SUPPLIER QUALITY ASSURANCE MANUAL

EXPLORE DIFFERENTLY

TAIGA

Contents

1. Introduction

1.1. Taiga

Taiga Motors Inc (below "TAIGA") was founded in 2015 by a group of engineers that believed there shouldn't exist a compromise between exhilarating powersport pursuit and sacrificing the environment. Be it carving through powder, across lakes or along dirt trails nothing beats instant torque at your fingertips, silent speed and fresh air.

1.2. Vision

Pioneering Off-Road Electrification

1.3. Mission

Taking on one of the most challenging vehicle segments to electrify, TAIGA has pushed the frontiers of electric technology to achieve the extreme power, weight and thermal specifications required to outperform the high performance but polluting 2-stroke engine. The result is the world's first electric powertrain designed from the ground up that is faster, more reliable, more efficient & better connected to every season, and the first line of fully electric recreative vehicles.

1.4. Values

We seek to be a global company, recognized for its competitiveness, excellence, and innovation in off-road vehicles, all within a framework of the highest standards of integrity. The result is the world's first electric snowmobile, designed based on the following values:

- Safety
- Innovation
- Customer Experience Focus
- Trust & Collaboration
- Respect & Responsibility

1.5. Approach

This manual defines the minimum quality requirements for TAIGA Suppliers or TAIGA Partners to ensure that the product complies with TAIGA customers' regulatory and safety requirements. These requirements are set out according to the ISO 9001 standard and TAIGA specific requirements.

1.6. Responsibility of Suppliers

TAIGA recognizes the very important role our Suppliers have in the value we offer our customers. As an extension of our own operations, we rely on our Suppliers to provide material, products, and services which meet all the requirements of TAIGA products, applicable specifications, and the quality management requirements outlined herein.

It is the responsibility of each Supplier to comply with the requirements of this Supplier Quality Assurance Manual and associated documents referred to throughout the text unless a special agreement is made between the TAIGA SQA coordinator and the Supplier.

2. Definitions, Acronyms and Abbreviations

- The words “shall”, or “must”, indicate a mandatory requirement.
- The word “should” indicates a mandatory requirement with some flexibility allowed in the method of compliance.
- The term "Supplier" refers to the contractual part of TAIGA’s suppliers and their subcontractors. In some cases, the Supplier can also be the manufacturer.

Acronyms and abbreviations

ITEM	DESCRIPTION
8-D	Eight Discipline problem solving
AAR	Appearance Approval Report
AIAG	Automotive Industry Action Group
APQP	Advanced Product Quality Planning
Benchmarking	Improvement tool to measure performance or process against other companies’ best practices
CAD	Computer-Aided Design
Containment	Immediate short-term Supplier actions
Control Plan	Documented description of the process for controlling the product
Corrective Action (CA)	Permanent, documented, systemic corrections to the failed processes
Cpk	Process Capability Index
FAI	First Article Inspection
MSA	Measurement System Analysis
OEE	Overall Equipment Effectiveness
D/P-FMEA	Design/Process Failure Mode and Effect Analysis
Design for Manufacturability and Assembly (DFM/DFA)	Simultaneous engineering process designed to optimize the relationship between design function, manufacturability, and ease of assembly.
Failure Modes and Effects Analysis (FMEA)	Systematic activities intended to recognize and evaluate the potential failure of a product, and the effects and causes of that failure, identify actions that could eliminate or reduce the chance of the potential failure occurring, and document the process.
PO	Purchase Order
PM	Project Management
PPAP	Production Part Approval Process
R&R	Repeatability and Reproducibility

RPN	Risk Priority Number
S/N	Serial Number
SPC	Statistical Process Control

Table 1: Acronyms and abbreviations

Revision History:

Revision	Date	Responsible	Description of changes
00	2021-10-13	David Maltais	First emission
01	2022-09-08	David Maltais	Comment added in section 3.3 to take special machining tolerances into account.
02	2024-02-19	David Maltais	Revision of the SQLF has been updated. Section 12 added. Sections 3.2.3 and 3.2.4 requirements modified. Root cause resolution time increased.

3. Basic Requirements

3.1. Critical and Special Requirements

Definition

Critical Characteristics related features are designated by the presence of the symbol [CC] next to the feature on the drawing or in a specification, to indicate that the feature has the potential to affect government, safety and environmental regulations and/or can lead to injuries to vehicle operators, passengers, other travelers, passers-by or maintenance personnel. If any feature of a part is considered as a critical characteristic, the part is a critical part.

Special Characteristic related features are designated by the presence of the symbol [SC] next to the feature on the drawing or in a specification, to indicate that it has the potential to affect product's function.

Due to the severity of these defined characteristics, it is a requirement that they be appropriately stated and controlled within the applicable processes.

Related Documentation

Regarding dimensional, material, test and functional requirements for product features identified as Critical Characteristic [CC] and Special Characteristic [SC], the following requirements apply and supersede the general requirements:

- Critical AND Special Characteristics must be clearly identified throughout the manufacturing process and in all associated documentation such as Process FMEA, Control plans and Work Instructions
- Capability requirements for parts identified with [CC], [SC] and [PTC] (defined in Section 6.4) characteristics are described below:

Characteristic	Requirement
Critical Characteristic [CC]	**C_{pk} ≥ 1,67** Process under statistical control or • Electronic or automated poka-yoke • Effectiveness verified once per shift TAIGA approved action plan for achieving process control and capability
Special Characteristic [SC]	**C_{pk} ≥ 1,33** Process under statistical control or • 100% inspection • TAIGA approved action plan for achieving process control and capability
Pass Through Characteristics [PTC] (See section 6.4)	

Table 2: CC and SC management

Data records resulting from Statistical Process Control (SPC), automated checking, and inspection results must be available for download upon request by TAIGA.

3.2. Quality Requirements

3.2.1. Quality Management System Requirements

All potential Prototype Suppliers are required to have a standard Quality Management System based on the minimum requirements of ISO 9001.

All Production Suppliers must have a Quality Management System compliant to ISO 9001 as a minimum, with the objective of becoming IATF compliant. A copy of the valid certification must be transmitted to TAIGA by the Supplier.

3.2.2. Conformity to Environmental Regulation

ISO 14001: TAIGA encourages Suppliers to develop a certification plan along the lines of ISO 14001 standard.

3.2.3. IMDS Requirement

Supplier is encouraged to provide an IMDS submission. Where appropriate, the supplier should indicate the IMDS number in the Part Submission Warrant document. IMDS data must be submitted through www.mdsystem.com (Ref TAIGA IMDS ID: 234149).

3.2.4. RoHS and REACH

RoHS and REACH compliance is required to sell products in the European Union, China, Korea and some regions of the United States and Canada. Supplier is required to provide documentation showing compliance with both RoHS and Reach for all components sourced by TAIGA and intended for production vehicles. Declarations based on documents such as test reports from third party or regulatory data sheet are acceptable.

3.3. Technical / Engineering Requirements

Supplier shall comply with all 6 requirements listed below. In the event of a conflict, the more stringent requirement shall apply. If a conflict related to quality has mutually exclusive requirements, the order of precedence from highest to lowest will be:

* For the purpose of GD&T, all dimensional information contained in the 3D model is basic and the 2D has precedence for every feature that is driven by special machining tolerances (e.g., Press fit tolerances).

3.3.1.Technical Drawing, CAD and Geometric Tolerancing

Only products manufactured according to technical drawings approved by TAIGA will be accepted. TAIGA technical drawings take precedence over any Supplier manufacturing drawings. Also, TAIGA 3D files override 2D technical drawings specifications. It's expected that the Supplier has knowledge of Geometric Dimensioning and Tolerancing (GD&T) as per the ASME Y14.5M-2009 Standard, to provide parts that are within the tolerances as per TAIGA 2D technical drawings. It's the Supplier's responsibility to demonstrate the part's compliance to the GD&T tolerancing requirements by using the proper measurement technique (e.g., Coordinate measurement machine).

3.3.2. Review of Technical Specifications

The objective of this process is to ensure that the Supplier has a full understanding of the technical requirements related to the product. The Supplier must review all the technical documents, standards, and specifications defining the product and fill the compliance matrix to confirm that each requirement is understood and achievable. In the event where a requirement isn't understood or achievable, an action plan needs to be put in place. The compliance matrix shall be sent by TAIGA buyer during the RFQ process.

3.3.3. Design Validation Planning and Reporting (DVP&R)

When applicable (requested by the agreed plan), the Supplier must develop and implement a product test plan (DVP&R) that must be reviewed and approved by TAIGA Project Representatives. Inputs for the test plan should include: DFMEA, engineering specifications and any other TAIGA defined/supplied engineering requirements.

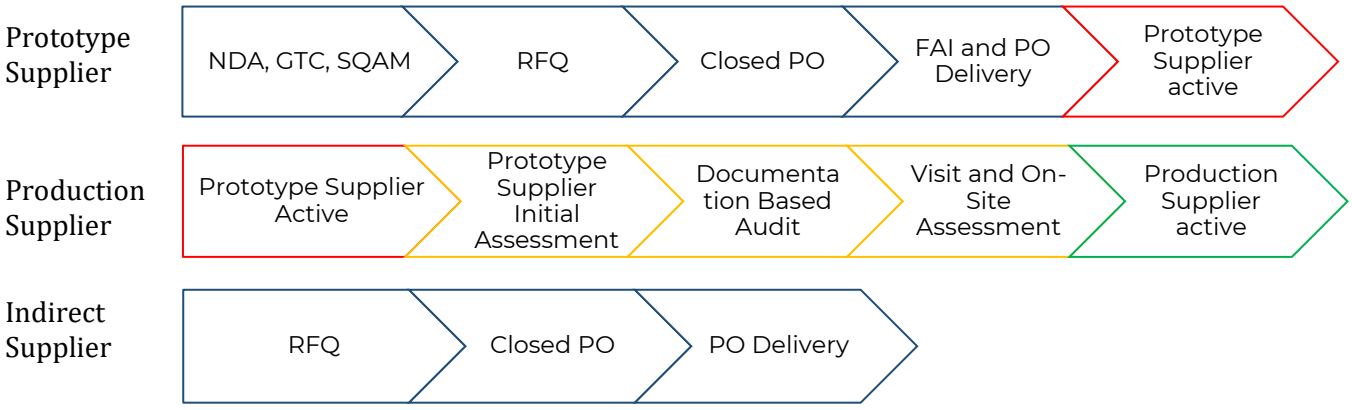
3.3.4. Design Failure Mode and Effects Analysis – DFMEA

Where applicable, design responsible Suppliers must develop and maintain a DFMEA throughout the life of the product. DFMEA inputs should include warranty issues, customer concerns, lessons learned, and address past 8D concerns.

3.3.5. Process Failure Mode and Effects Analysis – PFMEA

A PFMEA is an absolute requirement which must be developed and maintained throughout the life of the product. PFMEA should also include inputs such as DFMEA, warranty issues, customer concerns, lessons learned, and past 8D concerns.

4. Supplier Approval Process



TAIGA has defined the following "Supplier Types" for the purpose of classifying its suppliers. It is possible for a single organization to qualify as more than one (1) Supplier Type.

TYPE	Definition	Examples	QMS *
Manufacturer (Production or Prototype)	A supplier who manufactures: • a product which is designed by the supplier or • a generic product in accordance with industry standards and specifications	Catalog Items Hardware, fasteners Raw Materials Chemical products Software	ISO9001 or IATF 16949 ISO 26262 (Software)
Subcontractor (Prototype)	A supplier who manufactures products or performs special processes in accordance with TAIGA engineering's specifications	TAIGA part# manufacturer Build-to-print machine shop Processing house Surface / heat treatments Casting / machining	No specific requirement
Subcontractor (Production)			ISO9001 or IATF 16949
Distributor (Production or Prototype)	A supplier who purchases and resells products without processing the materials internally (apart from re-packaging, logistics, etc.)	Catalog Items Hardware, fasteners Commercial goods Chemical products	ISO9001
Indirect Products or Services (Indirect)	A supplier providing products, parts and/or services in support of TAIGA's industrial activities but not to be installed or integrated into TAIGA's end products	Contractors Tools Consumables Supplies	No specific requirement
Laboratory (Indirect)	A supplier providing laboratory services	Calibration Testing Analysis	ISO17025

Table 3: Supplier types

* Suppliers are required to implement and maintain a registered Quality Management System (QMS) to support all applicable elements of the international standard, as defined by the Supplier Type. QMS certification must be achieved via an accredited Certification/Registration Body (e.g., accredited by ANAB or another equivalent, nationally recognized accrediting body). Additional ISO14001 certification is encouraged throughout TAIGA's Supplier base.

4.1. Supplier Evaluation Process

TAIGA requires all Suppliers to be approved prior to the issuance of contracts. All Suppliers must be approved by TAIGA Quality, regardless of approvals by customers or other entities.

Prototype Supplier:

Suppliers in this family can only supply prototype parts, which are not fully qualified and are not intended to be used in the final product (production product). A prototype product is an early sample, model, or release of a product built to test a concept or a process. A prototype is generally used to evaluate a new design and does not necessarily use the same material or process that will be used for the production part.

Production Supplier

Suppliers in this family can supply prototype AND production parts. They are fully qualified and are intended to be used for final production products. A production product uses the final material and the approved process and is approved to be used in the final version of TAIGA products once the formal qualification process is completed.

Indirect and Service Supplier

Indirect and Service Suppliers provide TAIGA with products/services not directly related to the production (for example: furniture, office products, detergents, facility maintenance, manpower, assurance, IT services etc.).

4.2. Supplier Evaluation Steps

The Supplier Evaluation and Approval Process includes the following steps:

a) Potential Supplier Initial Assessment

TAIGA will request the Supplier to provide a copy of its quality management system certificate and complete a Potential Supplier Self-Assessment (PSA) of its business and quality management system and capabilities, providing information related to the following criteria:

- Company profile
- Management
- Environment
- Quality
- Logistics
- After market
- Competence
- Product development
- Finance
- Productivity
- Sourcing

b) Documentation Audit

Once the Potential Supplier Self-Assessment (PSA) completed, the assigned Supplier Quality Engineer will request all the relevant documented evidence related to the criteria part of the PSA. The PSA review and the audit of the various documents will enable the Supplier Quality Engineer to determine if the Supplier's quality management system meets TAIGA requirements.

c) On-Site Assessment

Generally, when a Supplier is IATF 1694 / ISO TS 16949 certified by an accredited certification body, TAIGA will not conduct an on-site assessment of the Supplier's quality management system against the same criteria. However, TAIGA, due to product/process complexity or criticality, may elect to conduct on-site assessments of Supplier products or process capabilities (Process Audit – PA). As a result, findings may be issued.

These assessments could include:

- Quality Management System (QMS)
- Business and Manufacturing Operations
- Continuous Improvement Initiative
- Technology Assessment
- Sub-Tier Supplier Control

4.3. Supplier Status

Based on the Supplier evaluation steps, a Supplier can be classified in one of the below statuses:

Supplier Status description:

- UNDER EVALUATION: The Supplier is under evaluation to verify if it can be part of TAIGA Supplier panel.
- ACTIVE: The Supplier is fully qualified and is currently a partner of TAIGA in all supply chain activities.
- NBH: New Business Hold – major problems occurred and no clear action plan active to solve them.
- OBSOLETE: The Supplier is obsolete. No business possible until a new evaluation is completed.

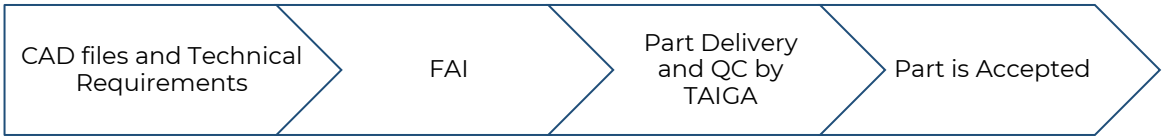
Type	Receive RFI/RFQ	Proto/sample delivery	Production delivery
Under Evaluation	yes	yes	no
Active	yes	yes	yes (*)
New Business Hold	no	Waiver needed	yes
Obsolete	no	no	no

Table 4: Supplier status

(*) Active Suppliers can deliver production parts only after part approval in any case

5. Product Qualification

Prototype Part



Production Part

5.1. Prototype Product Qualification: Documentation Approval

First Article Inspection (FAI)

As a minimum, a First Article Inspection (FAI) is required to initially qualify a prototype part/process for Supplier approval, unless the PPAP process (below) is used instead. In the event where an IATF certified supplier produces prototype parts, he shall submit a Level 4 PPAP package.

Furthermore, a new FAI may be requested if there is an extended gap of time since last production. The FAI requires that all features and characteristics on the design specification and control plan be inspected and verified prior to production[1]. TAIGA FAI form, or other convenient and equivalent document may be used.

5.2. Product Qualification for Production

This section defines the generic requirements for production part qualification and approval. The purpose is to determine if all TAIGA design and specification requirements are properly understood by the Supplier and that the manufacturing processes have the capability to consistently meet these requirements.

5.2.1. Advanced Product Quality Planning (APQP)

When requested, Supplier shall implement and develop a detailed Advanced Product Quality Plan for the development of processes used to produce a specific part or family of part. The AIAG publication "Advanced Product Quality Planning (APQP) and Control Plan" should be used as a reference when developing these plans. These plans should also include the TAIGA specific requirements presented in the current document. APQP identifies the tasks to be completed, the expected timing, assigned responsibility for completion and the critical path.

The objective of the planning process is to deliver the project on time, at the right cost and at the highest level of quality. The initial development of the APQP should begin upon receipt of the Request for Quotation (RFQ). This initial plan should be included as part of the RFQ response package.

The Supplier is responsible for obtaining the latest revision of the applicable AIAG core tool reference manuals and forms (see Applicable Documents section for where these references may be obtained).

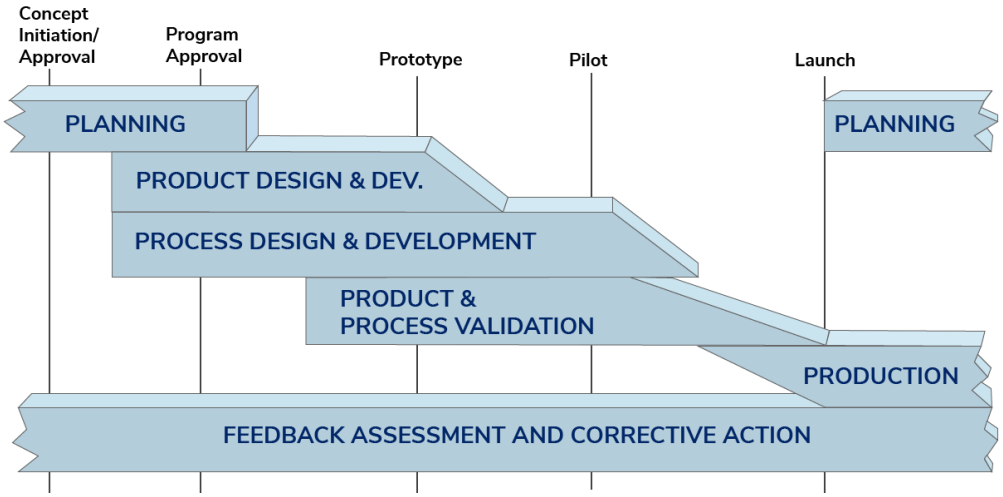
The AIAG Core Tools Manuals are:

- Advanced Product Quality Planning (APQP) and Control Plan
- Production Part Approval Process (PPAP)
- Potential Failure Mode and Effects Analysis (FMEA)
- Measurement Systems Analysis (MSA)
- Statistical Process Control (SPC)

[1] For First Article Inspection guidance, see AIAG PPAP Manual (Appendix C, D, & E) – Production Part Approval Process (available from www.aiag.org).

APQP Timing

Suppliers of parts supported by the APQP are required to report the project status at established intervals during the project development. As a general rule, reviews are held prior to each of the project milestones or drawing revision releases. Suppliers should prepare for these project review meetings by completing or updating the APQP review template, their project plan and the project milestone dates. Suppliers can access the APQP review templates on TAIGA website.



APQP Samples

The Supplier shall provide the samples according to the APQP timing plan agreed with TAIGA, and make sure the samples will meet the quality requirements for each milestone.
The Supplier shall submit the APQP documents (and, eventually, the PPAP) on time as TAIGA required. TAIGA will review the documents based on the ISO 9001, IATF 16949 or AIAG. If there is any issue or timing delay for the APQP documents, TAIGA releases a Supplier complaint according to the risk and requires root cause analysis and improvement report to avoid other occurrences.

5.2.2. Special Processes Documentation approval

For TAIGA, the following processes are managed as special processes as defined in the ISO 9001 standard:

Process
Surface treatment (coating, plating, etc.)
Casting
Metallurgy
Plastics
Electrics and Electronics
Adhesive

Table 5: Special processes in scope

Supplier is responsible to follow the requirements indicated in the purchase order. All first part shipment must be approved by TAIGA. Shipping approval must be performed as per the following steps:

- Supplier and TAIGA agree on the specific tests and components part of the test plan
- Supplier performs the final inspection on one sample part (destructive test if applicable)
- Supplier must send the test results documents to TAIGA for approval
- TAIGA will analyze the documents and will inform the Supplier if the parts can be shipped
- After the reception of the shipment approval, the Supplier can send the parts

5.2.3. Production Part Approval Process (PPAP)

The Supplier shall submit to TAIGA a Production Part Approval Process (PPAP) level 3 submission package. The Supplier is responsible for obtaining the latest revision of the applicable AIAG core tool reference manuals and forms).

PPAP defines the approval process for new parts, revised parts, or parts produced from new or significantly revised production methods. The PPAP process consists of 18 elements that may be required for approval of production level parts. The PPAP manual contains detailed information, guidelines and sample documents useful for completing the process requirements. The Production Part Approval Process (PPAP) demonstrates that the manufacturing process used to produce parts is fully developed, thoroughly tested, and capable of serial production of parts conforming to the technical specifications.

Every PPAP package must be sent to QUALITY@taigamotors.ca or to the assigned Supplier Quality representative.

Unless exempted by an approved Waiver from TAIGA, Suppliers may not ship the first batch of production parts without an approved Part Submission Warrant (PSW) document signed by TAIGA representative.

PPAP Submission Levels

The PPAP submission requirements are normally divided into five classifications or levels, as follows:

- Level 1 – Part Submission Warrant (PSW) only, submitted to TAIGA Quality
- Level 2 – PSW with product samples and limited supporting data
- Level 3 – PSW with product samples and complete supporting data
- Level 4 – PSW and other requirements as defined by the customer
- Level 5 – PSW with product samples and complete supporting data available for review at the Supplier's manufacturing location

		Submission Level				
		Level 1	Level 2	Level 3 (Default)	Level 4	Level 5
1	Design Record (2D Drawing)	R	S	S	*	R
2	Engineering Change Documents (if any) such as ECO/ECP	R	S	S	*	R
3	Engineering Approval if required	R	R	S	*	R
4	DFMEA	N/A	N/A	N/A	N/A	R
5	Process Flow Diagram	R	R	S	*	R
6	PFMEA	R	R	S	*	R
7	Control Plan	R	R	S	*	R
8	Measurement Systems Analysis (GR&R)	R	R	S	*	R
9	Dimensional Report	R	S	S	*	R
10	Material/Performance/Functional Test Results	R	S	S	S	R
11	Initial Process Studies (Short-term Capability Study)	R	R	S	*	R
12	Qualified Laboratory Documents	R	R	S	*	R
13	Appearance Approval Inspection Report	S	S	S	*	R
14	Sample product	R	S	S	*	R
15	Master Sample	R	R	R	*	R
16	Checking Aids	R	R	R	*	R
17	Customer Specific Requirement compliancy	R	S	S	S	S
18	**Parts Submission Warrant (PSW)**	**S**	**S**	**S**	**S**	**S**

Table 6: Documents to submit

S – The Supplier will submit documentation and retain copy of records or documentation items at appropriate locations
R – The Supplier shall retain at appropriate locations and make available to TAIGA upon request.
"*" The Supplier shall retain at appropriate location and submit to TAIGA upon request.

Elements of PPAP

Below is the list of all 18 elements accompanied by a brief description for each element:

Design Documentation

Design documentation shall include both customer and the Supplier's drawings.

Engineering Change Documentation

If the PPAP is required due to a request for a change to a part or product, the documentation requesting the change must be included in the PPAP package. This documentation usually consists of a copy of the Engineering Change Notice (ECN).

(Customer) Engineering Approval

This documentation usually consists of a copy of the Engineering Change Notice (ECN), approved by the customer engineering department.

Design Failure Mode and Effects Analysis

Design Failure Mode and Effects Analysis (DFMEA) is a cross-functional activity that examines design risks by exploring the possible failure modes and their effects on the product or customer and their probability to occur. The DFMEA is a living document that should be reviewed and updated on a regular basis.

Process Flow Diagram
The Process Flow Diagram clearly describes the production process and its sequence in a graphical manner.

Process Failure Mode and Effects Analysis
Process Failure Mode and Effects Analysis (PFMEA) reviews all the steps of the production process to identify any potential failure of a process and evaluate the risk in terms of severity, occurrence, and probability to detect failure.

Control Plan
The Control Plan is an output from the PFMEA. The Control Plan lists all product Critical and Special Characteristics and inspection methods required to deliver products that continually meet the customer quality requirements.

Measurement System Analysis Studies
Measurement System Analysis (MSA) studies include Gage Repeatability & Reproducibility (R&R) studies on measurement equipment used during assembly or quality control checks. Calibration records for all gages and measurement equipment must be included.

Dimensional Results
Each dimension on the drawing is measured on the final assembly to make sure that it falls within specification. The results are recorded in a spreadsheet and included within the PPAP submission, a total of 5 units must be included in the dimensional report. For tooled parts, a total of 5 units per cavity is required.

Records of Material / Performance Tests
This element should contain a copy of the Design Verification Plan and Report (DVP&R). The DVP&R is a summary of every validation test performed on the part. It should list each test performed and its result. This section shall also include material certificate when applicable.

Initial Process Studies
Initial process studies include Statistical Process Control (SPC) charts for the Critical and Special Characteristics of the product. These studies must demonstrate that the critical processes are stable, have normal variation and are running near the intended nominal value.

Qualified Laboratory Documentation
Qualified laboratory documentation consists of the industry certifications for any inhouse or outsourced lab that was involved in completing validation testing.

Appearance Approval Report
The Appearance Approval Report (AAR) is applicable for components affecting appearance only. This report validates that the final product appearance requirements are as per specifications. Requirements include but are not limited to color, grain, textures, etc.

Sample Production Parts
Sample production parts are sent to the customer for approval and are typically stored at either the customer or Supplier's site. A picture of the production part is usually included in the PPAP documentation along with documentation regarding the part location.

Master Sample
A master sample is a final sample of the product that is inspected and signed off by the customer. The master sample part is used to train operators and serves as a benchmark for comparison to standard production parts if any quality questions arise.

Checking Aids

This is a detailed list of checking aids used by production. It should include all tools used to inspect, test or measure parts during the assembly process. The list should describe the tool and have its calibration schedule. Checking aids may include check fixtures, contour, variable and attribute gages, models, or templates. MSA may be required for all checking aids based on customer requirements.

Customer Specific Requirements

This element of the submission package relates to all the customer specific requirements. For bulk materials, the customer specific requirements shall be recorded on the "Bulk Material Requirements Checklist".

Part Submission Warrant

The Part Submission Warrant (PSW) form is a summary of the entire PPAP submission. A PSW is required for each part number unless otherwise stated by the customer.

5.2.4. PPAP and PSW approval

a) Approved

Approved indicates that the part or material, including all sub-components, meets all customer requirements. The organization is therefore authorized to ship production quantities of the product.

b) Interim Approval

Interim Approval permits shipment of material for production requirements on a limited time or piece quantity basis. Interim Approval will only be granted when the organization has submitted a deviation form that was approved by TAIGA.

c) Rejected

Rejected means that the PPAP submission does not meet customer requirements. In such cases, the submission and/or process shall be corrected to meet customer requirements. The submission shall be approved before production parts may be shipped.

5.2.5. New PAPP submission

The Supplier shall submit a notification form to TAIGA for any of the following pending changes:

- Use of different material that was used on the previous approved PPAP
- Any Engineering change
- Production from new or modified tooling
- Location / layout change
- Use of different production or test equipment than the one qualified on the previous approved PPAP
- Change of subcontractor for material, parts or services

Based on the analysis of the notification form, the Supplier shall be asked to submit a revised PPAP for TAIGA approval PRIOR to beginning of production shipment from the approved changes.

Annual Requalification

To certify the components and raw materials delivered, a dimensional inspection is required each year following PPAP approval. Under some circumstances, TAIGA could request a resubmission of the full level 3 PPAP package.

6. Process control

6.1. TAIGA Specifications

TAIGA documentation such as Drawings and Engineering Specifications must be reviewed, understood and agreed upon by the Supplier, prior to launch. It is required that a bubble print is created by the Supplier, which identifies ALL characteristics, for example, Diameter, Depth, Angle, etc., and are individually numbered and referenced throughout the process (PFMEA, Control Plan, Work Instructions, Process Plans, etc.).

6.2. Documentation and Data Control

The Supplier shall control all documents and records relating to the purchase order, including technical drawings, specifications, engineering changes, work instructions, manufacturing processes, manufacturing operation sheets, scheduling and quality control plans, as applicable.

6.3. Record Control and Retention

The Supplier shall maintain records of inspections, dispositions, test results and corrective actions to prove that these operations have been performed for a minimum period of ten (10) years after the part becomes inactive.

6.4. Pass Through Characteristics (PTC) Requirements

Pass Through Characteristics (PTC) are product characteristics that are created or revealed during the process and have little to no chance of being detected prior to reaching the customer. Such characteristics will affect fit, form or function at some point.

Each PTC should be identified in both the PFMEA and Control Plan under the Special Characteristic/Classification column and identified by the by the [PTC] notation on the drawing. These characteristics should have a defined inspection method and frequency described in the Control plan. Even if these PTC characteristics are introduced at a sub-tier supplier level, the tier 1 supplier shall manage the characteristic (See section 3.1).

6.5. Error and Mistakes Proofing

Whenever possible, TAIGA advocates the implementation of error-proofing methodology during planning and problem resolution to prevent manufacture of non-conforming products, especially for repetitive functions, difficult tasks prone to mistakes, or where the cost of error is high.

6.6. Work Instructions

The Supplier shall prepare documented work instructions, as necessary, for all employees having responsibilities for the operation of processes that impact product quality. These instructions shall be maintained current and accessible for use at the workstation.

6.7. Control Plan

When APQP or PPAP applies, control plans are required for production phase. Like the FMEA's, Control Plans are living documents and are expected to be reviewed and updated as process or product changes.

6.8. Job Set-Up Verification

Verification of product is required any time that a job is set-up, changed over or out of production for a stated period. The supplier is to verify first piece and in the event of multiple changeovers, last-off inspection is a recommended practice.

6.9. Control of Monitoring and Measuring Devices

Measuring equipment shall be calibrated and verified (validity of results) at specified intervals, or prior to use, against measurement standards traceable to international or national measurement standards; when no such standards exist, the basis for calibration shall be recorded.

6.10. Reworking of Faulty Parts

Reworking faulty parts that are noticed either during our production or as part of a complaint must only be carried out in agreement with the TAIGA quality management and must be clearly labeled as reworked parts in each part/bag/box before delivery. This approach should be part of the reaction plan in the control plan.

6.11. Preventative & Predictive Equipment Maintenance (PM)

To support capacity and quality requirements, it is a necessity that suppliers develop a planned preventive maintenance system to optimize OEE, process variation and process capability by minimizing unplanned downtime. As part of the PM program, suppliers should document and review PM actions.

6.12.Product-Related with Embedded Software

Suppliers furnishing product-related software with embedded software shall implement and maintain a process for software quality assurance of their products.
An assessment process based on ISO 26262 will be utilized to assess supplier's software development process. Using prioritization based on risk and potential impact to TAIGA, Suppliers shall retain documented information of a software development capability self-assessment.

7. Packaging and Labeling

7.1. Handling, storage, and packaging

The supplier shall have a written process in place to ensure that in-process handling, product identification, storage, preservation, packaging of product including relevant documentation to ensure traceability, storage of material and delivery will prevent damage, deterioration, contamination, substitution, or misuse of material.

PACKAGING

Every packaging design shall be approved by TAIGA representative. Suppliers should provide expendable packaging or returnable containers, where appropriate, that provide sufficient density and protection from any likely damage that may occur. Expendable materials and packaging must meet local and national standards for safe disposal and/or recycling. Packaging remains supplier responsibility, regardless of the approval.

LABELING

Labeling and bar code requirements may vary. The TAIGA representative will provide the Supplier with the relevant specifications. As a bare minimum, the labelling should include the following information to ensure traceability: Part number (with revision), Supplier name and Production batch number.

7.2. Identification and traceability of parts, box, shipments

Marking of finished products shall be performed in accordance with the TAIGA instruction.

All boxes must be identified with a label as per TAIGA's specification: Supplier requirements – box labelling (SQLF-001 Rev 003).

7.3. Material certification/raw material

When requested by TAIGA, Material certification is compulsory with each shipment and should include the material test certificate as well as the technical data sheet. The use of substitute material is not permitted unless authorized by the TAIGA engineering department.

7.4. Tool Marking

All Tools and Gauges, property of TAIGA, must be properly and permanently identified by the Supplier according to TAIGA requirements. The identification is to contain the following information: Property of TAIGA, Tool Number, Part Number and Part Name. Suppliers are required to submit significant pictures of the tooling and update their tooling inventory information at PPAP to receive tooling payment.

8. Quality events (NC, problem solving, recalls)

Continual Improvement

Suppliers should define a process for continual improvement, such as ISO 9004, including Annex B.

8.1. Problem Solving Process

Suppliers should use a reliable close-loop problem-solving method to assess all the nonconformities communicated by TAIGA. TAIGA does not strictly define which tool to use and when: There may be specific cases when the TAIGA Quality Representative will require a specific problem-solving tool.
For example (8D Report):

Step		Description
1	Team approach	Consult and coordinate with relevant stakeholders
2	Describe the Problem	State what the problem “Is,” and “Is Not” with respect to what, where, when, who, how, and how many. Use quantitative terms.
3	Containment Action	Immediately contain any suspect product to protect TAIGA and its customers.
4	Root Cause Verification	Identify potential causes, analyze causes for failure mode, validate root cause(s), and identify solutions.
5	Implement Corrective Action	Implement solution. Document the corrective action: update applicable FMEA, control plan and work instructions.
6	Verify Corrective Action	Use check sheets, auditing, sampling, and/or control plans to monitor process performance for effectiveness and sustained improvement
7	Prevent Recurrence	Implement changes to prevent the same type of error from occurring in similar products/processes. Update applicable documents
8	Congratulate the Team	Review, approve, and support. Provide resources and team recognition

Table 7: 8D approach description

8.2. Control of non-conforming products

Shipping of non-conforming materials to TAIGA is not permitted (unless explicitly authorized) and, in any case, will directly affect the Supplier's score card rating. Measures shall be taken to ensure the Supplier's future product conformance and control. The Supplier is also responsible for their subcontractors' conformance to requirements.

Containment

When a problem is discovered at the customer facility, the supplier will be notified immediately and all suspect products must be contained at all locations including, supplier/sub-supplier facilities, warehouses, parts in transit to the customer or other locations, parts on customer production floor. Suppliers are expected to have a strong written procedure for containment and control of non-conforming products.

TAIGA reserves the right to charge back all costs associated with supplier caused non-conforming products, including return of material, loss of production, labor and components, where applicable.

Controlled Quarantine Area

All product which is suspect or non-conforming, for any reason, must be properly identified and stored in a defined quarantined area, away from the production flow or shipping areas. The Supplier must have a system and a procedure in place to manage parts in the quarantine area.

Nonconformities

In the event of non-conforming parts, the Supplier will be notified using a Supplier Quality Alert (SQA).
The Supplier complaint shall be related to any issue identified by TAIGA and TAIGA customers, including quality issues, delivery issues, capacity issues, service issues of mass production parts.

The Supplier's response requirements for the quality alert are:

- Fast response (Short term containment action) within 24 hrs
- Root cause and actions (Long term action) within 10 days
- Actions implementation and validation within 20 days

The time of implementation could be delayed based on the specific complaint upon TAIGA approval.

Recalls

If TAIGA or any of its customers find or suspect that the products are defective, TAIGA will, to the extent possible, notify the Supplier. Supplier shall fully cooperate with TAIGA in implementing any recall programs and/or corrective and preventive action plans. Therefore, the Supplier agrees to reimburse to TAIGA all the costs associated with the implementation of corrective actions.

9. Deviation Request

A Supplier shall not knowingly ship products that deviate from the technical specifications. If such a condition exists, the Supplier may ask TAIGA, in writing, to allow shipment of the product under a written nonconformance deviation.

A Deviation request has a time limit, that shall be indicated in the document, based on number of parts or period, up to a maximum of 3 (three) months.

If requested by the TAIGA Buyer, the Supplier must send samples of such nonconforming items to TAIGA for evaluation. The cost of shipping, inspection, and testing required to determine the potential acceptability of such product will be charged to the Supplier. The Supplier must start working immediately on corrective actions. In all cases, the Supplier shall fully contain all products suspected of being nonconforming.

A copy of the TAIGA-approved deviation document must be included inside of each box.

10. Supplier Performance and Corrective Actions

10.1. Supplier Quality Performance Evaluation:

Suppliers will be evaluated based on two key indicators.

Quality (% Compliant parts)

This metric defines the Rejected percentage (%). The definition of "rejected parts" is the total number of parts returned to the Supplier for any valid quality reason (including those caused by shipping and administrative errors):

$$\%\ \text{Compliant parts} = (1 - \frac{number\ of\ rejected\ parts}{number\ of\ received\ parts})x100$$

Based on TAIGA's expectations, the following table describes the resulting actions or various % reject values.

% Compliant parts	Category	Comment
> 99,9	Meets expectation	Meets all the requirements set by TAIGA
95 – 99,9	Good	Satisfactory; no action required
80 - 95	Marginal	Systemic corrective action may be required
< 80	Unacceptable	Systemic corrective action is required and may require Supplier to meet with TAIGA management representatives.

Table 8: Requirement for the % of compliant parts

Delivery (OTD)

This metric defines the delivery performance rating using the following formula: On Time Delivery (OTD) is based on the contract date. The Supplier should systematically inform TAIGA of any delay in delivering

product and provide a new dispatch date. The Supplier is responsible for additional transport costs due to delays.

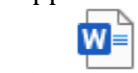
$$\% \text{ OTD} = \frac{number\ of\ parts\ received\ on\ time}{number\ of\ parts\ received} x100$$

% OTD	Category	Comment
> 98	Meet expectations	Meets all the requirements set by TAIGA
90 - 98	Good	Satisfactory; no action required
80 - 89	Marginal	Systemic corrective action may be required
< 80	Unacceptable	Systemic corrective action is required and may require Supplier to meet with TAIGA management representatives.

Table 9: Requirement for the % OTD

11.Contact List and Compliance Matrix

Upon receipt and full reading of the contact list and compliance matrix document, the supplier shall fill the contact list and acknowledge compliance to the various SQAM requirements. In case of non-compliance, the supplier shall notify TAIGA by filling in the comment / action required column.


Contact list and compliance matrix.d

12. Management of Hardware and Fasteners

TAIGA has a procedure in place to cover the procurement of hardware and fasteners which are defined as follow: any item that is used to mechanically join or affix two or more objects together (screws, inserts, rivets, nuts, bolts, etc.). The Hardware and Fasteners Procedure #01 must be reviewed and signed by any supplier providing fasteners or hardware of any sort. This procedure is in place to ensure that the products delivered by the concerned Suppliers are in accordance with what is listed in the TAIGA Standard Hardware Database.

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