Moving energy forward

Supplier Quality Management

Supplier Quality Requirements SQR-0001-C

Table of Contents

1. Scope & purpose

INNIO strives for the highest product and service quality. In this context, supplier quality plays a fundamental role towards INNIO's goal to achieve zero defects."

This document describes the general quality requirements for all direct material and service suppliers.

This includes, among others, requirements for suppliers related to preventive quality measures such as supplier onboarding and qualification of new parts, change management, quality assurance, and corrective measures such as quality case management and supplier improvement plans.

By accepting this document, the supplier acknowledges and agrees to comply with all the requirements stated herein.

2. Applicable standards and documents

Unless otherwise indicated, the latest revision of the standards and documents listed below applies and must be met by the supplier. The Supplier Quality Engineer will inform the supplier if a standard or parts thereof are not applicable for specific items.

2.1.Acronyms and definitions

ANSI – American National Standard Institute

ASME – American Society of Mechanical Engineers

CAV – Characteristics Accountability and Verification

Cg Value – Potential capability index. The spread of a gage's measurements

Cgk Value - Performance capability index. The difference between a gage's average measurement and the reference value

CTP – Critical To Process

CTQ – Critical To Quality

DMAIC – Define-Measure-Analyze-Improve-Control

EHS – Environment, Health & Safety

FMEA – Failure Mode and Effect Analysis. A structured approach to discover potential failures that may exist within the design of a product or process.

FPQ – First Piece Qualification

GPS - Geometrical Product Specifications

Gage R&R – Gage Repeatability and Reproducibility

GSL – Global Supplier List

IATF – International Automotive Task Force

INNIO Buyer -Main operational commercial counterpart to suppliers, placing FPQ po´s

INNIO Category Leader – Main strategic commercial counterpart to suppliers

INNIO Planner – Main logistics counterpart to suppliers, placing serial po's

ISO – International Organisation for Standardization

JWN – Jenbacher Werksnorm (Jenbacher internal standard)

MNDA – Mutual Non-Disclosure Agreement

MPP – Manufacturing Process Plan

NDT – Non Destructive Testing

NC – Non-Conformity

PLQ – Pilot Lot Qualification

PO – Purchase Order

PQP – Product Quality Plan

RCA – Root Cause Analysis

RTV – Return to Vendor

SDR – Supplier Deviation Request

SQE – Supplier Quality Engineer: Main supplier contact for quality and technical topics

SDP – Supplier Development Project

SIP – Supplier Improvement Plan

SPC – Statistical Process Control

TRS – Technical Regulations and/or Standards

VDA – Verband der Automobilindustrie e.V.

VDI – Verein deutscher Ingenieure

VDE – Verein deutscher Elektrotechniker

WPQR – Welding Procedure Qualification Record

WPS – Welding Process Specification

8D Report – A structured eight step approach to problem solving

2.2. INNIO standards

The following INNIO standards (JWNs) will be provided by the SQE together with this document, if applicable:

JWN 489 489 - Technical Delivery Conditions for Component Marking -

JWN 890 110 - General packing guidelines for bought-in parts -

JWN 890 115 -INNIO Cleanliness Standard for Engine Components – for Jenbacher

STD-02-0860 - Part Cleanliness Standard - for Waukesha

2.3. International Standards

ISO 9001 Quality Management Systems Requirements or

IATF 16949

3. Requirements

3.1.Introduction

INNIO is a leading energy solution and service provider that empowers industries and communities to make sustainable energy work today and bring about a cleaner tomorrow.

One of the main factors in reaching this goal is the quality INNIO demands of itself, its products, services, and business processes. To meet this quality standard, all INNIO products must undergo a clearly defined qualification process before they are launched or when they are changed. The same applies to supplier products.

INNIO aims at establishing and maintaining a close partnership with its suppliers. This cooperation is centered on the following objectives:

- Continuous improvement of customer satisfaction
- Reduction of market launch periods
- Targeted improvement of the product and process quality
- Reduction of development and manufacturing costs

The requirements set forth herein will ensure a consistent, quality-based relationship between INNIO and all its direct material suppliers.

3.1.1. General guideline

Notwithstanding the inspections, tests and audits carried out by INNIO and the advice given by INNIO experts, **suppliers are fully responsible for their qualification process and the compliance with the applicable specifications and requirements from this document** of the products they supply.

It is the supplier's responsibility to establish a quality management system that ensures the above.

All requirements from applicable industry standards (such as ISO, ASME, ANSI, etc.) must also be integrated into this system. These system elements must be made available to INNIO for review upon request.

3.1.2. Communication

The INNIO purchase order designates the sourcing representatives (Buyer and Category Leader) who are the main contact for commercial topics with the supplier.

The SQE is the main contact for quality and technical topics.

The supplier shall provide a neutral e-mail address and telephone number to the SQE with which the supplier can be reached to receive quality cases.

3.2. Quality system

3.2.1. Minimum quality system requirements

The supplier must maintain a documented quality system to ensure conformance with the requirements of the INNIO specifications in accordance with a zero defect strategy and must take all quality assurance measures required for this purpose.

INNIO requires that this quality management system meets the requirements of the latest ISO 9001 (Quality management systems - requirements) standard or an equivalent applicable standard (e.g. IATF 16949)

Compliance with this requirement must be demonstrated by one of the following upon INNIO's request:

- Provision of a copy of a valid certificate if requested, or
- Successful completion of an audit of the quality management system in accordance with the latest requirements of ISO 9001. INNIO reserves the right to have this audit performed by a third party designated by INNIO. The supplier is responsible for all costs of the audit directly to the auditing party.

3.2.2. Special processes

A process where the results cannot be fully verified by subsequent nondestructive inspection and testing of the product, and in which processing defects may not become apparent until after the product has been used, is by definition referred to as a "special process."

Suppliers must have specific, documented, and controlled procedures for each special process which takes place. They must establish process CTP/CTQs and monitor and document them.

Only qualified/certified personnel may be assigned to perform a special process.

The supplier must develop a specific training plan and regularly review the performance of personnel.

For all welding operations the supplier must provide WPSs, WPQRs and valid welder certifications based on ISO standard The supplier is obliged to provide proof of welding quality by NDT as required by INNIO.

For all NDT operations, the supplier must provide NDT instructions and valid NDT personnel certificates.

The supplier is responsible for ensuring that these documents are also submitted by subcontractors performing welding or NDT work.

3.2.3. Record retention

The supplier must have a written procedure for the documentation and retention of quality and product records for products supplied to INNIO. **The record retention period must be a minimum of ten (10) years** unless otherwise specified by INNIO.

Records must include but are not limited to product quality inspection and test plans including results, material specifications, qualification documentation and certificates of conformance.

Specific component record requirements may be specified in INNIO purchase orders, contracts, or specification. It is the responsibility of the supplier to determine the appropriate storage means to meet the retention requirement and allow for timely retrieval of records.

3.3. Supplier approval

To receive a INNIO purchase order, a supplier must be approved per INNIO Sourcing Quality Management System procedures.

Criteria for approval could include, but is not limited to, the following:

- Properly executed MNDA
- Acknowledgement of compliance with INNIO integrity guidelines
- Completion and passing of required business and technical surveys
- A documented quality system
- Technical capability
- EHS compliance/employment/security practices
- Financial viability
- Customer service aptitude
- Strategic value

The supplier approval process is performed prior to a first purchase order being issued to the supplier. When the approval process has been successfully completed, a unique supplier code (GSL code) is assigned to the supplier.

3.4. Supplier qualification

3.4.1. General requirements

A supplier must become qualified for each specific production process to produce a part or category family. Parts are classified by INNIO engineering based on risk in class-A, class-B, and class-C parts.

Through the qualification process, the supplier must demonstrate the ability to provide parts in accordance with the specified requirements of INNIO.

The production of qualification parts must be done under serial conditions. The INNIO qualification team decides if the qualification may be done with a FPQ or may include a PLQ.

The qualification requirements are defined by the INNIO qualification team together with the supplier. The supplier is required to perform qualifications based on the qualification requirements as defined in the qualification plan.

All parts that are shipped before the qualification is approved (e.g. prototype parts, etc.) must be 100% inspected by the supplier and a full CAV report (dimensions + other characteristics) must be provided by the supplier for every part unless otherwise agreed with the SQE.

A **qualification is required** in, but not limited to the following cases:

A new or existing supplier is producing and shipping material for the first time for INNIO

A design or process change has occurred at the supplier or at INNIO, changing the processing, form, fit or function of the product
An existing supplier or critical sub-tier supplier changes its manufacturing location, unless formal exception is granted by the SQE
Quality issues arise at the supplier, putting current qualifications into question
After more than 3 years without producing the specific part. The qualification scope is defined based on an INNIO risk assessment.

A qualification is **not required** in the following cases:

1. Prototypes and samples. For such cases, the supplier must provide evidence for conformity with the applicable specifications (dimensional reports, material reports, etc.)
2. Standard parts
3. Project specific parts or assemblies if they are controlled and inspected by the supplier and/or INNIO.
4. Service parts if they are a. Part of a qualified assembly b. Sporadically needed and inspected/controlled by the supplier

The final decision if a qualification is needed is made by the INNIO SQE.

3.4.2.Drawing-, manufacturing- and producibility review

Prior to manufacturing the parts, the supplier may be required to participate in a detailed drawing and design review with the INNIO qualification team to ensure that the supplier accurately understands the drawing requirements and specifications, including the specified TRS requirements, during the qualification process.

3.4.3.Supplier deviation matrix

In principle, all requirements of the specification must be met by the supplier. If this is not the case, the supplier must create a specification deviation matrix listing all areas where INNIO specifications cannot be met or are not applicable. This matrix will be reviewed, and any next steps will be decided by INNIO.

3.4.4. Manufacturing Process Plan

The MPP shall contain at least the following information:

1. A list of all applicable INNIO drawings/specifications, outline drawings, and special process documentation along with the latest revision number for each component. For parts manufactured to specification, the supplier shall provide a list of all supplier drawings and revisions.

2. Sequential listing of all operations and identification of special processes and associated procedures.
3. Identification of all critical sub-tier suppliers and their manufacturing locations. Critical sub-tier suppliers include but are not limited to suppliers of raw materials and special processes.
4. A sequence plan of all manufacturing and inspection steps with appropriate documentation. Supplier proprietary processes/documentation may be available for inspection/review by the SQE and INNIO Engineering.
5. The manufacturing location.
6. A revision and approval history of the MPP.

Once the component is qualified, the MPP is considered part of the purchase order requirements for production.

The supplier shall use Appendix 1: MPP Template supplied by the SQE unless otherwise approved.

3.4.5. Product Quality Plan

At a minimum, the PQP must contain the following information:

1. Drawing number(s) and part description(s).
2. Listing of all technical documents governing the inspection or testing activity (supplier documents, INNIO specifications, industry codes/standards etc.).
3. Identification of the testing or inspection criteria in an itemized list. For each item, specify what is to be tested (at the characteristic level), how it is to be tested, the frequency with which it is to be tested, when the test or inspection is to be performed (in relation to the manufacturing process), who performs the test (e.g., operator, inspector, etc.), and the acceptance criteria.
4. Sign-off documentation. Completion of each inspection and test will be accompanied by appropriate sign-off documentation. Each inspection and test must be signed-off during the execution of the PQP.
5. Identification and verification of CTQs and inspection methods. CTQs can be identified by purchase orders, specifications, drawings, or by the appropriate INNIO qualification team.

The PQP may be submitted as part of the MPP or as a separate document. In either case, the PQP must be approved by the SQE. Revisions to the PQP shall be controlled by the supplier.

3.4.6. Process and/or product FMEA

The supplier must perform a production process FMEA for every class-A and class-B qualification. INNIO reserves the right to request and review these documents and also request a product FMEA.

3.4.7. Characteristic Accountability and Verification (CAV)

When required by the qualification program and at INNIO´s specific request, a CAV form must be completed and maintained by the supplier. The CAV is a document to ensure controlled processes for maintaining drawing features and characteristics. The CAV form must include, at a minimum, the following items:

1. Identification of components (item number, description, serial number etc.)

2. Characteristics and feature accountability
3. Inspection and test results

An example of a CAV template can be found under Appendix 2: CAV Template.

Once the level of inspection and product acceptance requirement has been determined and specified on the CAV form, it must be applied to all production components hereafter to ensure controlled processes for maintaining drawing features and characteristics.

The supplier must use the template supplied by the SQE unless otherwise approved.

3.4.8.Sub-Tier suppliers

When a supplier outsources a process, the supplier is fully responsible for qualifying and monitoring all sub-tier suppliers in accordance with INNIO requirements as described in this document and for notifying INNIO of such qualification.

INNIO reserves the right to:

- Review the supplier's process for the selecting, qualifying, and monitoring of sub-tier suppliers.
- Approve or disapprove sub-tier supplier qualifications.
- Audit and monitor the sub-tier supplier's processes and facilities when deemed necessary.

This requirement also applies if the supplier is a sales representative or distributor that purchases manufactured parts or assemblies from sub-tier suppliers.

3.4.9. Qualification documentation

The **qualification documents** must, when defined as applicable by the SQE according to the INNIO requirements for that specific item, contain the following information, and **must be supplied** to the SQE in electronic format **prior to the shipment of the FPQ parts**.

Section #	Quality Form Name	Quality Form Description
1	INNIO specifications	List of all INNIO specifications and drawings, including revision level
2	Specification deviation matrix	List of all deviations to the INNIO specification; INNIO approval required
3	Supplier drawings	Copy of all supplier generated drawings, including revision level.
4	MPP	see chapter 3.4.4
5	PQP	see chapter 3.4.5
6	FMEA	see chapter 3.4.6
7	CAV	see chapter 3.4.7 Including measuring procedures

8	Material test reports	Provide copies of material test reports
9	Component conformance	Include Certificates of Conformity for all major components: e.g., pump curves, test certificates, calibration certificates and all relevant data sheets
10	Functional test reports	This includes test procedures, documented data of all tests performed and confirmation of compliance with requirements.
11	Product safety risk assessment	Provide a risk assessment in accordance with ISO 12100-2010, e.g. when the Machinery Directive or any other applicable product safety law and regulation applies.
12	Code compliance, TRS confirmations	Provide a copy of all documents such as declarations of conformity to confirm compliance with applicable regulations or specifications. (e.g. CE, UL, Gost Reach Mill Certificates,)
13	Welding procedures	WPS, WPQR, welder qualification records
14	Nondestructive testing	NDT Testing procedures Certificate for testing personnel
15	Castings and forgings	Procedures, data and charts, 3D casting solidification simulation
16	Mechanical testing	Test reports
17	Heat treatment	Procedures and heat curves
18	Surface preparation and painting	Including all metal and paint preparation procedures, the painting itself and confirmation of compliance with requirements.
19	All other special process documentation	E.g. soldering
20	Sub-tier supplier qualification	Reports
21	GR&R	Report
22	Preservation and packaging	Provide the packaging description/concept in accordance with INNIO specification JWN 890 110
23	SDR records	Provide a copy of related SDRs

24	Other documentation	Any other documentation either required by an INNIO specification or applicable standard or requested by the SQE.

The completeness and correctness of the documentation is a prerequisite for the release for shipment of a part to be qualified and thus a mandatory requirement for the completion of the qualification.

3.4.10. Double Check

To ensure geometrical measurement results of the supplier and INNIO are comparable, the supplier must provide a measurement procedure including drawing with measurement reference points (ballooned part drawing), used measurement device, basic dimensions, and tolerances as part of the qualification upon INNIO´s request. This procedure must be agreed with the INNIO SQE.

INNIO may measure a sample of parts itself and compare them with the documentation provided by the supplier.

If necessary or in case of deviations, INNIO reserves the right to obtain all measurement programs, calibration data, qualification certificates etc. from the supplier free of charge.

3.4.11. Qualification approval

After successful completion of the qualification and receipt of a written qualification approval by the INNIO SQE, the supplier is allowed to deliver this item in series.

Qualification approval does not relieve the supplier of full responsibility to ensure on subsequent orders that manufacturing processes remain under control and the delivered product or process meets all drawing and specification requirements, unless formal, written approval for deviation is obtained from INNIO in the form of an SDR – see chapter 3.5.4.

If re-qualification becomes necessary due to a violation of the specification, INNIO reserves to right to charge all costs of such re-qualification to the supplier.

3.4.12. Frozen processes

Once a qualification is approved, the **MPP, PQP and all associated documents** are given a frozen process status and **must not be changed until approved by the INNIO SQE.** For changes in these documents that do not pose an additional potential risk, for example the introduction of additional checks, an approval request is not required. In all other cases, e.g. the change of material, process, manufacturing equipment, manufacturing location, a test procedure or the change of a major sub-tier supplier, approval is required.

Upon request of the SQE, the supplier must use a frozen process change request template that will be provided at the discretion of the SQE.

3.5. INNIO supplier policies & requirements

3.5.1. INNIO policy for specification transmittal to suppliers

It is incumbent upon the supplier to align with the sourcing category leader and/or SQE on the appropriate methods for locating documents that may be specific to their organization. It is also the supplier's responsibility to review revisions to specifications on an ongoing basis with the category leader and/or SQE to ensure that the correct revisions submitted to the supplier are applied at the supplier's facility. Unless otherwise notified by INNIO, suppliers are required to implement specification revisions on all existing and future purchase orders unless the parts have already entered the manufacturing process. Exceptions to this policy must be agreed upon between the supplier and INNIO category leader.

3.5.2. INNIO Incoming Inspection

The supplier is responsible for establishing an appropriate final inspection to ensure that only parts that comply with the specification are delivered to INNIO.

The supplier acknowledges that INNIO will not perform a technical incoming goods inspection for all deliveries but only a commercial check of quantity and part number.

3.5.3. Source inspection and test witness requirements

INNIO and/or its customer may elect to inspect parts, and/or witness subassembly manufacturing at the supplier's facility during processing, testing, or at final inspection. All source and test witness inspection requirements are to be identified by the supplier's quality representative or other designated representatives and coordinated with the INNIO SQE.

It is the responsibility of the supplier to notify INNIO in advance when the material is ready for inspection. The timing of this advance notice must be at least 20 days (unless otherwise approved by INNIO) prior to a scheduled test/inspection/witness point.

An acceptance of a product by INNIO and/or the customer does not release the supplier of its obligations to supply components that meet the requirements of the purchase order.

3.5.4. Supplier Deviation Request

If a deviation from a requirement, such as the drawing, other specification, agreed MPP, or packaging is known, the supplier must submit a SDR to the INNIO SQE as early as possible in the process.

The supplier must use the INNIO SDR form to request acceptance. Appendix 3: SDR Form will be provided by the SQE as needed.

The supplier must not ship any deviating part before this SDR form has been approved by the INNIO SQE. It is in INNIO's sole discretion to grant such approval. Once approved, the supplier must include a copy of the SDR with the shipping documents.

The SDR must contain a detailed description of the deviation (if necessary, together with photos, reports, sketches, ...), a containment, probable source / root cause and proposed remedial / corrective action (e.g. 8D Report) as part of the initial submittal, as well as the INNIO part number,

PO-number, number of defective parts, serial number (if available) or batch number of the affected component(s).

3.5.5. Non-Conformities (NC)

A defect is defined as the non-conformity of a delivered part with the characteristics required by the purchased part specification and/or an applicable legal regulation, or the deviation from a condition that can be reasonably expected.

3.5.5.1. Notification and documentation

INNIO documents all issues in an incident management system for internal defects and another for external defects. INNIO issues a claim to the supplier by sending a ´Non Conformance Notification´ for internal defects or a ´Non Conformance for INNIO warranty case´ for external defects/field issues. Therefore, the supplier must provide a monitored non-personal email address with a maintained distribution list that includes all members who are to receive these claims from INNIO. In such a case, the supplier must immediately take the necessary measures to ensure that no further part with the identified failure is sent to INNIO. If the supplier has to stop deliveries to take these measures, this must be aligned with the INNIO planner and SQE to ensure that material shortages in production at INNIO are avoided.

The supplier must maintain a system to store and document all non-conformity notifications received by INNIO. Each document must be identifiable with the INNIO ID number.

3.5.5.2. 8D report

When INNIO requests an 8D Report, the supplier must adhere to the following timeline:

1. Define and implement a containment and inform the INNIO SQE about it within 48hours.
2. Send a complete 8D Report including root cause definition, corrective and preventive actions to the INNIO SQE within 21 days.

The supplier must use the template in Appendix 3: SDR Form or a similar standard template.

3.5.5.3. Handling of defective parts for internal defects

If INNIO has identified an internal non-conformance, the INNIO SQE aligns with the INNIO operations quality team, the material planner and the supplier to decide on one of the following options depending on the availability of material and urgency, in the following order:

• Return of the defective products to the supplier and, if it is a possible serial problem that requires a check of all items, also a return of the items on stock, or

• Selection and/or rework of the faulty products at INNIO by the supplier, or

• Selection and/or rework of the faulty products by INNIO or a third party commissioned by INNIO, in the event that the prompt availability of the supplier is not given under reasonable circumstances.

Additional containment measures may be conducted by INNIO as required.

The supplier shall always follow the handling and disposition of non-conforming parts as described at the end of the Non Conformance Notification. In case of ambiguity regarding

replacement deliveries, the supplier should contact the planner and, in case of technical need for clarification the SQE.

The supplier must notify the INNIO SQE within 48 hours if the agreement with the NC disposition and the part status indicated on the non-conformity is not given.

For any repairs or replacements, supplier shall, at its expense, perform all tests requested by buyer to verify conformance with this purchase order.

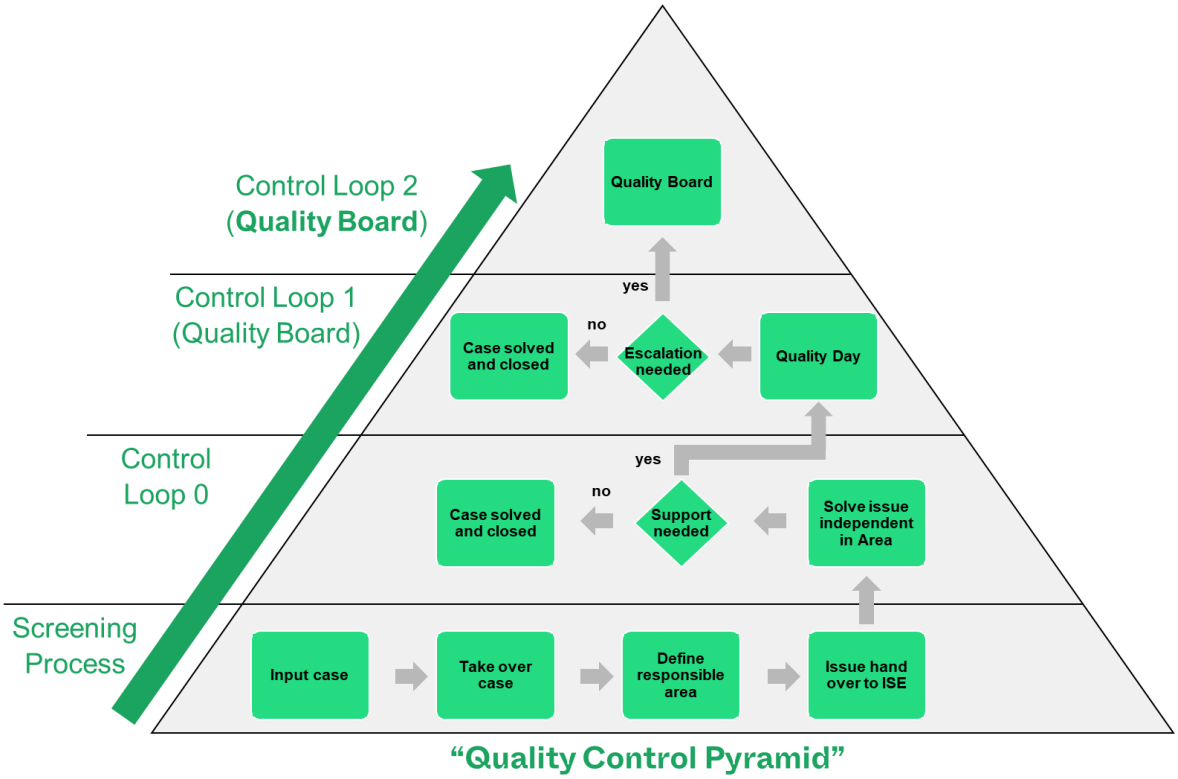
3.5.6. Quality case management

3.5.6.1. Quality issue process

With regard to all quality issues, **INNIO requires a defined holistic problem-solving process from its suppliers.** This includes the following requirements:

1. Steering/ monitoring and solving of all quality issues, regardless of level or priority or impact
2. Definition of owners for each quality issue.
3. A defined system for follow-up and tracking, (see INNIO reference below).
4. Regular progress update to INNIO and communication of implemented measures.

As a reference, below the “Quality Control Pyramid” of INNIO.



“Quality Control Pyramid”

1. Each NC detected, inhouse at INNIO or at INNIO customer, shall be processed
2. Depending on the severity of the defect (process or component), different actions are to be taken.
3. At the lowest level (Quality Control Loop 0), the department causing the defect works through the problem independently.

4. In Control Loop 1, the problem is solved with the help of a quality employee and, if required, regularly reported to management during the processing phase.
5. In the highest level (Control Loop 2), the management is involved from the beginning.
6. The management holds regular Quality Board meetings with focus on:

- Steering TOP Quality Issues, CL 1 and 2
- Audit results/ customer feedback
- Top customer issues

3.5.6.2. Root Cause Analysis/Quality Case Process

In the case of quality cases of greater magnitude and when requested by the INNIO SQE, the supplier must perform a formal root cause analysis. The supplier must use an appropriate methodology to identify the root cause, as well as containment, corrective and preventive actions. The supplier must also nominate a dedicated RCA-leader as a contact person for the INNIO SQE and RCA team.

1. Containment shall define all necessary (temporary) measures to minimize the risk for customers and INNIO.
2. The correction shall describe the necessary action to repair, rework or replace the affected item(s).
3. Root cause(s) shall describe the factor(s) that caused a NC and have to be permanently eliminated.
4. The corrective action(s) shall define all actions taken to eliminate the cause(s)of an existing non-conformance to prevent recurrence.
5. The preventive action(s) shall define all actions taken to eliminate the cause(s) of a potential non-conformance or undesirable potential situation to prevent occurrence.

3.5.7. Supply chain resilience

To address dynamic supply chain conditions, INNIO has implemented a comprehensive supply chain risk management process. The primary objective is to evaluate and mitigate risks associated with our supply chain network promptly and effectively, in collaboration with our suppliers. These risks include operational factors (such as production capacity and quality control), logistical challenges (such as transportation disruptions), geopolitical uncertainties (such as political instability), natural disasters, and planned or forced production transfers. Upon identifying such risks, either the GCL or the SQE will engage with the supplier to develop a strategy for risk mitigation.

INNIO expects full cooperation from our suppliers in these instances and anticipates proactive identification and communication of risks to facilitate joint action with INNIO in mitigating them.

By embracing robust supply chain risk management practices with our suppliers, INNIO wants to enhance overall resilience, minimize potential disruptions, optimize operational efficiency, and sustain a competitive advantage in an increasingly difficult and uncertain business landscape.

3.5.8. Process capability

The supplier must regularly analyze the required process capability data and provide reports to the INNIO SQE as required. As a minimum, the supplier shall measure and record the data for all CTQs/CTPs indicated on drawings and specifications, respectively, unless requested by the SQE otherwise.

In cases where the SQE considers it appropriate to request data to statistically analyze the supplier's production process performance/capability, the supplier shall provide such data to INNIO in a format defined by the SQE.

If the submitted process capability result does not meet the requirements, the supplier will have to implement an improvement plan. The supplier is also responsible for ensuring that these requirements are met by their sub-suppliers, if applicable.

3.5.9. General requirements for measuring instruments

The measuring instruments must be calibrated, with provision of a calibration certificate, and tested according to the standards applicable to them.

The supplier must keep a written record in tabular form and submit it to INNIO on request. The traceable certificates of the measuring equipment used must be available.

In accordance with VDA 5 the accuracy/resolution of the measuring instrument must be < 10% of the tolerance field to be measured.

If agreed with the SQE, a go/no-go gage can be used.

Threads can be checked with monitored thread gauges unless explicitly requested otherwise.

The reproducible accuracy as per the test certificate must have a Cg/CgK value > 1.33. The nominal calibration must be measured 25 times without user influence. Measuring inaccuracy after the Gage R&R shall be less than 20% of the characteristic's tolerance.

If required, all the documentation on the above checks and tests shall be provided to INNIO.

The supplier must develop a measurement strategy, agree it with the INNIO SQE and provide a written copy. Changes may only be made with the consent of INNIO.

3.5.10. Preventive maintenance

The supplier must establish and implement a preventive maintenance program for all product specific tooling that are funded by INNIO. This includes cleaning, inspection, repair and minor refurbishments (stain removal, cleaning of parting lines, replacement of damaged tool parts, etc.).

Major repairs and tool replacement are to be handled on a case-by-case basis by the INNIO GCL. The supplier shall inform the GCL at a minimum 6 months in advance when a tool requires a major repair or replacement.

3.5.11. Supplier score card

The Supplier Scorecard is a tool that is used to get visibility on a supplier´s performance. The rating is done separately for four key areas Commercial, Logistics, Quality and Sustainability.

Each provider considered for this rating is evaluated in the individual categories according to hard and soft facts, which add up to an overall score.

The goal is to show each supplier´s performance according to INNIO requirements and criteria to drive supplier improvement plans (SIP) where it is needed.

The supplier scorecard gets generated and sent out to suppliers on a quarterly basis.

Below is an example of a scorecard. If a supplier has specific questions about the scorecard, the GCL is available to answer them.

Conflict Minerals: Virtually all INNIO's products contain one or more of the minerals tin, tantalum, tungsten and gold (3TG). The mining and trade of these materials from the Democratic Republic of Congo and surrounding countries have gained international attention for the role that they can play as "conflict minerals," financing deadly armed groups in the region.

We support industry-wide due diligence mechanisms that enable conflict-free sourcing, such as the Responsible Minerals Initiative (RMI) and conduct an annual survey to determine the origin of 3TG in our supply chains. The supplier shall perform appropriate due diligence on its supply chain in order to fulfill their reporting obligations.

In addition to this survey, INNIO requires all suppliers of products that contain 3TG to adopt policies and establish systems to ensure the procurement of 3TG from sources that have been verified as

conflict-free. INNIO reserves the right to disengage with suppliers which are not responding to our survey or do not take sufficient action to reduce risks within their supply chain.

Because of this potential for association with conflict and human rights abuses, INNIO strives to ensure that our supply chains are ethical and sustainable, and therefore the Conflict Minerals is part of the Supplier Scorecard.

3.5.12. Supplier improvement and development

3.5.12.1. Supplier Development Project (SDP)

Supplier development refers to a proactive approach that INNIO may take to improve the capabilities and performance of its suppliers. It involves identifying potential areas for improvement and implementing strategies to support and develop suppliers to meet INNIO´s evolving needs and standards.

Such supplier development may be triggered by a supplier assessment. This is carried out by INNIO with the focus of identifying opportunities for growth, collaboration, and optimization. Here are the key aspects:

Early assessment: INNIO conducts an initial assessment of potential suppliers to evaluate their capabilities, resources, processes, and overall fit with the company's requirements. This assessment can include factors such as technical expertise, production capacity, innovation potential, and alignment with the company's values and goals

Capability enhancement: Supplier development aims to enhance the supplier's capabilities to meet INNIO´s present and future requirements. This may involve providing technical support, training programs, knowledge sharing, and access to resources or expertise. INNIO may also collaborate closely with the supplier to develop new products, improve existing processes, or explore innovative solutions together.

Continuous improvement: Supplier development emphasizes a continuous improvement mindset. INNIO and the supplier work together to identify areas for improvement, streamline processes, optimize supply chain operations, and enhance quality control measures. Regular performance reviews and feedback sessions are conducted to monitor progress and provide guidance.

Long-term partnerships: Supplier development initiatives aim to build long-term partnerships based on shared goals, mutual benefits, and trust.

Supplier development enhances collaboration, increases supplier performance, reduces risks, and ultimately contributes to the overall success of the company's supply chain and business operations.

3.5.12.2.Supplier Improvement Plan (SIP)

If, based on the scorecard results, areas are identified where suppliers are not meeting expectations, INNIO may initiate a SIP to enhance the performance and capabilities of its suppliers. By implementing a SIP, INNIO aims to foster long-term partnerships with their suppliers, enhance product or service quality, streamline supply chain operations, reduce costs, and ultimately improve customer satisfaction.

The SIP consists of the following elements:

1. Assessment using the score card and decision to start an SIP
2. INNIO sends SIP letter to supplier
3. Kick off meeting to set expectations as well as clear and measurable goals.
4. Root cause analysis. In order to address und underlying issues and challenges, a thorough analysis of the root causes by the supplier is expected.
5. Action plan development. The plan outlines specific steps, timelines, and responsibilities to be undertaken by the supplier to address the identified areas of improvement. It may include process enhancements, training programs, quality control measures, or supply chain optimization strategies.
6. Action plan meetings: The progress of the supplier improvement plan is continuously monitored and evaluated against the established goals and expectations.
7. Recognition and rewards. Incentives such as increased business opportunities, or preferential treatment may be offered to suppliers who consistently meet or exceed expectations. Whereas business might eventually be moved away from suppliers who do not.

3.5.13. Packing

The supplier must comply with all requirements defined in JWN890110 General packing guidelines for bought-in parts. In cases of deviations from this standard, the approval of the INNIO SQE must be obtained. The packaging of the delivered parts must ensure that the parts can be used in subsequent further processing or assembly at INNIO without additional treatment (cleaning etc.). The parts must be free of oil and grease, machining residues, any kind of dirt and at the same time free of corrosion. If special cleanliness requirements are defined as per INNIO specification, the supplier is responsible for ensuring that the packaging is capable of maintaining cleanliness until unpacking at INNIO or end customer.

The supplier must inform INNIO about the minimum storage period guaranteed by the packaging.

During the qualification of a specific part, the supplier must submit a packaging proposal.

3.5.14. Phase out

If a supplier plans to phase out a product, INNIO must be notified no later than one year prior to the phase-out date and no later than six months prior to the last buy option date.

3.6. Supplier confirmation

The undersigned hereby expressly confirms that he/she has the appropriate power of attorney to legally sign this document on behalf of the supplier.

Supplier Name: _____

Date/Signature Supplier: _____

Name (Block Letters)/Title: _____

Agreed Deviations from this document:

Chapter	Deviation

Date/Signature INNIO: _____

Name: _____

Title: _____

3.6.1. Appendices

3.6.1.1. Appendix 1: MPP Template

Supplier Logo	**Supplier Name:**	
	Supplier Address:	**Manufacturing Address:**

Manufacturing Process Plan (MPP)

(acc. to SQR-0001-C)

MPP - No	Current Revision	Revision Date	Author	Document Changes
	0			1st Issue

Part Number		MPP Date of Issue	
Part Name		MPP approved by	
Drawing Number		INNIO Approval Date	

1.) Specification

INNIO Specifications:

	Specification Number	Revision	Revision Date	Document Title
e.g.	435329	B	07.06.2023	INNIO Drawing J0667 803 01 04
e.g.	RAIP 41000	-	07.06.2023	Requirement- and Inspection Plan

Supplier Specifications (workinstructions etc):

	Specification Number	Revision	Revision Date	Document Title
e.g.	PM4105	9	07.06.2023	Incoming Material Inspection and Release for Production

2.) Special Processes and Inspection

Special Processes:

	Process	Purpose	Procedure Number	Revision	Revision Date
e.g.	Welding	Repair welding Instruction	QI/23-02	v1.0	07.06.2023

Visual Weld Inspection Procedure

Applicable (Yes/No)	Procedure Name	Procedure Number	Revision	Revision Date
(Yes) (No)				

Non-Destructive Testing:

	Inspection Procedure	Procedure No.	Revision	Date of Rev.		
e.g.	MT	QI/00-48	V1.0	07.06.2023		

Testing Personnel NDT:

	Inspector Name	Inspection Procedure	Level	Certifying Organization	Certificate Number	Certification Date
e.g.	Joe Tester	MT	2	Certificates Org.	xxxxx	07.06.2023

3.) Component Parts and Sources

Critical Qualified Sub-suppliers:

	Sub-Supplier Name	Service/Material Supplied	Sub-Supplier Address	Date of Last Supplier Audit
e.g.	Mock Ltd	St52-3	Dummy Street, Mockville	07.06.2023

4.) Detail of Operations

Step	Operation	Description	INNIO Document	Supplier Document	Remarks	Documentation Method
1	e.g. Material Release	e.g. Material check against PO	42028	PM4105	degree of deformation of the raw material min. 3	
2						
3						
4						
5						
6						
7						

3.6.1.2. Appendix 2: CAV Template

Characteristics Accountability and Verification

Part Number:	**Part Name:**	**Serial Number:**	**CAV Number:**
Drawing Number:	**Drawing Revision:**	**Specification Name/ Number:**	
Supplier Name:	**INNIO PO Number:**	**Qualification Reference:**	

Characteristic/Feature Accountability					**Inspection / Test Results**			
Char. No.	**Reference Location/ ID**	**Characteristic Designator**	**Requirement**	**UoM**	**Actual Value**	**Measurement Equipemnt**	**Result**	**Additional Data / Remarks**

Comments:

Prepared by:	**Date:**

3.6.1.3. Appendix 3: SDR Form

INNIO Supplier Deviation Request	Y Y Y Y - M M - D D - 0 0	
	Date	Sequence #

1. THIS SECTION TO BE COMPLETED BY SUPPLIER:

Non-Conformance: *(short description and reason for change, proposed change, details as backup)*	Supplier SDR Ref #:
	Buyer Name:
	Business Unit:
	# Pages Attached:
	Supplier Name:
	Supplier Contact:
	Supplier Site:
	Phone #:
	Email:
An 8D-Report has to be submitted	Purchase Order #/Line:
Corrective Action: (verified action to prevent reoccurrence)	Qty. Def #:
	Part. #:
	Part Name:
	Associated with Open Qualification? Y/N
	Qualification Number:
	Batch/Serial #:
	Serial #:
CA implementation date:	Other SDRs Submitted for This Part:

2. DISPOSITION COMMENTS / SPECIAL INSTRUCTIONS

	SQE Name:
☐ Accept	Secondary SQE Name:
☐ Scrap/Reject	Comments:
☐ Rework	
☐ Repair	

3. AUTHORIZATION:

DISTRIBUTION	NAME	OK	REJECT	SIGNATURE	DATE
Supplier Quality Engineer		☐	☐		
Design Engineer		☐	☐		
Materials Engineer		☐	☐		
Other(specify)		☐	☐		

4. SDR Close Date:

Revised 11/2018

3.6.1.4. Appendix 4: 8D Form

8D Report

Lieferant (Supplier)		**Lieferanten Nr.:** (Supplier No.)	

Beanstandungsgrund: (Concern Title)			
Fehlermeldung - Nr. (Non-Conformity No.)		**8D-Bericht Nr.:** (8D Report No)	
Beanstandete Menge: (No of Claimed Parts)		**8D-Start-Datum:** (Start Date)	
Teilebezeichnung: (Part Description)		**Teilenummer | Index** (Part No. | Index)	

1	**Team: Name, Abteilung** (Name, Department)	**Teamleitung** (Headed by)	
2	**Problembeschreibung** (Problem Description)	**Fehlercharakter** (Problem Profile Data)	
3	**Sofortmaßnahmen** (Containment Action(s))	**% Wirkung** (Effect)	**Einführungsdatum** (Implementation Date)
4	**Fehlerursache(n)** (Root Cause(s))	**% Anteile** (Contribution)	
5	**Geplante Abstellmaßnahme(n)** (Chosen Permanent Corrective Action(s))	**Ergebniskontrolle** (Verification Result)	
6	**Eingeführte Abstellmaßnahme(n)** (Implemented Permanent Corrective Action(s))	**Einsatztermin** (Implementation Date)	**Ergebniskontrolle** (Verification Result)
7	**Fehlerwiederholungen verhindern** (Action(s) to Prevent Recurrence) ☐ Product FMEA ☐ Process FMEA ☐ Control Plan ☐ Procedure	**Einführtermin** (Implementation Date)	**Verantwortlich** (Responsible)
8	**Kundenfeedback erhalten** (Customer Feedback Received)	**Abschlussdatum** (Closing Date)	**Verantwortlich** (Responsible)

The supplier will receive all templates from the SQE upon request.