide a written explanation of the reasoning behind such change. The ZAPI purchasing office will assign personnel to contact the Supplier offices to further investigate the proposed change and to assess whether to approve it. If ZAPI authorizes the change all costs for activities for the approval of the component and/or the process will be charged to the Supplier (see §5) . In the absence of this notification or authorization or in the presence of product or process conformity defects, the Supplier will be responsible for all damages, costs, and expenses and in general for any prejudices and ZAPI will also have in any case the faculty to halt supplies without prior notice.

9. QUALITY ISSUES AND PROBLEM SOLVING

ZAPI assumes supplied parts are without defects and suitable to use for production. Therefore no systematic incoming inspection is performed. ZAPI will inform the Supplier in case any problem occurs during part use. The Supplier should have an internal procedure for managing non-conformities encountered during every phase of its manufacturing process. The Supplier shall always refer to ZAPI quality department for any problems involving supply quality issues. For nonconforming products supplied to ZAPI, including those that reach a ZAPI customer, the Supplier must cover all costs to correct the nonconformance.

8.1 REQUEST FOR TEMPORARY DEVIATION

Supplier shall deliver parts to Zapi only if they are compliant to the specifications. In case of non-conformity to the specifications, the Supplier may require, before parts delivery, the approval for a temporary deviation by sending a well-motivated “Request for deviation” to ZAPI.

8.2 REWORKED AND REPAIRED PRODUCT

Rework is defined as additional operations that are not part of the basic production process flow, which will bring the product in full compliance with applicable drawings and specifications. Instructions for rework, including re-inspection requirements, shall be accessible to and utilized by the Suppliers' appropriate personnel. All rework shall be documented and accepted by ZAPI if not previously agreed.

Repair is defined as using alternative manufacturing techniques, methods, materials, or processes that *may not* bring product into full compliance with applicable drawings and specifications. Repairs are not allowed without written approval from ZAPI if not previously agreed.

8.3 QUALITY ISSUES

Any products deviation will be communicated to the Supplier by means of a non-conformity (claim) report that includes the description of the problem and all information supporting the Supplier identifying the root cause of the deviation. The Supplier shall provide a complete response within the time limit set by ZAPI. For each non-conformity received by ZAPI, the Supplier shall respond by providing the information requested, in as much detail as possible, to define the actions implemented to resolve the problem using an 8D report.

Form 8D has eight key sections and time limit:

- D1 IDENTIFICATION OF THE PROBLEM
- D2 DEFINING THE WORKING TEAM
- D3 CONTAINMENT ACTIONS up to D3 (Containment) within 24h after claim received
- D4 DEFINITION OF ROOT CAUSES
- D5 CORRECTIVE ACTIONS AND UPDATE OF PROCESS DOCUMENTS up to D5 (Root Cause + Corrective Actions Plan) within 5 working days after D3
- D6 ASSESSMENT ON SIMILAR COMPONENTS/PROCESSES (PREVENTIVE ACTIONS)
- D7 EFFECTIVENESS CHECK OF CORRECTIVE ACTIONS
- D8 CLOSURE 8D closed within target date defined in D5

The Supplier is required to provide immediate containment, sorting, and inspection activities on all suspect product(s) at the affected ZAPI and/or ZAPI customer facilities in an effort to segregate and eliminate all non-conforming products from the supply chain. This containment may be done

by the Supplier with its own personnel or by a third-party company, approved by ZAPI, and at Supplier's expense.

Notes:

- *If Supplier decides to perform the containment action itself and requires assistance from a temporary labor firm, a representative from the Supplier could be requested to be on-site to manage all of the temporary firm's activities.*
- *Failure to provide certified product within the required 24 hr timeframe may result in containment to be initiated by ZAPI at Supplier expense.*
- *ZAPI may initiate containment prior to 24 hours at the Supplier's expense in order to sustain immediate production needs*
- *Supplier must maintain extraordinary actions until corrective actions have been implemented.*
- *Reworked parts (also sorted) must be properly identified. ZAPI must approve any interim action on the suspected parts and decide the rejecting quantity*

Once the containment actions have been defined, the Supplier is required to conduct a thorough investigation into the problem and provide ZAPI with information about the causes which led to the defect and as to why the defect was not detected in standard controls. This investigation into the causes shall be performed using a robust quality problem solving process. Only if the effectiveness is approved by ZAPI is it possible to close the claim. In case of reoccurrence or risky situation, ZAPI can ask the Supplier for any extra inspections to be performed by the Supplier itself or from a third party.

8.4 CHARGES TO SUPPLIERS

Any costs come from quality deviation will be charged to the Suppliers according to GTC (available on our company website).

10. SUPPLIERS AUDITS

The SQE will carry out periodical audits at Suppliers' plant to monitor Suppliers' manufacturing processes or to evaluate new potential Suppliers. The Supplier shall agree to provide the auditor with the highest availability, collaboration, and cooperation, whereas the auditor undertakes to ensure the maximum confidentiality in regards to the sharing of data and/or information that the auditor becomes aware of during the audit. The SQE is responsible for coordinating activities related to audits at Suppliers' premises, for preparing check lists, for performing audits and issuing reports of the visit(s). The checklist could be shared prior to the audit in order to explain the different requirements. The SQE can apply a quality system audit or a process audit according to

different needs. In case of any recorded deviation, Supplier must schedule a corrective action plan. The feedback time depends on the deviation severity. The Supplier shall write back with implementation action and time implementation. A follow up visit may be necessary in the case of Major Non-Conformity detected. Process audit will be performed according to VDA 6.3.

11. Top Management Meetings

Top management meetings can be scheduled in order to develop mutually beneficial relationships, to create greater levels of innovation, and competitive advantage. It is useful for fostering collaboration and driving strategic initiatives with Suppliers.

This specific meeting aims to enhance overall quality by setting clear expectations, reviewing performance metrics, and identifying areas for improvement. Additionally, it serves as a platform to discuss and launch new projects, ensuring alignment with organizational goals and fostering innovation. By maintaining open communication and building strong partnerships, this meeting helps in achieving mutual growth and success.

During the meeting, all details are shared to create a common future strategic plan.

12. TRACEABILITY AND FIFO

The Supplier should use an inventory management system to optimize inventory turns over time and should assure stock rotation, such as “first-in-first-out” (FIFO). All Suppliers to ZAPI shall have an effective batch definition and traceability procedure. The delivered product batch should be traced back to the raw material. Data for traceability *and weight* must be clearly indicated on each single box of parts. Unless otherwise approved by ZAPI, a batch shall consist of the result of production using the same key factors in terms of people, machines, method and material. If required Inspections Documents must be sent by email to the nominated person. For any different request see specific product/process documents.

13. SUB-CONTRACTOR (outsourcing process)

Suppliers of processes shall ensure an organizational structure that can keep the processing procedure under control. The Supplier shall comply with the product/process requirements unless otherwise specified in writing by ZAPI. The Supplier is responsible for carrying out the activities required by the specifications detailed by ZAPI or by its customers at the start of manufacturing

and/or at subsequent visits. The components to be used in the above-mentioned activities will be forwarded to manufacturing sites as specified in the delivery schedule. The Supplier is responsible for accepting and identifying components as well as for carrying out controls on determined items to prevent defective components from being used. All materials belonging to ZAPI shall be stored according to ZAPI requirements, in any case in suitable packaging to prevent them from being damaged. The original packaging of materials on arrival can only be replaced if the above-mentioned conditions are met. If during the above-mentioned activities, materials (components) are encountered that are nonconforming or unsuitable for their intended use, these items shall be immediately segregated from other materials so that they are not used. The Supplier cannot use these components unless authorized by ZAPI Quality Department. Non-conforming material can be returned to ZAPI, when reworked or repaired, only if agreed with ZAPI Quality department.