SUPPLIER QUALITY ASSURANCE MANUAL

www.rosselltechsys.com

Supplier Quality Assurance Manual

Document ID: RT/QA/D/SQAM

Version Number : 1.2

Date of Issue : 14/05/2022

Rossell Techsys

www.rosselltechsys.com

Disclaimer

All rights reserved. No part of this document may be reproduced in any way, including but not limited to photocopy, photograph, magnetic or other record, without the prior agreement and written permission of Rossell Techsys.

SUPPLIER QUALITY ASSURANCE MANUAL

This document is the property of Rossell Techsys and has been established to communicate the Quality Management System Requirements and expectations of Rossell Techsys to external providers of products, processes and related services (Suppliers).

This document is subject to changes and revisions by Rossell Techsys and is a binding document between Rossell Techsys and suppliers. In case of any changes, the updated revision shall be communicated to the supplier.

The contents documented in this SQAM have considered inputs and principles from AS9100, IAQG Guidelines, and unique requirements of Rossell Techsys and industry best practices in support of mutual supplier beneficial business relationship.

> ***With your commitment we will succeed in our mission to deliver the best products***

Supplier feedback

Feedback concerning this document is welcomed and encouraged. Please send an e-mail to:

supplier.quality@rosselltechsys.com

Contents

Introduction

ROSSELL TECHSYS MISSION

To continuously create capability and capacity, develop a high-performance work culture, nurture best operational practices and act ethically in all transactions.

> *"Drive a "Right first time, every time" culture.*
> *Drive a culture of "Continuous Improvement".*

1. Purpose

Rossell Techsys has always been characterized by its reputation of selling the safest and highest quality products in the Aerospace Industry. We are relentlessly working to improve our processes, products and competences to be the best in class in the industry. We expect our suppliers to support us in maintaining our reputation by taking pro-active approach to deliver premium products and services in terms of Quality, Delivery, Cost, and Sustainability and be capable of delivering exceptional performance for our customers. The purpose of this Supplier Quality Manual is to communicate and elaborate on the expectations and requirements to all potential and existing external suppliers to Rossell Techsys with a focus on quality and product reliability.

Our goal is to work with our suppliers to develop a strong, long-term, structured and mutually beneficial relationship where we secure zero defects and zero delays.

Uncontrolled when printed

WE EXPECT OUR SUPPLIERS TO BE COMMITTED TO

- Delivering desired quality parts or products/services
- On time delivery
- Rigorous adherence to approved processes and requirements
- Robust risk management and focus on continual improvement
- Timely response to requests

This Supplier Quality Manual delivers an overview of those expectations and requirements, formal guidelines and practices expected from our valued suppliers. It does not alter or replace any existing contracts, purchase order, drawings or specifications.

It is expected that suppliers flow these requirements down to their sub-suppliers to ensure that quality is consistent throughout the entire supply chain.

2. Scope

This manual applies to all suppliers, who provide products and related services to Rossell Techsys. In order to ensure smooth functioning of quality assurance system and its continuing suitability and effectiveness, the following shall be ensured by your organisation.

- Formulate a quality policy for the organisation defining objectives for quality and its commitment to quality
- It should be understood, implemented and maintained at all levels of your organisation

Uncontrolled when printed

2.1 REVISION/ DOCUMENTS CONTROL

The supplier should establish, maintain and document procedures to control all Quality Management System documentation and all data generated under the Quality Management System. There should be a control system to incorporate changes on purchase orders, component drawings, specifications, Quality plans and all other relevant documents in line to the latest revision

Electronic version of this document and required forms are available on the Rossell Techsys portal.

It is the supplier's responsibility to obtain these documents and to ensure that current versions are used. Documents referenced in this manual may be applicable to the extent specified by Rossell Techsys in Applicability Matrix, referenced in section 13.

Technical data packages may include ITAR-controlled drawings, which are subject to export control laws. Adequate controls have to be maintained to handle ITAR controlled documents.

Uncontrolled when printed

3. References

Standard : SCMH Section 4.3.2	Description : Supplier Quality Management Basics (SQMB)
AS9100	Quality Management Systems – Requirements for Aviation, Space and Defense organizations.
ISO 31000	Risk Management
AS9120	Quality Management Systems – Aerospace Requirements for Stockist Distributors AS9120
AS9102	Aerospace First Article Inspection Requirement
ISO 9001	Quality Management Systems – Requirements.
NADCAP	National Aerospace and Defense Contractors Accreditation Program
ISO/IEC 17025	General requirements for the competence of testing and calibration laboratories
AS9145	Requirements for Advanced Product Quality Planning and Production Part Approval Process
AS5553	Counterfeit Electronic Parts; Avoidance Detection, Mitigation and Disposition
AS9146	Foreign Object Damage (FOD) Prevention Program Requirements for Aviation, Space, and Defense Organizations

3.1 GLOSSARY OF TERMS

DEFINITIONS

Design Responsible supplier	An entity responsible for design of parts and its process capabilities
Original Component Manufacturer	An entity that manufactures the part in accordance to international or customer specifications.
Build to Print Supplier	An entity that manufactures the part in accordance with customer drawings.
Distributor	An entity Responsible, for purchase, storage, splitting of lots and sale of products without affecting product conformance, also called as Supplier or external service providers.
Sub-Tier Suppliers	An entity that provides products or services to a Supplier.
Rework	Additional operations that are not part of the basic production process flow.
Repair	Alternative manufacturing techniques, methods, materials, or processes which may bring product into full compliance

Uncontrolled when printed

ACRONYMS

Acronym	Expansion
APQP	Advance Product Quality Planning
ASL	Approved Supplier List
BTP	Build to Print
BTS	Build to Specification
CDR	Critical Design Review
COC	Certificate of Conformance
COTS	Commercial off the Shelf
CP / CPK	Process Capability Index
DFMEA	Design Failure Modes and Effects Analysis
DLA	Defense Logistics Agency
DTS	Dock to Stock
ECN	Engineering Change Notice
EDI	Electronic Data Interchange
FAI	First Article Inspection
FAIR	First Article Inspection Report
FAR	Failure Analysis Report
FIFO	First-In, First-Out
ITAR	International Traffic in Arms Regulations
KC	Key Characteristics
LOA	Letter of Authorization
MTBF	Mean Time Between Failures
MTTR	Mean time to repair
NABL	National Accreditation Board for Testing and Calibration Laboratories
NADCAP	National Aerospace and Defense Contractors Accreditation Program
NC	Non conformance
NCR	Non-Conformance Report

SUPPLIER QUALITY ASSURANCE MANUAL

Acronym	Expansion
NIST	National Institute of Standards and Technology
NOE	Notice of Escapement
OASIS	Online Aerospace Supplier Information System
OTD	On-Time Delivery
PDR	Preliminary Design Review
PFMEA	Process Failure Modes and Effects Analysis
PO	Purchase Order
PPAP	Production Part Approval process
PPM	Parts per million
QMS	Quality Management System
QPD	Qualified products database
QPL	Qualified products list
RCCA	Root Cause and Corrective Action
RMA	Return Merchandise Authorization
SCAR	Supplier Corrective Action Request
SIR	Supplier Information Request
SMRR	Supplier Material Review Report
SPC	Statistical process control
SPR	Significant Production Run
SQA	Supplier Quality Assurance
SQAM	Supplier Quality Assurance Manual
SSOW	Supplier Statement of Work
TDP	Technical Data package
TPM	Total Productive Maintenance
8D	Eight Disciplines

4. Becoming a Rossell Techsys Supplier

4.1 QUALITY APPROVED SUPPLIER

The supplier is responsible to establish, implement, maintain and improve QMS requirements as per Rossell Techsys requirements. This includes sub-tier approved by accredited body or by Rossell Techsys or through customers in special instances.

Supplier Classification: Rossell Techsys suppliers are classified as shown below.

1. Build to Print suppliers
2. Design Responsible suppliers
3. Original Component Manufacturers
4. Special process suppliers
5. Distributors/ Commercial off the shelf suppliers
6. Raw material suppliers
7. Calibration / Lab Service

Note: For requirements applicability, refer applicability matrix in section 13.

4.2 ASSESSMENT

4.2.1 INITIAL ASSESSMENT

Supplier registration form and Quality self-assessment form shall be sent to the identified new supplier for updating the credentials. The supplier shall provide a copy of their valid, third party QMS certificate and complete a self-assessment followed for business capabilities.

Documentation Requirements

Rossell Techsys can request a copy of the Supplier's procedures and relevant supporting documents to determine the Supplier's QMS meets Rossell Techsys requirements. Details may include, but not limited to;

- Customer Data Base
- Capabilities and Capacity
- Risk Management
- Financial Stability
- Quality Management
- Delivery
- Continual improvement objectives and measurements
- Sub-tier process control

Note: For more details on assessment, suppliers can get in touch with respective Rossell Techsys SQA/Buyer

4.2.2 QMS AUDIT

Suppliers shall maintain a valid QMS certification. Based on the criticality, risk and supplier's performance, Rossell Techsys or its customer may validate the QMS of the supplier. Rossell Techsys and supplier shall discuss the method and frequency for QMS audits.

If the audit is planned through third party certification body, then supplier shall notify any major findings to Rossell Techsys. Corrective action process shall be followed to close the audit findings.

4.2.3 ON-SITE MANUFACTURING PROCESS AND CAPABILITY ASSESSMENT

Rossell Techsys or its customers may select to conduct a supplier manufacturing on-site assessment. This assessment may include but not limited to

- Business and Manufacturing Operations: Financial resources, production capacity, risk mitigation and other business resources needed to fulfill volume production needs and continuity of supply.
- Product and process capability: Including assessment of production and inspection equipment, facilities, engineering resources and effectively functioning QMS, etc.
- Continual Improvement Initiative: Culture, methods and skills present to actively pursue continual improvement.
- Sub-Tier Supplier Control: Management processes to ensure that products or services out-sourced from sub-tier sources conform to all applicable requirements.

4.2.4 SPECIAL PROCESS ASSESSMENT

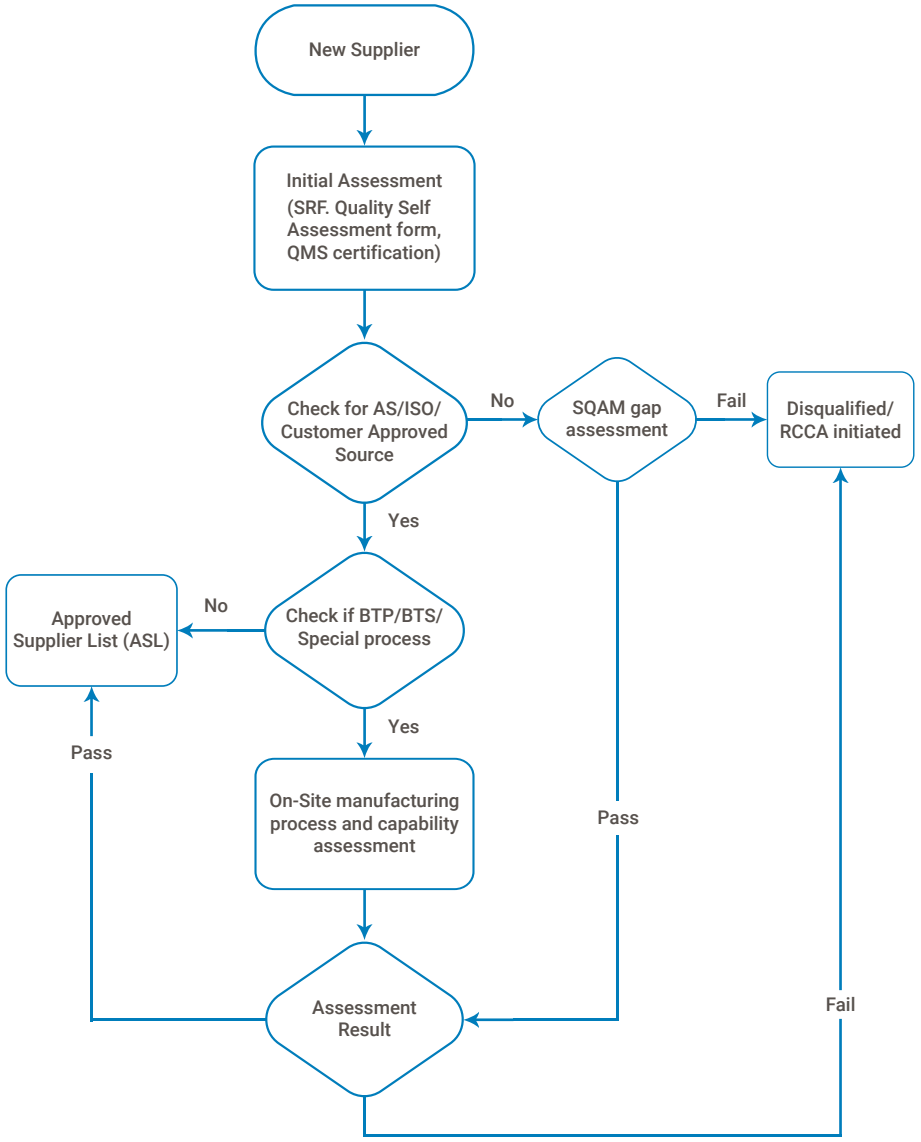
- Rossell Techsys may require an existing or new supplier (i.e. suppliers and/or sub-suppliers) to have Special Process Assessment for their process, prior to supplier selection during sourcing process. This requirement is also applicable for new process at an existing supplier.
- All suppliers performing any defined special processes shall be certified to NADCAP/ Customer approved source.
- For special processes not certified under NADCAP or if not contractually required to use NADCAP, Rossell Techsys or a third party will perform a process audit to show compliance to the requirements. The supplier selection shall be based on their ability to comply with the requirements of the standard.

- In addition, the supplier shall evaluate and select special process sub-suppliers who are certified to NADCAP or comply with the requirements of NADCAP. The results of the supplier's sub-tier selection process shall be documented and maintained.
- The supplier shall maintain an active approval certificate (including their sub-suppliers), which shall be made available to Rossell Techsys or its customers upon request.

Note: List of special processes includes

1. *Chemical Processing*
2. *Coating*
3. *Heat Treating*
4. *Non-Destructive testing*
5. *Welding*

Note: For more details on assessment, suppliers can get in touch with respective Rossell Techsys SQA/Buyer



Supplier Selection Process

4.2.5 RISK & DAMAGE CONTROL MANAGEMENT

Any risk & damage attributed to a product or process that can be expressed in physical or financial terms which may or may not degrade the product's required safety and/or performance characteristics shall be managed and controlled.

Supplier shall establish, document and maintain a program to control and eliminate risk/damage during manufacturing, assembly, test, inspection, packaging and shipping operations. Where applicable, the supplier's risk control program shall include controls to prevent risk/damage at the supplier's sub-tier sources also.

The following basic elements shall be included in the risk/damage control program of suppliers manufacturing process, but not limited to.

1. Risk/damage prevention training
2. Manufacturing planning consideration for risk/damage prevention
    i. Work sequencing
    ii. Cleanliness of work area
    iii. Control of tools, personal items, fasteners, scrap, etc.
3. Counterfeit or unapproved parts delivered
4. Catastrophic – endangers life and/or the entire end product
5. System or Product Failure – results in the loss of functionality
6. Protection from risk/damage during handling, packaging and shipping
7. Periodic (at least annually) evaluation of the risk/damage control program for effectiveness
8. GIDEP/ NOE product advisory risks

Supplier shall maintain risk/damage control related records and this data shall be available to Rossell Techsys upon request.

4.2.6 MATURITY ASSESSMENT - SUPPLIER SOURCING SELECTION AND APPROVAL

Once an assessment on supplier's product, process and risk mitigation is complete, Rossell Techsys Buyer and Supplier Quality will identify the targeted maturity level for each assessment element and track development with defined target.

Rossell Techsys along with its suppliers will establish a project roadmap towards identified opportunities for improvement based on the assessment results.

5 MATURITY LEVEL	OPTIMIZED LEVEL	Stable and Flexible organization which focuses on continual improvement and benchmarks itself to new opportunities and changes	HIGH MATURITY
4 MATURITY LEVEL	QUALITATIVE LEVEL	Controlled and measured organization which focuses on performance improvement that are data driven and predicates and mitigates risk at all stages of process	DEVELOPING MATURITY
3 MATURITY LEVEL	DEFINED LEVEL	Proactive organization which focuses and follows standards and guidance across all projects and processes	
2 MATURITY LEVEL	MANAGEABLE LEVEL	Organization which manages on all levels of projects and process and its controls	
1 MATURITY LEVEL	INITIAL LEVEL	Organization is reactive, gets work done as per requirement (often delayed)	LOW MATURITY

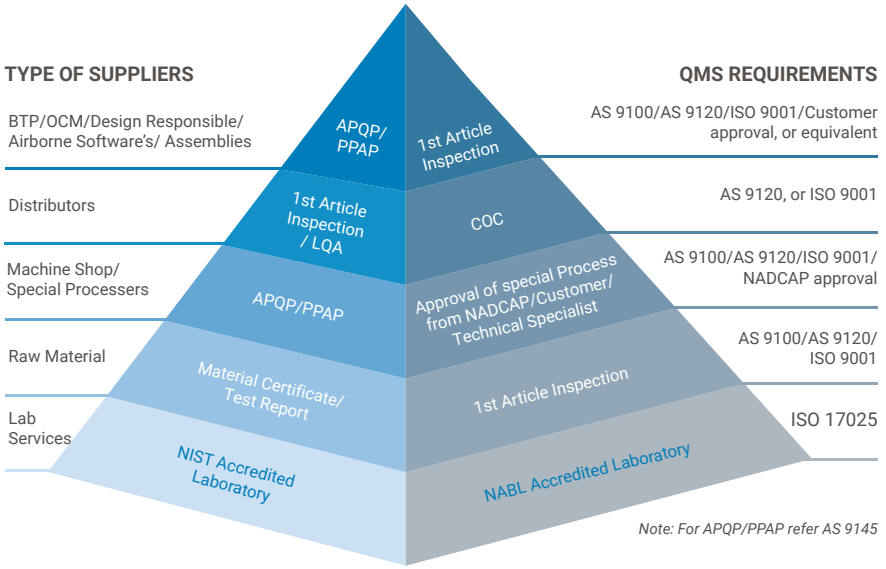
INCREASING MATURITY

Note: For more details on assessment, suppliers can get in touch with respective Rossell Techsys SQA/Buyer.

ROSSELL TECHSYS SOURCING DECISION IS BASED ON ASSESSMENT RESULTS AND MATURITY LEVELS 0F THE SUPPLIERS

5. Flow Down Requirements

The initial step in any product cycle for managing the quality performance of a supplier is to establish a process for identifying, documenting and flowing down quality requirements and expectations. Appropriate quality requirements must be flowed down to the lowest level of the supply chain in order to ensure all requirements are met for the product's end user, the customer. Appropriate requirements are determined based on product type and design, customer requirements, statutory and regulatory compliance.



SUPPLIERS SHALL REFER PURCHASE ORDER FOR ROSSELL TECHSYS AND ITS CUSTOMER FLOW DOWN CLAUSES.

6. Quality Management System

6.1 GENERAL REQUIREMENTS

Supplier shall maintain a QMS certified by a third-party accreditation body to one or more of the following standards, as applicable:

- AS 9100, AS 9120, ISO 9001: For BTP, design responsible, OCM and distributors
- NADCAP: For special process suppliers
- ISO 17025: For NIST and NABL accredited laboratory

Note: *-Supplier shall provide access to OASIS /NADCAP databases.

****-Rossell Techsys reserves the right to provide inputs on supplier performance to certifying agency.***

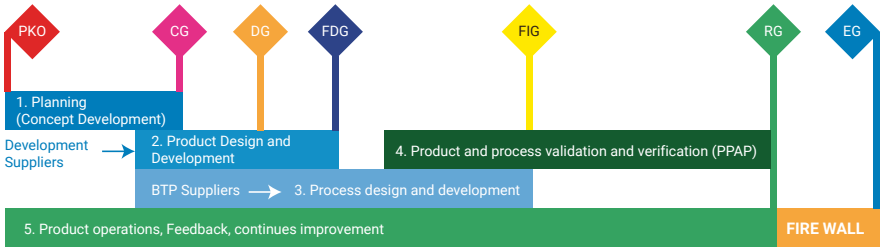
7. Advanced Product Quality Planning (AS 9145)

Rossell Techsys requires all its suppliers to have an effective project planning process capable of supporting all its projects. Rossell Techsys has adopted AS 9145 APQP process and recommends this planning process as a standard method for supplier's new product development process.

Suppliers are expected to develop and use a detailed APQP that demonstrates new product development process, fulfils Rossell Techsys requirement, and demand rate.

The supplier shall perform FAI as per AS9102.

5 PHASES OF ADVANCE PRODUCT QUALITY PLANNING



PHASE 1
- Team Formation
- Product design requirements
- Key Characteristics (KCs)
- Bill of Material (BOM)
- Preliminary Sourcing Plan & Risk
- Project plan & targets

PHASE 2
- Design risk analysis & records
- DFMA & Feasibility assessment
- Special Requirements
- Source plan
- Packaging specification
- Development product build plan
- Design verification and validation plans

PHASE 3
- Floor plan layout
- Production preparation plan
- Operator staffing and training
- PFD/PFMEA/CP
- Preliminary capacity
- Work station documentation
- Supply Chain Management
- Material handling, packaging
- Production Readiness Review

PHASE 4
- Product from production process run(s)
- MSA
- Initial process capability studies
- Control plan
- Capacity verification Product validation results
- Layout inspection report

PHASE 5
- Quality indices
- Key Performance Indicators
- Project targets updates
- On-time Delivery
- Capacity improvement plan
- Continuous improvement
- Lessons learned
- Updated design risk analysis, PFMEA & CP

PKO: Project Kick Off | **CG:** Concept Gate | **DG:** Design Gate | **FDG:** Final development Gate | **FIG:** Final Industrialization Gate
RG: Release Gate | **EG:** End Gate

FIRE WALL: Is an additional check of critical parameters after final inspection before dispatch and for limited period or quantity as per Rossell Techsys as applicable.

AS PER THE APPLICABILITY MATRIX, IT IS THE SUPPLIER'S RESPONSIBILITY TO PERFORM & DRIVE APQP FOR COMPONENTS AND PROVIDE DETAILS TO ROSSELL TECHSYS.

FOR SELECTED COMPONENTS, ROSSELL TECHSYS WILL TRACK APQP IN DETAIL.

7.1 PRODUCTION PART APPROVAL PROCESS (AS 9145)

Production Part Approval Process (PPAP) demonstrates that a manufacturing process used to produce parts for Rossell Techsys is fully developed, thoroughly tested, and capable of serial production and parts conform to the technical specifications. Rossell Techsys follows AS 9145 PPAP requirements. The PPAP level of submission shall be agreed between Rossell Techsys and supplier during project kick off.

Fundamentals of PPAP

- Parts coming from significant production run (SPR)
- Produced with serial tool and serial process
- Measured and tested according to drawings and clauses
- A separate PPAP Approval shall be completed for each Rossell Techsys part number
- PPAP Approval Form has to be signed by the authorized supplier representative
- All PPAP documentation shall be maintained at the supplier's facility for the lifetime of the part

PPAP APPROVAL HAS TO BE SIGNED BY THE SUPPLIER AND ROSSELL TECHSYS.

There are four (4) Submission Levels

LEVEL 1 – PPAP Approval form only (with Appearance approval report if required)

LEVEL 2 – PPAP Approval form, product samples, limited data

LEVEL 3 – PPAP Approval form, product samples, complete data submitted

LEVEL 4 – PPAP Approval form, product samples, complete data reviewed at suppliers manufacturing location

PPAP Assessment Retention and Submission						
		APQP	Level 1	Level 2	Level 3	Level 4
1	Design Record	Phase 2	R	S	S	R
2	Design Risk Analysis	Phase 2	R	S	S	R
3	Process Flow Diagrams	Phase 3	R	R	S	R
4	Process FMEA	Phase 3	R	R	S	*
5	Control Plan	Phase 3	R	R	S	*
6	Measurement System Analysis Studies	Phase 4	S	S	S	S
7	Dimensional Results / FAIR	Phase 4	R	R	S	R
8	Initial Process Studies	Phase 4	R	S	S	S
9	Packaging, Preservation and Labeling Approvals	Phase 3	R	R	*	*
10	Customer Specific requirements	Phase 4	R	R	S	*
11	PPAP Approval form Sign Off	Phase 4	S	S	S	S

Note: R: Retention | S: Submission | *: Retention / Submission as per Rossell Techsys requirement

SUPPLIERS ARE REQUIRED TO SUBMIT A LEVEL 3 PPAP PACKAGE FOR ALL COMPONENTS UNLESS OTHERWISE AGREED

PPAP SUBMISSION CAN ONLY BE APPROVED ON LATEST REVISION OF DRAWING.

SUPPLIER IS RESPONSIBLE TO ENSURE THAT THE PPAP SUBMITTED IS IN ACCORDANCE WITH AS9145 DOCUMENT AND CUSTOMER REQUIREMENTS. THE PPAP MUST BE FULLY APPROVED OR INTERIM APPROVED WITH THE APPROVED DEVIATION(S) BY SUPPLIER QUALITY, BEFORE PRODUCTION

8. Purchasing Requirements

8.1 SOURCE CONTROLLED PRODUCT/CUSTOMER APPROVED ITEM

Drawings identified as “Source Controlled” / “Customer approved” contain a list of approved sources(s) of supply by the end customer. The supplier is required to purchase these items only from an approved source.

8.2 QUALIFIED PRODUCTS LIST

Any items supplied against the purchase order applicable to a Qualified Products List/Database as defined by the specification(s), such as military approved connectors, cables, chemicals etc., must be manufactured by approved source and documented to support traceability and should be part of shipping information.

Search authorized components distributor of electronic components here *http://www.eciaauthorized.com*

For electrical component specifications and QPLs *https://www.navair.navy.mil/qpl*

For qualification data of several specifications *https://landandmaritimeapps.dla.mil/programs/psearch/*

The QPD contains qualification information regarding products and manufacturers

https://qpldocs.dla.mil

8.3 CERTIFICATE OF CONFORMANCE

The Supplier is mandated by the purchase order to provide a Certificate of Conformance. The certificate shall contain the following information:

- Manufacturer’s/supplier’s name and address
- Part number and latest revision
- A statement that the product/service meets all the requirements of the order and its technical data package at the prescribed revision level
- Exceptions, including waivers (as applicable)
- Signature, printed name, and title of signing authority (electronic or digital signatures are acceptable)

In addition to the above, Supplier shall provide other documents as specified in the purchase order such as test report, letter of authorization etc.

In case of supplier distributing products to older revision, Supplier shall intimate Rossell Techsys through SIR and take prior approval before dispatch.

8.4 ORDER OF PRECEDENCE

In the event of a conflict between the requirements contained within this purchasing agreement, the following order of precedence shall apply:

- The Purchase Order (PO)
- Supplier Statement of Work (SSOW)
- Technical Data Package (TDP)
- Supplier Quality Assurance Manual (SQAM)
- Documents referenced in the PO, TDP, SSOW and SQAM

9. Packaging and shipping

9.1 HAZARDOUS MATERIAL CONTROL

Any product identified as hazardous material in the safety datasheet by the manufacturer, shall be clearly marked with the following, as a minimum:

- Product name
- Manufacturer's name
- Manufacturer's part number
- Manufacturer's batch number or lot number
- Date of manufacture and expiration date, per manufacturer's specification

A copy of the Material Safety Data Sheet (MSDS) shall accompany each shipment.

9.2 PACKAGING FOR ELECTROSTATIC DISCHARGE (ESD) SENSITIVE ITEMS

Products identified as ESD sensitive in the datasheet by the manufacturer for all Class 1, Class 2 and Class 3 parts, assemblies, and equipment, are to be packed as defined by MIL-STD external shipping packaging requirements. These shall be identified with the ESD symbol. All other components with solderable leads and which are considered non-ESD sensitive per MIL-STD such as bare printed wiring boards are to be packed in heat-sealed non-static-generating poly bags that meet the MIL spec requirements.

Uncontrolled when printed

10. Control of Purchased Product, Processes and Services

10.1 RECEIVING INSPECTION

The process for inspection and acceptance of purchased product by Rossell Techsys is to ensure compliance with all requirements of applicable drawings, specifications, purchase orders and approved quality standards. It also ensures identification and traceability.

Supplier shall also demonstrate similar control for the products or services received from external providers.

Supplier shall have a broad framework of requirements as shown below.

Uncontrolled when printed

	Accomplishments	Intent
	Responsible & Trained person and authority to perform receiving and inspection activities	▲ To review all incoming materials are acceptable for use and sign the inspection report ▲ To authorize change or update Receiving inspection requirements based on drawing changes, NC and improvements
	Quality Plan & Technical data – A procedure should be in place for receiving inspection	▲ To ensure that multiple documented requirements are recorded in same check list
	Measurement/Testing and instruments are in place	▲ To ensure the conformance to the requirements ▲ To ensure measurement devices, test equipment, and gauges are available at desired location ▲ To ensure all devices are compatible and calibrated
	Measure, evaluate and record the result and clear the material to store/NC area accordingly	▲ To evaluate part for approval, segregation and suspected unapproved Parts identification and labelling
	Forward the records to ▲ Internal departments ▲ To supplier and buyer in case of an NC	▲ For further process inside the plant ▲ For 8D, corrective and permanent action
	Share the documents to customer As part of final Inspection report or as requested by customer	▲ In case supplier reports are part of Final approval, e.g. Salt spray test, Hardness, 3rd party test certificate reports etc.

The acceptance of product through receiving inspection at Rossell Techsys does not relieve the supplier from sending a non-compliant product.

10.2 DOCK TO STOCK (DTS)

DTS is a process in which the incoming material is directly delivered to stock location without inspection. DTS approval is given on a part-to-part basis by Rossell Techsys Quality.

Rossell Techsys shall identify the parts for Dock to Stock based on,

- Rejection History
- Corrective Action Reports
- Any over-due corrective action

The applicable part numbers identified for DTS will be communicated to suppliers, who shall ensure part conformity prior to dispatch. For any parts rejected at any instance, supplier will lose the DTS status and the parts will be put back into the regular inspection mode.

In the event of supply of non-conforming parts, the suppliers shall drive subsequent corrective actions and submit SCAR to Rossell Techsys.

10.3 SOURCE INSPECTION

Source inspection is a process in which Rossell Techsys representative performs the inspection at the supplier's location. The inspection will be carried out on the finished product as well as at each process stage. These parts, after receipt at Rossell Techsys, will be directly delivered to the stock location.

The flow of Source Inspection of finished product is as shown below.

Rossell Techsys shall identify the parts for Source Inspection based on below factors, but not limited to -

- Key components: identified during Sourcing and APQP process
- Critical inspection process where joint inspection is a must
- Special process inspection
- Measurement system or instrument are only available at supplier location
- PPAP lot
- ECN or process changes
- Repeated quality issues found at customer end

In the event of any non-conforming parts/processes observed during source inspection, the suppliers shall drive subsequent corrective actions and submit SCAR to Rossell Techsys.

10.4 SOURCE DELEGATION

Source delegation is a process in which suppliers are empowered to perform inspection as per requirements of Rossell Techsys. Delegated inspection authority is being provided to a supplier or a supplier representative based on, supplier performance rating (Gold).

The applicable part numbers identified for source delegation will be communicated to suppliers.

In the event of supply of non-conforming parts, the suppliers shall drive subsequent corrective actions and SCAR has to be submitted to Rossell Techsys.

Maintenance and revoking of delegation authority;

- Line stoppage due to supplier product or quality issue shall be monitored for performance review
- Suppliers with authority for inspection will be subject to periodic product / process audits to monitor compliance with requirements
- Suppliers exhibiting deteriorating quality performance may result in revoking of delegated inspection authority status or being placed on probation, or disapproval

10.4.1 SOURCE INSPECTION DELEGATION AUTHORITY TO DESIGNATED SUPPLIER REPRESENTATIVES

Source inspection delegation authority is delegated to a representative of the supplier. The representatives are selected based on experience in industry, knowledge of product and process and understanding on Quality Management systems.

Note: In case of Delegation of Authority to Designated Supplier representatives, Rossell Techsys will provide unique stamp that can be recognized during part receiving and identification.

Rossell Techsys will define the disqualification/requalification criteria for the cases when the Supplier representatives fail to meet the defined performance criteria.

10.5 NON-CONFORMING MATERIAL

The Supplier shall have adequate controls in place to identify, segregate and disposition of non-conforming parts.

If the Supplier identifies a non-conforming part which has an impact on the delivery schedule, disposition can be sought from Rossell Techsys, prior to shipment. No non-conforming product shall be shipped without written authorization from Rossell Techsys through SMRR.

If a non-conforming part is identified at Rossell Techsys, the supplier will be informed of the non-conformance through an NCR. Appropriate disposition (scrap, RMA) will be taken on the non-conforming part. These dispositions are defined as follows:

- Scrap: In the event of nonconformance deemed as valid rejection with no opportunity to rework, repair or use as is. Supplier shall authorize Rossell Techsys to scrap the non conforming parts in-house with credit note
- RMA: Return Material Authorization, the non-conforming parts will be returned to the supplier or any other dispositions proposed by Rossell Techsys

Supplier shall also provide complete traceability information for all known or suspect nonconforming products shipped.

10.6 CONTAINMENT PROCESS

Rossell Techsys requires the supplier to contain the suspect product and perform a redundant 100% inspection. This process is done either by the supplier or by a third-party inspection company.

Upon notification, Supplier shall initiate containment action with the agreed dates for all suspect products. Containment action plan shall include material at supplier/ in-transit/ at Rossell Techsys as applicable, within 48 hrs.

10.7 CORRECTIVE ACTION

Supplier shall identify root cause and implement corrective action for non-conformances observed in the product, process, and any recurring issues. The following actions are to be performed to resolve issues.

- Identify the root cause(s) of non-conformance
- Verify the root cause corrective actions that address the fundamental breakdown or the failure of a process
- Implement corrective actions to prevent recurrence.
- Flow down the corrective action requirements to subcontractors / sub-tiers (as applicable).
- Review and update the Process Failure Mode and Effects Analysis (PFMEA) and Control Plan
- Maintain records of corrective actions and implement them horizontally as applicable

Typical corrective action response time and method

Rossell Techsys shall verify implementation and effectiveness of the corrective action through desk audit or evaluation visit to the source or through evaluation of further lots received, as applicable. In case corrective action requires any change in process/part/material, supplier shall initiate changes in consultation with Rossell Techsys through SIR. Rossell has the right to approach and communicate the delinquent CA requests to the third party auditors of External providers.

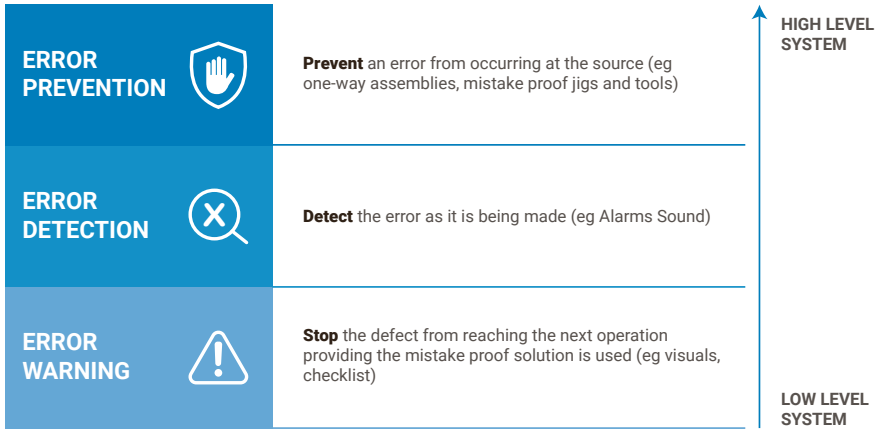
10.8 MISTAKE PROOFING

Supplier should use mistake proofing techniques or devices to prevent product/process failures.

Mistake proof may be implemented -

- Where repetitive quality issues/significant customer escapes occur
- Where critical tasks prone to error occur
- Where the nature of work is manual

LEVELS OF MISTAKE PROOFING



Levels of Mistake Proofing

Uncontrolled when printed

11. Supplier Performance Monitoring

11.1 SUPPLIER PERFORMANCE METRICS

Rossell Techsys measures supplier performance based on Quality and delivery. The key indicators for quality and purchase are as listed below.

Quality

- Supplier Quality Rating
- Number of escapes
- SCAR overdue

Purchase

- Delivery
- RFQ response time
- Sales & Technical support
- Pricing competitiveness

Rossell Techsys uses Supplier Rating to measure the Supplier Performance

	Quality Performance		Delivery Performance
	Product Quality	Documentation Quality	On Time Delivery
Weightage	95	5	OTD = Number of parts delivered on time / Number of parts delivered
Rating	Quality		Delivery
Gold	100%		100%
Silver	99.80% - 99.99%		98% - 99.99%
Bronze	99.55% - 99.79%		96% - 97.99%
Yellow	98% - 99.54%		90% - 95.99%
Red	<98%		<98%

SUPPLIER RATING WILL BE COMMUNICATED TO SUPPLIERS ON A MONTHLY BASIS.

Uncontrolled when printed

11.2 SUPPLIER PERFORMANCE IMPROVEMENT

Suppliers shall initiate the following activities to demonstrate performance improvement

- Action plan and timely closure of second-party audit findings
- Action plan implementation and control reoccurrence of Quality and / or Delivery nonconformance
- Use of continuous improvement tools (such as Kaizen, Six Sigma, Quality Tools etc.) to improve process and to reduce wastes
- Implementations of LEAN and TPM systems, as applicable
- Sub-supplier monitoring and performance improvement

11.3 SUPPLIER CONTINUAL IMPROVEMENT

Rossell Techsys expects its suppliers to identify, initiate and implement potential areas for continual improvement for meeting the goal of Quality, Consistency, Continual Improvement & Cost reduction.

Suppliers shall strive to improve processes, systems and activities through continual improvements such as,

- Zero defect culture
- 8D methodology
- SPC
- Lean initiatives

Uncontrolled when printed

12. Supplier Surveillance

12.1 PRODUCT AND PROCESS AUDIT

Rossell Techsys shall perform product and process audit at supplier site to have better control of product conformity and to ensure process effectiveness.

12.1.1 PRODUCT AUDIT

Rossell Techsys shall perform a product audit under the following circumstances at the manufacturing site/ location

- FAI / PPAP batch
- Special process
- Change in manufacturing location if any

Rossell Techsys product audits shall take place during manufacturing before the product reaches Rossell Techsys.

12.1.2 MANUFACTURING PROCESS AUDITS

Rossell Techsys shall perform a process audit, under the following circumstances

- New Supplier Selection, New Development, New Process
- FAI / PPAP batch
- Repetitive issue
- Changes in process
- Supplier performance improvement

Note: As a part of suppliers continual improvement activity, suppliers shall perform process and product audits on a regular basis in line with organization QMS requirement

Uncontrolled when printed

Process audits are critical to quality metrics that include:

- Standardizing processes - to ensure compliance with specific requirements such as standard work, process controls etc.
- Tracking implementation of mistake-proof techniques
- Monitoring key metrics for evaluating overall process performance
- Assessing effectiveness of process controls such as procedures, instructions and specifications
- Ensuring Traceability by validating the product, process and documentation all the way from the raw material till finished product

Note: A lapse in production for two years shall require an update for any characteristics that may be impacted by the inactivity. This lapse period is counted from the completion of last production operation to the actual restart of production.

12.2 ACTION PLAN FOR AUDITS

If a product or process audit does not meet standard requirements or specifications, the audit findings or non-conformance shall be followed by appropriate root cause analysis method and use of quality tools to prevent reoccurrence.

Action plan shall be demonstrated by -

- Planning and executing audits regularly and effectively within the suppliers QMS and sub-tiers
- Perform root cause corrective and preventive actions and monitor effectiveness

12.3 KEY CHARACTERISTICS

Rossell Techsys encourages utilization of statistical methods / SPC to monitor and control the key characteristics. Statistical data must be comprehensive enough to adequately document quality conformance.

If SPC is required as mentioned in the drawing, product specification, during APQP reviews or by process, suppliers shall provide evidence of statistical controls and shall identify the controls in PFMEA and Control Plan.

SPC is required for any key characteristics determined for the product. Supplier shall demonstrate conformity of key characteristics requirements designated by Rossell Techsys through:

- Documentation
- Appropriate control methods
- Control of other product and processes

If supplier does not use SPC, 100% inspection of key characteristic(s) shall be implemented and the results to be sent whenever required.

12.4 RISK ANALYSIS

Supplier shall have a frequency-based risk analysis surveillance method. Supplier shall develop and implement mitigation plans for the risk items identified in the below chart. Documented evidence of measures taken on risks shall be shared with Rossell Techsys when requested. The supplier may use ISO 31000 as a guideline document for risk assessment. The supplier may also provide business continuity plan upon request.

RISK ANALYSIS IS USED TO DETERMINE RISKS EARLY IN A PROJECT AND ACTIONS ARE TAKEN TO MINIMIZE OR PREVENT THEM FROM BECOMING CHRONIC PROBLEM

12.5 PRODUCTION RATE READINESS REVIEW

Suppliers shall follow Production Rate Readiness Review to demonstrate that manufacturing system is capable to identify and mitigate risks in design or manufacturing process and is ready to meet the desired production rate and any changes, as requested by Rossell Techsys.

A successful review system shall determine that the system requirements are fully met in the final manufacturing process and production capability meets full production rate and ramp-up, as required by Rossell Techsys.

Production rate readiness review shall include the following -

- Production planning records, daily plan vs actuals
- Process targets, rejection targets, productivity targets
- Machine and equipment availability and capacity
- Scrap, rejection levels, rework levels
- Tool change over and set up approval times
- Capability study and CP/CPK records
- Failure rate, Downtime for equipment's and machines

12.6 NOTIFICATION RESPONSIBILITIES

The Supplier shall notify in writing in the event that any one of the following occurs but not limited to:

- Non-conformance and escapement
- Withholding or withdrawal of QMS certificate
- Product manufactured and shipped using out-of-calibration due date instruments/devices
- Change/relocation of supplier's facility
- Change in quality systems and operations management
- Change to Quality Management System registration, including issuance of a new registration certificate
- Any change in raw material, manufacturing process and equipment location
- GIDEP or stop shipment notification
- Obsolescence notification

Note : Notify if changes require re-qualification / revalidation by the approval authority.

Failure to notify Rossell Techsys in a timely manner may result in the following:

- On-site inspection by Rossell Techsys or their representative at the Supplier's expense
- Audit of the Supplier's facility at the Supplier's expense
- Supplier shall arrange to perform sorting of NC parts or bear the cost if performed by Rossell Techsys

12.6.1 GIDEP PROBLEM ADVISORY, AND STOP SHIP NOTIFICATION

Supplier shall immediately notify Rossell Techsys upon receipt of any Government-Industry Data Exchange Program (GIDEP) alert related to product, and shall provide Rossell Techsys a list of all affected products by order, part number, invoice number, serial number, or any other identifying number as applicable. For GIDEP alerts caused in whole or in part by the products, Supplier shall immediately replace all affected products at its sole expense including any installation and removal costs for the products so affected and reimburse Rossell Techsys for any damages and commercially reasonable expenses incurred by Rossell Techsys.

In addition to the above statement, suppliers are expected to follow the below steps -

- Supplier shall initiate containment action and inform Rossell Techsys within 48hrs
- Provide RCCA response with timelines for completion within 15 days
- Time lines for requalification/resumption of production, start of supply of conforming parts
- Supplier/Manufacturer shall provide all qualification reports along with shipment of first batch
- Supplier shall submit product acceptance report by DLA / Customer/any applicable certifying body for the affected part numbers before shipment

13. Applicability Matrix

Code	Type of supplier
BTP	Build to Print
DR	Design Responsible
OCM	Original component manufacturer
DTR	Distributor
SP	Special Processers
RM	Raw Material
LS	Calibration / LAB Services

Symbol	Applicability
X	Applicable
----	Not Applicable
*	As per Rossell Techsys Requirement

Clause	BTP	DR	OCM	DTR	SP	RM	LS
4.2.1	X	X	X	X	X	X	X
4.2.2	*	----	----	*	*	----	----
4.2.3	X	----	----	----	*	----	----
4.2.4	*	----	----	----	X	----	----
4.2.5	X	----	X	X	----	----	----
4.2.6	X	*	*	X	X	----	*
5	X	X	X	X	X	X	X
6.1	X	X	X	X	X	X	X
7	X	----	----	----	----	----	----
7.1	X	----	----	----	----	----	----
8.1	X	X	X	X	X	X	----
8.2	X	X	X	X	X	X	----
8.3	X	X	X	X	X	X	X

Uncontrolled when printed

Clause	BTP	DR	OCM	DTR	SP	RM	LS
8.4	X	X	X	X	X	X	X
9.1	X	X	X	X	X	----	----
9.2	X	X	X	X	X	----	----
10.1	X	X	X	X	X	X	----
10.2	*	*	*	*	*	*	----
10.3	X	----	*	X	X	----	----
10.4	X	----	*	X	----	----	----
10.4.1	X	----	*	X	----	----	----
10.5	X	X	X	X	X	X	X
10.6	X	X	X	X	X	X	X
10.7	X	X	X	X	X	X	X
10.8	X	X	X	----	*	----	----
11.1	X	X	X	X	X	----	----
11.2	X	X	X	X	X	----	----
11.3	X	X	X	X	X	----	----
12.1	X	----	*	*	*	----	----
12.1.1	X	----	*	*	*	----	----
12.1.2	X	----	*	*	*	----	X
12.2	X	----	*	*	*	----	----
12.3	X	X	X	----	X	----	----
12.4	X	----	*	----	*	----	----
12.5	X	----	*	----	----	----	----
12.6	X	X	X	X	X	X	X
12.6.1	X	X	X	X	X	X	X

Uncontrolled when printed

14. Revision History

#	Section Description	Description Change	Reason for Change	Approved By	Version	Revision Date
1	Initial Release of SQAM	-	-	Vice President - Quality	1.0	26-07-2021
2	Section 4- Supplier Selection process Section 12- Supplier Surveillance Section 12.6- Notification responsibilities Section 13- Applicability matrix	Added SQAM gap assessment checklist to selection process Added Supplier's QMS requirements on the process and product audit. Added additional notification responsibilities to the supplier. Changes in the applicability of mistake-proofing for Design responsible suppliers	Additional changes to bring clarity.	Vice President - Quality	1.1	11-03-2022
3	Section 3.1,4,5,6,13	Defined OCM in section 3, 4 , 5 ,6 and 13 to bring clarity	Additional changes to bring clarity.	Vice President - Quality	1.2	14-05-2022

Uncontrolled when printed

15. Appendix

SUPPLIER ACKNOWLEDGEMENT

Confirmation

We hereby confirm the receipt of this Supplier Quality Assurance Manual (SQAM). The requirements stipulated in this SQAM have been evaluated and understood by our organization.

We understand the overall quality targets for the products that are stipulated in this manual as part of Rossell Techsys requirements. We agree to strive to meet these requirements, in all our facilities that supply products and services to Rossell Techsys.

It is our responsibility to deploy these requirements, by integrating in the Organization's Quality Management System.

Supplier name	
Supplier code	
Supplier Address	
Submitted by (Name)	
Function	
Telephone number	
Email address	
Signature	
Date	

Note: Acknowledgment copy shall be submitted via mail to: Supplier.quality@rosselltechsys.com

Uncontrolled when printed

ROSSELL TECHSYS
(DIVISION OF ROSSELL INDIA LTD)

No. 58 - C, Road No. 2, Hitech Defense Aerospace Park,
KIADB Industrial Area, Devanahalli, Bengaluru - 562129
Tel: +91-80-68434500 | Fax +91-80-68434599
Email: rossell@rosselltechsys.com