

STANDARD OPERATING PROCEDURE	Document Title: Supplier Quality Assurance Requirements Manual (SQAR) Manual	Document #: GP07-001	Revision: D
	Department / Process: Supplier Development		
	Submitted by: Brian McCourt	Date: 12-Aug-2020	
	Approved by (Process Owner): William Stull	Date: 29-Apr-2021	
	Other approvers can be found on the document control system (i.e. SharePoint)		

Affected Site(s)		<input checked="" type="checkbox"/> Global	<input type="checkbox"/> Regional: _____	Local Site(s): _____
Department Distribution		<input type="checkbox"/> All Departments	<input type="checkbox"/> Finance	<input type="checkbox"/> Human Resources
<input type="checkbox"/> HSE & Security	<input type="checkbox"/> Import/Export (TCO)	<input type="checkbox"/> Leadership /Management	<input type="checkbox"/> Legal	
<input type="checkbox"/> Machine Shop	<input type="checkbox"/> Maintenance / Facilities	<input checked="" type="checkbox"/> Manufacturing / Process / Industrial Engineering		
<input checked="" type="checkbox"/> Planning	<input checked="" type="checkbox"/> Purchasing	<input type="checkbox"/> Production	<input checked="" type="checkbox"/> Quality Assurance	
<input checked="" type="checkbox"/> Quality Control	<input type="checkbox"/> Research, Dev & Technology	<input type="checkbox"/> Sales & Marketing	<input type="checkbox"/> Shipping	
<input checked="" type="checkbox"/> Sourcing	<input type="checkbox"/> Warehouse / Inventory	<input type="checkbox"/> Installation & Service (where applicable)		
Revision	Date (dd-month-year)	Author	Description	
A	5-Apr-2019	W. Stull	Initial Release	
B	23-May-2019	W. Stull	<ul style="list-style-type: none"> - Moved SQAR's to GF07-008 - Added section pertaining to Supplier Resource Awareness - Added supplier acknowledgement 	
B	15-Jan-2020	Luis R.	Update release date per GCMS 2020-2301 No rev change needed	
C	12-Aug-2020	B. McCourt W. Stull	Updated section 3.1 with SQAR code 600 Revised matrix.	
D	29-Apr-2021	W. Stull	<ul style="list-style-type: none"> - Section 1.12. Added 'Grandfather Clause' as an alternative Quality System approval. - Updated commodity matrix. Removed SQAR 535 from Limited Life Items and COTS. Added SQAR 310 to Limited Life Items. - Removed SQAR 250, 251, & 450 from Manufactured Raw Material required clauses. 	
	Date			

This manual contains requirements that are applicable when invoked by Smiths Interconnect Purchase Orders. Requirements include the mandatory use of this manual for Contract Review and Quality Planning activities.

Notice:

The SQAR Manual is a controlled document. It is controlled in electronic format. If a hard copy version is utilized, it is considered to be a reference tool. It is important to verify the currency of a hard copy by viewing the online electronic SQAR Manual. Internal Smiths Interconnect users may access the manual on the internal Smiths Interconnect Intranet:

[Smiths Interconnect Quality SharePoint](#)

Suppliers may access the manual via the Smiths Interconnect Website:

[Smiths Interconnect Supplier Information](#)

It is possible that an unincorporated change may be initiated during the current SQAR revision life cycle. If/when this were to occur, the change will be posted to the above locations only. Thus, it is important to routinely check for any such changes. Changes may be incorporated at the next general SQAR Manual revision/update.

NOTE: *If there are interpretation concerns needing clarification in the SQAR manual, please contact Smiths Interconnect Sourcing organization.*

Contents

Section 1 General Requirements	4
1.1 Preface	4
1.2 Applicability.....	4
1.3 Quality Requirements	5
1.4 Audit Rights Reserved / Right of Entry.....	5
1.5 Changes in Process, Design, Quality System, Facilities, Management or Ownership	6
1.6 Language Requirements	6
1.7 Configuration Management.....	7
1.8 Notification of Design and Manufacturing Changes.....	7
1.9 Source of Supply	7
1.10 Quality Records	7
1.11 Prohibited Practices	9
1.12 General Quality System Requirements.....	9
1.13 Obsolescence	10
1.14 Smiths Interconnect Consigned Material	11
1.15 Business Continuity Management	11
1.16 Crisis Management	12
1.17 Resource Awareness	12
Section 2 Specifications and General Information	13
2.1 General Requirements- Specifications.....	13
2.2 General Requirements- Alternate Materials	13
2.3 Conflict Minerals	13
Section 3 SQAR Matrix – Details	14
3.1 Group Requirements*	14

Section 1 General Requirements

1.1 Preface

This manual contains requirements that are applicable when invoked by Smiths Interconnect Purchase Orders. Requirements include the mandatory use of this manual for Contract Review and Quality Planning activities. Contents of Sections 1–3 shall be reviewed and complied with in conjunction with the purchase order flow down. The SQAR Manual is controlled in Electronic format. Paper copies, and electronic copies downloaded and saved to a local hard drive are uncontrolled. Suppliers shall visit the manual online to check for changes that may be identified in the electronic unincorporated change page at:

[Smiths Interconnect Supplier Information](#)

If the Supplier is working to a Purchase Order pre-dating the most current SQAR Manual release date, the Supplier may request authorization to work to the most current SQAR manual revision by requesting a Purchase Order revision from the Smiths Interconnect Buyer.

1.2 Applicability

The Smiths Interconnect Purchase Order is the official binding contract in the order of precedence described in the Terms & Conditions of Purchase. Commodity specific SQARs are identified per Section 3 of this document, although specific SQAR number(s) and/or text may be added to the PO at the discretion of Purchasing and/or Quality. If conflicts between flow down documents and the Purchase Order are detected, the Supplier shall immediately notify the Smiths Interconnect Buyer.

Handwritten, lined-out or initialed changes to purchase orders are not allowed. Handwritten, lined-out or initialed changes to engineering drawings/specification or technical data are not allowed, except where:

- provided for by Smiths Interconnect site official procedure, and
- signed by a relevant authorized Smiths Interconnect agent.

Verbal and/or email authorizations are not permitted.

Not applicable for purchase orders for Indirect Materials.

1.2.1 Subcontracting Policy

Smiths Interconnect suppliers shall ensure flow down to, and compliance with, all applicable Purchase Order and Engineering requirements to their sub-tier suppliers, including approved Special Process providers.

For Smiths Interconnect designed hardware, Supplier/subcontractor Purchase Orders to special processing providers must contain the following as a minimum:

- Reference to the applicable Smiths Interconnect CAGE Code (if applicable).
- Applicable SQAR number(s).
- Smiths Interconnect part number and nomenclature of subject part, including revision level.
- Special Processes to be performed and the applicable specification(s), revision letter(s) including the type, class, or methods and testing that are required by drawing or specification.
- Any special drawing instructions/notes, as applicable; such as inspection class, inspection grade and inspection acceptance requirements, special handling requirements not otherwise stated, etc.

1.3 Quality Requirements

The core quality requirement is for all features to comply to specifications 100% for all parts produced and shipped. If the process is not capable of meeting 100% yield it is Smiths Interconnect's expectation that all suppliers pursue measurable continuous quality and delivery improvements.

On an annual basis, Smiths Interconnect defines the minimum performance expectation measured in conventional ways such as Parts Per Million (PPM) or Lot Acceptance Rate (LAR) for quality and Percent On Time To Request (OTD-R) or Percent On Time To Promised (OTD-P) on a supplier level as well as on a part number level.

When a supplier does not meet these minimum performance levels, Smiths Interconnect reserves the right to require the supplier to engage in an aggressive improvement project – lead by the supplier's leadership as well as Smiths Interconnect Stakeholders. These projects will be focused on improving the supplier's Business Operating Systems that will result in the sustainable achievement of Smiths Interconnect's minimum performance expectation.

1.4 Audit Rights Reserved / Right of Entry

Smiths Interconnect, customers and regulatory authorities reserve the right to perform audits and/or inspections at the Supplier's and/or supplier's subcontractor's facility on the manufactured and/or repaired parts. Supplier material, records, process and routing sheets, manufacturing, and test and inspection facilities are subject to review by Smiths Interconnect and/or Smiths Interconnect's customers (Commercial, designated Government representatives, regulatory authorities). When on-site verification of Contract / Purchase order conformance is required, the supplier shall provide the equipment, facilities, and personnel necessary for the Smiths Interconnect representatives to verify compliance.

1.5 Changes in Process, Design, Quality System, Facilities, Management or Ownership

1.5.1 Generalities

Suppliers shall comply with all contractual requirements, (including but not necessarily limited to Long Term Contract and general purchase order provisions agreed between the parties), for notification and approval of changes in design, material, manufacturing location, manufacturing equipment, production processes, and any other process related to the Goods in place as of the purchase order issuance date.

1.5.2 Notification

In addition to the requirements imposed by previous paragraph, Suppliers shall immediately notify the Smiths Interconnect Buyer, the Smiths Interconnect Quality Manager from the procuring sites, and the relevant Supplier Quality Engineer, changes in quality leadership, scope, name, or address of Quality Management System registrations, or controlled processes certification status, including suspensions or disapprovals. Suppliers shall also notify the above parties in the event of complete company closure with no transition plan managed by its corporate office.

1.5.3 Records

Supplier notifications shall contain the following supplier information as a minimum:

- Supplier Name and ID
- Old data and new data (e.g. if address change, list the prior address and the new address)
- Name of supplier quality contact
- Phone number of supplier quality contact
- Email address of supplier quality contact.

1.6 Language Requirements

All quality records, data or correspondence to Smiths Interconnect are required to be in the language of the Smiths Interconnect facility placing the purchase order, or in the English language, as agreed on between the supplier and the Smiths Interconnect facility. Upon request, all supplier data related to finished product must be translated to English and made available. If the supplier does not perform this service, translation fees will be debited to the Supplier.

1.7 Configuration Management

The Supplier shall ensure that the current configuration of all drawings, specifications, and instructions required by the Contract / Purchase Order, as well as authorized changes, are used for manufacturing, inspecting, and testing. Contact the Smiths Interconnect buyer to obtain the latest revisions of Smiths Interconnect detail drawings and specifications.

1.8 Notification of Design and Manufacturing Changes

Suppliers with design authority are required to notify Smiths Interconnect promptly, in writing, of any changes of fit, form or function, or safety of product and obtain approval prior to manufacture and delivery. Supplier shall submit proposed changes to the Buyer including but not limited to: process – material – design – software.

Suppliers manufacturing to Smiths Interconnect drawing or specification invoked by purchase order must obtain written approval from Smiths Interconnect promptly, in writing, of any changes which affect form, fit, function, or safety of product being delivered to Smiths Interconnect.

Changes include but are not limited to:

- Material Change
- Sub-Tier Supplier Change
- Name Change
- Equipment Relocation
- New Equipment
- Process Change
- Plant Relocation
- Design Change

1.9 Source of Supply

When the source of supply is specified on a Smiths Interconnect drawing or specification invoked by purchase order in any manner (approved, may, suggested, recommended, trademarked, etc.), only those sources of supply shall be used. The use of any alternate sources not specifically listed on the drawing or its associated specs/databases is prohibited unless otherwise specified by site-specific requirements flowed on the Purchase Order.

1.10 Quality Records

1.10.1 Access to Records

Smiths Interconnect reserves the right to access records at the PO holder, or its sub-tiers involved in the manufacture of Smiths Interconnect product. The Supplier shall make the records available within 48 hours, or 2 business days, of the request for access.

1.10.2 Records Storage

Records must be stored in an area which meets all local Fire and Life Safety Codes that prevents loss, damage or deterioration. All data stored by electronic means shall be secure with back- up procedures, and audited to verify the integrity of the data.

1.10.3 Disposition of Records

The supplier shall contact the Smiths Interconnect Buyer for disposition of records upon termination of business activity.

1.10.4 Corrections

Changes or corrections to records, regardless of the media, shall be made as follows: draw a single line through the old data, enter the correct data, date, and apply stamp or initials or signature of individual making the correction. No erasures, covering, or "white-out" allowed.

1.10.5 Record Retention

Records of product/material manufacture, test, inspection (including radiographic film), calibration and acceptance/certification, are considered quality records and shall be retained as follows:

Records in Support of	Minimum Retention Period ¹
Radiographic Film, Digitized Film or Digital Radiographs	11 years
Non-traceable, non-serialized parts	11 years
Traceable parts as identified on the Smiths Interconnect drawing or purchase order	Indefinitely ²
Serialized parts as identified on the Smiths Interconnect drawing or purchase order	Indefinitely ²
Critical parts as identified on the Smiths Interconnect drawing	Indefinitely ²
Distributor standard off the shelf product	7 years

1. *MINIMUM retention periods, beginning with the date the order was completed. In the case where a specification, contract or purchase order requires a greater retention period, the more stringent requirement will apply.*
2. *A lengthy period of time specified in the law that cannot be determined in advance. Indefinitely does not mean that the records must be retained permanently. Records having a retention period of "Indefinitely" should be reviewed periodically to determine if they have surpassed their useful legal and business life. Destruction of records with indefinite retention period must be authorized by Smiths Interconnect.*
3. *Quality records shall be all documented information as defined within the applicable AS9100 standard.*

1.11 Prohibited Practices

The following acts or practices are prohibited:

1. **Unauthorized Repair** - Repairs (by welding, brazing, soldering, or the use of adhesives) of parts damaged or found faulty in the fabrication process; repairing holes in castings, forgings or other materials by plugging or bushing without authorization from Buyer.
2. **Unauthorized Processing** - Addition, revision, or deletion of thermal, chemical, or electrochemical processes in manufacturing when processes are subject to specification control by Buyer.
3. **Improper Material Submittal** - Submission of material having known defects/problems to Buyer without notification.
4. **Improper Material Re-submittal** - Resubmission of material to Buyer without material being clearly identified as resubmitted material.
5. **Unauthorized Material and Information Transfer** – No supplier shall buy, sell, trade, or transfer Smiths Interconnect owned/supplied drawings, data, material, parts, devices, assemblies or end equipment for purposes other than the performance of Smiths Interconnect business, without prior written approval.
6. **Reclaimed Material** – No supplier shall use reclaimed material without prior written approval from the Buyer.

1.12 General Quality System Requirements

Suppliers and supplier sub-tiers providing product, are responsible for maintaining Quality Systems that are compliant to applicable Smiths Interconnect Quality System Requirements. Suppliers shall be third-party registered and receive periodic system audits or be subject to periodic compliance audits by Smiths Interconnect. Suppliers that fail to meet the minimal requirements may still be approved if they fall within the scope of the 'Grandfather Clause' per GW04-001. Suppliers assume the cost of systems audits. Smiths Interconnect's preferred Quality Systems levels are as follows:

- Manufacturing with Design Authority: ISO9001 is required, AS/EN/JISQ 9100 or ISO/TS 22163 is preferred; design must be included in scope of registration, and suppliers may not exclude design portions of the Standard.
- Manufacturing without Design Authority / Special Processes: ISO 9001 is required, AS/EN/JISQ 9100 or ISO/TS 22163 is preferred
- Repair and Overhaul: National Aviation Authority (NAA) Certification (local and/or international regulatory agency) ISO9001 Required and/or AS9100 or AS9110 Preferred
- Special Processors (non-manufacturing): ISO 9001 is required or satisfactory audit to NADCAP (AC7004) is preferred.
- Materials Laboratories and NDT Laboratories: ISO 9001 is required, ISO 17025, or AS9003, or

- satisfactory audit to NADCAP (AC7004) are preferred.
- Distribution and Brokers: AS/EN/JISQ 9120
- Calibration Laboratories: ISO 17025
- Software Suppliers: AS/EN/JISQ 9100 and AS9115
- ISO/TS 22163

Alternate Quality System standards which do not meet the above requirements must be approved by Global Quality or the Quality Manager (or designee) of the Smiths Interconnect site issuing the PO.

The supplier shall provide evidence of a certificate of registration from an organization accredited by a member of international accreditation forum (IAF) to the industry standard listed above, or successfully pass a compliance audit conducted by Smiths Interconnect or Smiths Interconnect's approved designee.

1.12.1 Evaluation

Smiths Interconnect Supplier Quality organization, and/or the Smiths Interconnect purchasing sites, shall perform periodic evaluations on external suppliers. Failure to provide proof of compliance may result in a Quality System compliance audit being launched at the Supplier's expense.

1.13 Obsolescence

For component parts (COTS) or Smiths Interconnect designed parts or assemblies, the Supplier shall notify the Smiths Interconnect Buyer regarding part or material obsolescence as soon as the information becomes available, with an expectation to provide notification at least six months prior to the last date an order will be accepted. Smiths Interconnect requires sub-tier/subcontract suppliers to manage obsolescence on the assemblies where they own the design.

For products where the Supplier has design responsibility, the Supplier shall develop and implement a Part Obsolescence Management Process. This Process shall include the following elements at a minimum:

- Annual assessment of Product Bill of Material(s) (BOMs) to identify any obsolescence that will potentially impact delivery of product to Smiths Interconnect.
- Proactive identification and detection of part, material or manufacturing/test equipment obsolescence issues
- Action Plan to resolve each obsolescence issue, including forecast analysis and product support decision(s) (i.e. Life Time Buy, redesign or product end of life.)
- Life Time Buy inventory management plan to ensure long term ability to produce product
- Advanced notification to the Smiths Interconnect buyer of any potential interruption in the ability to meet Smiths Interconnect forecasted demand due to an obsolescence issue.

1.14 Smiths Interconnect Consigned Material

The Supplier shall not return unused consigned material without written authorization from the Smiths Interconnect Buyer.

1.14.1 Nonconforming Consigned Material

If authorized for return, the material shall be labeled "Return of Consigned Materials, Do Not Route to Stores" on the outside of the shipping container (BARCODE LABELS ARE NOT TO BE USED). The Supplier shall identify part number and revision level, and the reason for return on the packing slip.

1.15 Business Continuity Management

The Supplier shall ensure their Company has robust Business Continuity Management (BCM) processes in place that include disaster recovery and preparedness.

1.15.1 Business Continuity Plan (BCP)

The Supplier shall document a Business Continuity Plan which details what the Company would do in the event that key People, Processes or Technology was to become unavailable. This Business Continuity Plan shall be applicable, including but not limited to, natural disasters, labor disputes, lockouts, evictions, power or systems failures, hazardous spills, fire, floods, explosions, sabotage, riots, war or other civil disturbances, and voluntary or involuntary compliance with any laws, regulations, or requirements of any government authorities.

General information regarding how to develop a Business Continuity Plan can be found on the internet. Some helpful website links are listed below:

- <http://www.disaster-recovery-guide.com/>
- http://www.disasterrecovery.org/disaster_recovery.html
- ISO 22301 BCP Management

1.15.1.1 Sub-Tiers

The Supplier's BCP should also include planned actions to mitigate any disruptions in supply from critical sub-tiers.

1.15.2 Audit Rights

Smiths Interconnect reserves the right to review the Supplier's BCP at any time to assess their maturity and continued development.

1.16 Crisis Management

1.16.1 Notification

The Supplier must use best efforts to notify Smiths Interconnect Commodity Manager or Buyer within 24hrs if they experience an incident, including but not limited to those listed in 1.16.1 above that may impact their ability to make their scheduled shipments to Smiths Interconnect.

1.16.2 Sub-Tiers

Supplier must notify Smiths Interconnect Commodity Manager or Buyer within 24hrs of receiving notification that any of their critical sub-tiers have experienced an incident, including but not limited to those listed in 1.16.1 above, that may impact their ability to provide materials or components to the Supplier that are required in the manufacture or assembly of Smiths Interconnect product.

1.16.3 Disaster Recovery

In the event of a supply interruption, Smiths Interconnect may engage the Supplier to collaborate on recovery. Supplier is expected to fully support any such engagement until the delivery schedule to Smiths Interconnect is recovered.

1.17 Resource Awareness

The supplier shall ensure that persons doing work under its control are aware of:

- Their contribution to product or service conformity.
- Their contribution to product safety.
- The importance of ethical behavior.

Section 2 Specifications and General Information

2.1 General Requirements- Specifications

Suppliers are required to identify and work to Government, Industry, and Smiths Interconnect specification revisions as follows.

When a specification revision is listed on an engineering drawing, only that specification and revision shall be used.

- When no specification revision is listed on an engineering drawing, suppliers are required to identify the current specification and revision and to work to that specification and revision.
- The applicable revision shall be the revision in effect on the date of the Purchase Order except that new specification changes shall be implemented within 60 days of specification revision date.
- Parts on existing contracts that are processed before the specification change are acceptable unless otherwise specified in the revised document.

2.2 General Requirements- Alternate Materials

Material substitutions are NOT allowed without written Engineering approval.

2.3 Conflict Minerals

In an effort to comply multinational requirements related to manufacture products containing tin, tantalum, tungsten or gold (termed "conflict minerals"), Smiths Interconnect is requiring all suppliers who supply product that may contain materials defined "conflict minerals" to conduct a reasonable "country of origin" determination (due diligence) for any conflict minerals that may be contained in using the current revision of the Conflict Minerals Reporting Template (CMRT). A downloadable version is available [here](#).

Section 3 SQAR Matrix – Details

3.1 Group Requirements*

In all cases, contents of SQAR Manual Sections 1.0–General Requirements, and Section 2.0–Specifications and General Information, shall be reviewed and complied with in conjunction with the purchase order flow down of specific Group SQARs, or individual SQARs.

Individual SQAR’s may have multiple sections, the supplier is responsible to understand applicability or request clarification.

The following SQAR’s are required for all Direct Purchase Orders											
100	Notification, Containment, and Corrective Action of NC Material to PO										
110	Certificate of Conformance / Shipping Declaration / Packaging Slip Requirements.										
200	Key Characteristics (KC) Management										
210	Component Traceability										
220	Foreign Object Damage (FOD) Control										
300	Packaging and Package Identification										
419	Supplier Counterfeit Parts Prevention Requirements										
410	Outsourcing Approval Required										
420	Provisions for Export-Control Regulation										
430	REACH & RoHS Requirements										
600	U.S. Government FAR DFAR Flow Down										
The following SQAR’s are required by Commodity Type for Direct Purchase Orders											
SQAR	Title	Limited Life Items: Chemicals, Adhesives, O-Rings	Manufactured Raw Materials - Machining, Stamping, Molding	Connectors and Cable Assemblies	Diodes and PCB’s	Standard Hardware / COTS	Outside Processing (Special Processes)	Raw Materials	Ceramic Capacitors	Ceramic - Alumina/BEO/Aluminum-Nitride/Beryllia/CVD Diamond	Ceramic OSP - Machine/Scribe/Trim/Marking
205	Characteristic Accountability		X	X			X				
535	Material Test Reports		X							X	X
230	First Article Inspection Requirements		X	X			X		X		
240	Acceptance Data Package (Type A or B)		B	A	A		B		A		
440	Process Control Plan		X								
310	Control of Items with Limited Shelf-Life	X	X								
235	Drop Shipment of Smiths Interconnect Purchase Order		X								
165	Approved Sources for Special Processes			X			X	X			

SQAR Agreement

This Agreement together with Smiths Interconnect and Purchase Order agreement constitutes the entire agreement between the Supplier and Smiths Interconnect with respect to the subject matter hereof. No amendment to or modification of this Agreement shall be binding unless in writing and signed by a duly authorized representative of both parties.

Each party has caused this Agreement to be executed by its duly authorized representative as of the Effective Date.

Supplier Company Name:

Name (Printed):

Signature:

Title:

Date:

Smiths Interconnect

Name (Printed):

Signature:

Title:

Date: