

Supplier requirements For

Pratt & Whitney F135 (F-35 Joint Strike Fighter) related
product supplied to Ultra Precision Control Systems



PUR-SOPS-015

Issue: **04**

Precision Control Systems

Value stream or function

- | | |
|--|---|
| <input type="checkbox"/> Cambridge | <input checked="" type="checkbox"/> Greenford |
| <input checked="" type="checkbox"/> Cheltenham | <input type="checkbox"/> Manhattan (Kansas) |
| <input type="checkbox"/> Columbia City (Indiana) | <input type="checkbox"/> Preston |

Owner: **Prime DQR**

BMS change number **BMS578-21**

Date **24/06/2021**

© Ultra Electronics Limited trading as Ultra Precision Control Systems 2014 – 2020.

PROPRIETARY - This document and the information contained herein is the property of Ultra Electronics Limited, trading as Ultra Precision Control Systems and must not be disclosed, copied, altered or used without written permission.



CONTENTS

REVISION HISTORY	5
LIST OF ABBREVIATIONS	5
LIST OF REFERENCES	6
1 INTRODUCTION & DOCUMENT CONTROLS	7
1.1 SCOPE	7
1.2 FLOW DOWN	7
1.3 PRECEDENCE	8
1.4 REVIEW PROCEDURE	9
1.5 AMENDMENT PROCEDURE	9
1.6 PROCESS ADHERENCE	9
2 ROLES, RESPONSIBILITIES AND FOCAL POINT	9
2.1 ROLES & RESPONSIBILITIES	9
2.2 FOCAL POINT.....	10
3 TERMS AND DEFINITIONS	10
3.1 DELEGATED PRODUCT RELEASE VERIFICATION (DPRV) PROGRAM	10
3.2 DESIGNATED QUALITY REPRESENTATIVE (DQR) PROGRAM.....	10
3.3 OPERATOR CERTIFICATION.....	10
3.4 UTC QUALIFIED DISTRIBUTOR LIST (QDL).....	10
3.5 SUPPLIER TYPES	11
3.5.1 Supplier Type Identification	11
3.5.2 Supplier Type Applicability Table	11
4 QUALITY MANAGEMENT SYSTEM (QMS)	11
4.1 GENERAL REQUIREMENTS	11
4.1.1	11
4.1.2	11
4.1.3	11
4.1.3.1	11
4.2 COMMUNICATION WITH THE UTC MEMBER	12
4.2.1 General Communication Requirements	12
4.2.1.1	12
4.2.1.2	12
4.2.2 Method of Communication	12
4.2.2.1	12
4.2.2.2	12
4.2.2.3	12
4.2.3	13
4.2.4	13
4.2.5	13
4.2.6	13
4.3 COMPLIANCE AND REQUIREMENTS FLOW DOWN	13
4.3.1	13
4.3.2	13
4.3.3	13
4.3.4	14
4.3.5	14
4.4 DOCUMENTED INFORMATION (MAINTAINED AND RETAINED)	14
4.4.1	14
4.4.2	14
4.5 CONTROL OF NON-CONFORMING PRODUCT	14
4.5.1	14
4.5.2	14
4.5.3	14
4.5.4	15



4.5.5	.....	15
5	PRODUCTION PLANNING AND CONTROL	15
5.1	MANAGEMENT OF SUPPLY CHAIN.....	15
5.1.1	.....	15
5.1.2	.....	15
5.1.3	.....	15
5.2	PRODUCTION PROCESS VALIDATION.....	15
5.2.1	.....	15
5.2.2	First Article Inspection (FAI).....	15
5.2.2.1	.....	15
5.2.2.2	.....	15
5.2.2.3	.....	16
5.2.2.4	.....	16
5.2.2.5	.....	16
5.2.3	.....	16
5.2.4	.....	16
5.3	MONITORING AND MEASUREMENT OF EQUIPMENT	16
5.3.1	.....	16
5.3.2	.....	16
5.4	MONITORING AND MEASUREMENT OF PRODUCT	17
5.4.1	.....	17
5.4.2	.....	17
5.4.3	.....	17
5.4.4	.....	17
5.4.5	Inspection Sampling	17
5.4.5.1	.....	17
5.4.5.2	.....	17
5.4.5.3	.....	17
5.4.6	.....	17
5.5	DQR/DPRV PROGRAMS.....	18
5.5.1	Supplier participation in Member DQR/DPRV programs	18
5.5.1.1	.....	18
5.5.1.2	.....	18
5.5.1.3	.....	18
5.5.1.4	.....	18
5.5.1.5	.....	18
5.5.2	.....	18
5.6	SPECIAL PROCESSES.....	18
5.6.1	.....	18
5.6.2	.....	18
5.6.3	.....	19
5.6.3.1	.....	19
5.6.3.2	.....	19
5.6.3.3	.....	19
5.6.4	.....	19
6	ETHICAL BUSINESS CONDUCT & COMPLIANCE	20
6.1	POLICIES AND PROCEDURE REQUIREMENTS.....	20
6.2	ANONYMOUS REPORTING	20
7	ITAR COMPLIANCE	20
7.1	OVERVIEW.....	20
7.2	ACCESS TO ITAR-CONTROLLED ITEMS	20
7.2.1	.....	20
7.2.2	.....	21
7.2.3	.....	21
7.2.4	.....	21
7.2.5	.....	21



7.3	OBTAINING AUTHORISATION.....	21
7.3.1	.....	21
7.3.2	.....	21
7.3.3	.....	22
7.3.4	.....	22

TABLE OF FIGURES

Figure 1: Supplier Requirements Flow Down.....	8
--	---



REVISION HISTORY

REVISION	CHANGE NUMBER	AUTHOR	DATE
01	FORMAL ISSUE	M E RODHAM	January 2014
02	N/A	M E RODHAM	November 2014
03	N/A	M E RODHAM	March 2015
04	BMS578-21	S FLYNN-WRIGHT	February 2021

LIST OF ABBREVIATIONS

ASQR	Aerospace Supplier Quality Requirements
BTP	Build To Print
COTS	Commercial Off The Shelf
DPRV	Delegated Product Release Verification
DQR	Designated Quality Representative
DTCN	Dual and Third Country National
ERP	Enterprise Resource Planning
FAI	First Article Inspection
FOD	Foreign Object Damage
ILAC	International Laboratory Accreditation Cooperation
ITAR	International Traffic in Arms Regulations
JSF	Joint Strike Fighter
MLA	Manufacturing Licence Agreement
N/R	Not Required
NADCAP	National Aerospace and Defence Contractors Accreditation Program
NDA	Non-Disclosure Agreement
PW	Pratt & Whitney, a Division of Raytheon Technologies Corporation
PCS	Precision Control Systems (a trading name of Ultra Electronics Limited)
PFMEA	Process Failure Mode and Effect Analysis
PPAP	Production Part Approval Process
PRI	Performance Review Institute
QA	Quality Assurance
QDL	Qualified Distributor List
QMS	Quality Management System
SLQ	Sub-Licence Questionnaire
SQE	Supplier Quality Engineer
UTCQR	United Technologies Corporation Quality Requirement



LIST OF REFERENCES

ANSI/NCSL Z540.3	Requirements for the Calibration of Measuring and Test Equipment
AS/EN/JISQ 9100	Quality Management Systems for Aerospace Industry
AS/EN/JISQ 9120	Aerospace Quality Management Standard (Distribution and Stockists)
AS/EN/JISQ 9146	Foreign Object Damage (FOD) Prevention Program
AS13000	Problem Solving Requirements for Suppliers
AS13001	Supplier Self Release Training Requirements
AS13002	Requirements Developing and Qualifying Alternate Inspection Frequency Plans
AS13003	Measurement System Analysis Requirements for the Aero Engine Supply Chain
AS13004	Process Failure Mode and Effect Analysis (PFMEA and Control Plans
AS9102	Aerospace First Article Inspection Requirements
AS9117	Delegated Product Release Verification
ASQR-01	Supplier Quality System Requirements (P&W)
ASQR-01 Form 2	Process Change Notification
ASQR-01 Form 3	Supplier Request for Information
ASQR-01 Form 6	Notification of Potential Quality Escape
ASQR-01 Form 7	Delegated Quality Representative (DQR) Candidate Application
ASQR-01 Form 8	Letter of Agreement, Delegated Quality Representative Program
ASQR-01 Form 9	UTC Distributor Request
ASQR-07.5	Control of Software
ASQR-09.1	Flight Safety Parts Program
ASQR-09.2	UTC Production Part Approval Process (PPAP)
ASQR-20.1	Supplier Sampling Requirements
DC0069	PCS Cambridge, Greenford, Preston Supply Chain Quality Requirements
Eagle Eyes	P&W communication for lessons learned.
IATF16949:2016	Automotive Quality Management Requirements
ISO 10012	Measurement Management Systems - Requirements for Measurement Processes and Measuring Equipment
ISO 17025	Testing and Calibration Laboratories
ISO 9001	Quality Management System
Nadcap AC7004	Nadcap Aerospace Quality System
PCS2000	Business management system (BMS) document change process.
PUR-FORM-009	Compliance Matrix
PUR-SOPS-003	PCS Cheltenham Suppliers General Requirements. (Ultra)



1 INTRODUCTION & DOCUMENT CONTROLS

1.1 Scope

This document defines the methodology, policies, objectives, quality assurance (QA) requirements and approval process employed at Ultra Precision Control Systems (PCS) for the selection and control of suppliers for the Pratt & Whitney (PW) F135 [F-35 Joint Strike Fighter (JSF)] Programme. This document shall be read in conjunction with PUR-SOPS 003 – Requirements for Suppliers or DC0069, Supply Chain Quality Requirements, depending upon the PCS site issuing the purchase order.

The requirements of this document apply to all suppliers that furnish product, material, processes or product related services for purchase orders where PUR-SOPS-015 is invoked or flow down within the supply chain. This is regardless of the supplier’s industry, regulatory accreditation, or certification status, and each supplier shall be responsible for ensuring that all levels of its supply chain comply with the requirements set forth herein.

ASQR-01, Aerospace Supplier Quality Requirements, defines supplier quality requirements as agreed upon by the following UTC business entities each of which is subsequently referred to as “Member”.

Pratt & Whitney (PW)

Pratt & Whitney Canada (P&WC)

UTC Aerospace Systems (UTAS)

The ASQR-01 document has been developed based upon the requirements of the International Aerospace Quality Group (IAQG) AS/EN/JISQ 9100 - Quality Management Systems - Requirements for Aviation, Space and Defense Organizations and identifies unique requirements for UTC Member companies and their supply chains.

1.2 Flow down

The flow down of the requirements contained within DC0069 or PUR-SOPS-003 and PUR-SOPS-015 is to ensure that all PW requirements defined or contained within ASQR-01 are passed down to PCS suppliers which can then be subsequently flow down to any further sub-tier supplier utilized.

In addition Sections 6, Ethical Business Conduct and Compliance, and Section 7, ITAR Compliance, flow down additional PW derived requirements.

Fig.1 below annotates the flow of requirements:



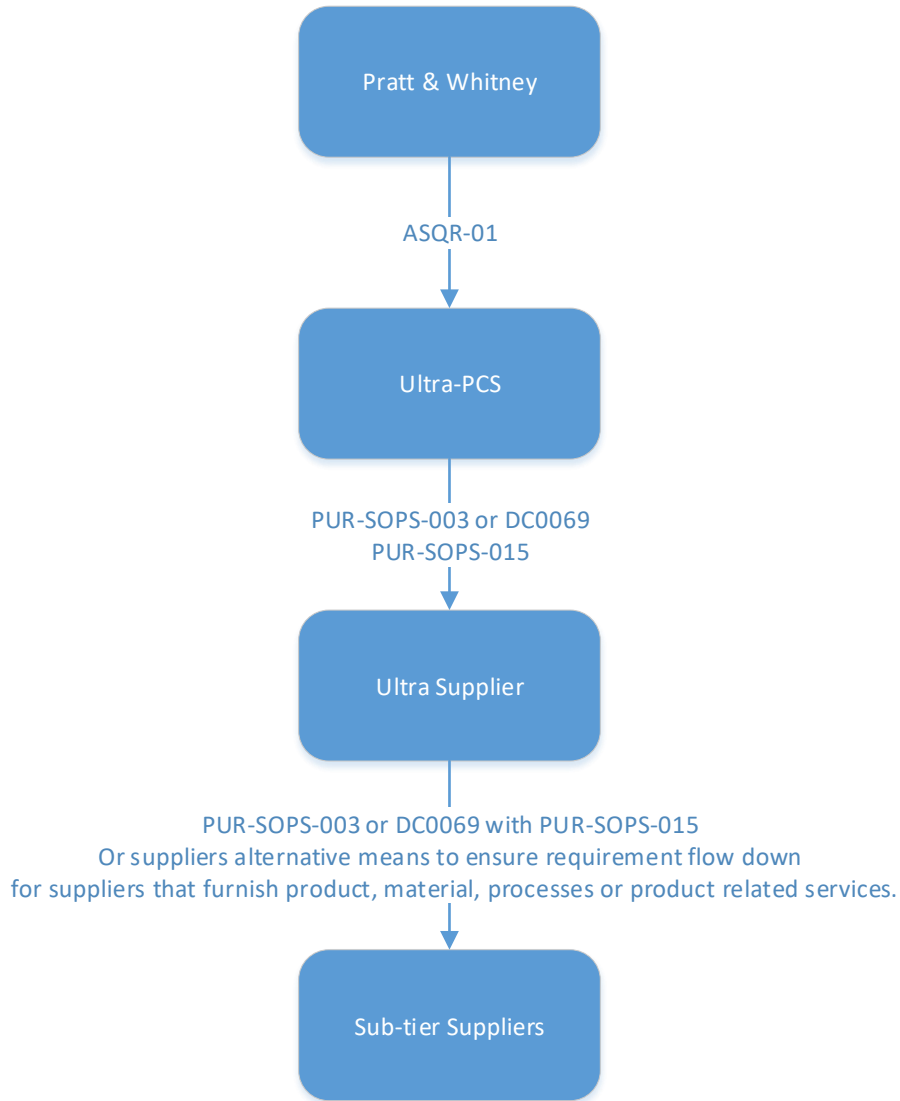


Figure 1: Supplier Requirements Flow Down

For ease of correlation and any future updates, this document has been created in direct correlation of ASQR-01, therefore sections 3 to 5 inclusive mirror the same sections from ASQR-01. To save requirement duplication for all areas where compliance is met via DC0069 or PUR-SOPS-003, the section shall read “Covered via DC0069 or PUR-SOPS-003”. Any additions/guidance are highlighted in Bold and Italics.

1.3 Precedence

Where conflict arises between this document and DC0069 or PUR-SOPS 003, the most stringent requirement will take precedence. Where conflict arises between this document and the purchase order; the Purchase Order will take precedence.



1.4 Review Procedure

This procedure will be reviewed for applicable content when any of the following documents change that may have an adverse effect on the content of this document:

- ASQR-01
- DC0069 or PUR-SOPS-003
- Eagle Eyes – Lessons learned supplied from PW.
- Any other customer flow down requirement that will alter the supplier requirements for the PW F135 / F-35 JSF Programme.

Continued review shall be invoked via a 6 monthly audit schedule within PCS Enterprise Resource Planning (ERP) system where an audit review is performed to ensure this document is kept up to date and capture any applicable modifications where required denoted by a revision change.

1.5 Amendment Procedure

PCS will maintain this supplier quality document under process PCS2000 – Business management system (BMS) document change process.

This edition of PUR-SOPS-015 has been created in conjunction with ASQR-01 Revision 11. At such a time the revision of this document changes it will be processed and flow down to the supply chain in a timely manner to ensure compliance with customer requirements. Should extensive changes incur, a quality bulletin may be released notifying the supply chain of the changes whilst the document is updated and distributed in a timely fashion.

1.6 Process Adherence

- Unless the applicable specification issue is mandated by the purchase order it is the responsibility of the supplier to ensure they are working to the latest version of any specifications referenced in this document as well as the purchase order requirements.
- The supplier shall complete Compliance Matrix PUR-FORM-009 then return to PCS purchasing Department. The Compliance Matrix shall be updated and submitted any time this document changes revision.
- Requests for PCS specifications that are needed shall be requested from the applicable PCS Purchasing Department.
- Copies of National or International specifications shall be obtained from their governing body.
- ALL stated Member documents can be found on the Raytheon Technologies Website:

<https://www.rtx.com/suppliers/united-technologies-suppliers/united-technologies-asqrd>

2 ROLES, RESPONSIBILITIES AND FOCAL POINT

2.1 Roles & Responsibilities

- PCS Quality Department: Responsible for the creation and maintenance of this document.
- PCS Purchasing Department(s): Responsible for the flow down of this document within the supply chain and act as the point of contact regarding the flow of information
- PCS Supplier Quality: Responsible for the oversight and adherence of this document within the supply chain along with answering any queries or interpretations that relate to the content of this document and PUR-FORM-009 sign off. Liaising with PCS Quality where required.
- Suppliers: Responsible for compliance to this document and further flow down.



2.2 Focal Point

To improve productivity, efficiency and other vital factors it is key to ensure good communication pathways between PCS and the supplier are established and maintained. To ensure this happens, PCS supply chain are the focal point for all communications received from the Supplier and will disseminate all information to the relevant departments where required. It is expected that the supplier channels communication via a focal point in a likewise fashion.

NOTE: Sections 3,4 & 5 of this document are in **direct** correlation of ASQR-01, any additions/guidance are highlighted in combined **BOLD & Italics**.

3 TERMS AND DEFINITIONS

3.1 Delegated Product Release Verification (DPRV) Program

A process whereby a supplier is delegated the authority to act on behalf of the delegating organization to verify and release products/services (reference AS9117).

This only applies to suppliers who “drop ship” product direct to Member (PW). Drop-ship is when product is supplied direct to Member (PW) on PCS’s behalf, a drop ship supplier is directly approved by PW.

3.2 Designated Quality Representative (DQR) Program

The DQR program enables a Member-approved supplier representative to perform over inspection activities and release product shipments on behalf of Member DPRV program.

This only applies to suppliers who “drop ship” product direct to Member (PW) within PCS’s supply chain.

3.3 Operator Certification

A method whereby an Operator, with the required training, has the capability to determine the acceptability or non-acceptability of parts they produce and/or inspect.

Should a supplier wish to obtain operator certification, this may be applied for by the supplier via PCS with Member (PW)

3.4 UTC Qualified Distributor List (QDL)

N/A as PCS are a type 2 supplier to Member (PW) and therefore not required to be flown down within it’s supply chain.



3.5 Supplier Types

N/A as PCS are a type 2 supplier to Member (PW), all flow down requirements are contained within this document.

3.5.1 Supplier Type Identification

N/A as PCS are a type 2 supplier to Member (PW), all flow down requirements are contained within this document.

3.5.2 Supplier Type Applicability Table

N/A as PCS are a type 2 supplier to Member (PW), all flow down requirements are contained within this document.

4 QUALITY MANAGEMENT SYSTEM (QMS)

4.1 General Requirements

4.1.1

Covered via PCS approval with PW as PCS obtain the purchase order from Member (PW).

4.1.2

All Distributors in the supply chain shall be certified by an industry accredited body to AS/EN/JISQ 9100, AS/EN/JISQ 9120, ISO 9001, or IATF16949:2016.

4.1.3

N/A as PCS are a type 2 supplier to Member (PW) and therefore not required to be flown down within its supply chain.

4.1.3.1

N/A as PCS are a type 2 supplier to Member (PW) and therefore not required to be flown down within its supply chain.



4.2 Communication with the UTC Member

4.2.1 General Communication Requirements

4.2.1.1

Only PCS shall have direct contact with the Member (PW) and will flow down any information to the supplier in the applicable format. Supplier shall only accept agreements and instructions in writing (e.g., purchase order, purchase order supplements/amendments, ASQR-01 Forms or Engineering Coordination Memo (ECM)). Verbal agreements and instructions shall not be construed as approval or authorisation.

4.2.1.2

For communication with the Member **(PW) and PCS**, Supplier shall have the capability to communicate in English including the following documents unless otherwise approved by the Member **(PW) or PCS**.

- Quality Manual
- First level Quality procedures
- Process documentation requiring Member **(PW)** approval.
- All formal communication (e.g., ASQR, UTCQR, and Member-specific Forms, FAI, PPAP documents)

In cases where Supplier maintains copies in their native language as well as in English, and there is a conflict, the English language document shall take precedence.

4.2.2 Method of Communication

4.2.2.1

N/R – Specified member (PW) ASQR-01 Forms where required have been tailored into the specific section.

4.2.2.2

Supplier shall **formally** notify **PCS** in writing, prior to implementation of any change that may affect quality and/or product fit, form, or function, as required by Member. (e.g., a change in; design characteristic, manufacturing or assembly process, inspection method, tooling, materials, numerical control program or translation to another media). ***Should it be required, the supplier may be requested to submit or work with PCS in the creation and submission of ASQR-01 Form 2 (Process Change Notification) for review and sign off by the Member (PW).***

4.2.2.3

Engineering Coordination Memo (ECM) shall be utilised for all formal communications and requests for all quality requirements. ECM's shall be utilised for items such as:

- Clarification, interpretation, or identified error with a drawing, specification or requirement.
- A request for an approval to use an alternate method to comply specified quality system requirements (Use of an alternate method is not permitted without prior Member **(PW)** approval **(where required)**).

All formal submissions via ECM shall be submitted to PCS, who will respond in a timely fashion. Where Member approval is required, ASQR-01 Form 3 (Supplier Request for



Information) shall be utilised and submitted by PCS to the Member (PW), the Supplier may be requested to aid in this submission.

4.2.3

Supplier shall Notify **PCS via ECM** prior to any planned work transfers (e.g., from one supplier facility to another, from the supplier to a member of its supply chain, from one member of its supply chain to another).

4.2.4

Supplier shall permit Member (**PW**) and **PCS** access to all data in OASIS and Nadcap databases (e.g., registration documentation, certification, audit reports and findings, corrective actions).

NOTE: Member (**PW**) may input significant/frequent escape data, major audit findings and delinquent responses into the OASIS database feedback process.

4.2.5

Supplier shall notify **PCS** of any changes in its certification, registration, or accreditation within 48 hours of receiving notification of change.

4.2.6

Covered via DC0069 and PUR-SOPS-003.

4.3 Compliance and Requirements Flow down

4.3.1

Supplier shall comply with the latest revisions of ASQR, UTCQR, Member-specific quality system requirements, and other documents referenced herein. Supplier shall establish compliance within 60 days of the document effective date unless otherwise specified in the Member publication notification. ***Compliance to this requirement is established via adherence to this document (PUR-SOPS-015). This can be achieved via Section 1.6 – process adherence and compiling the applicable compliance matrix.***

4.3.2

Supplier shall comply with the requirements of ASQR-07.5 when

- utilising Manufacturing, Test, or Support Software
- providing Deliverable Software

Review with PCS for applicability and implementation if required.

4.3.3

Requirement currently not invoked. If Flight Safety Parts to the requirements of ASQR-09.1 are invoked then PUR-SOPS-015 will be updated via this section and flown down in the supply chain.



4.3.4

Supplier shall reduce process risk and variation through the use of Process Failure Mode and Effect Analysis (PFMEA), control plans, and process control methods as defined in UTCQR-09.1.

Please ensure UTCQR-09.1 and its referenced documents (AS13004 etc.) are obtained and understood, especially when PFMEA (AND control plan) is required to be implemented. When invoked the PFMEA and control plan will be required as part of the FAI submission in Section 5.2.2.

4.3.5

Supplier shall comply with the requirements of AS/EN/JISQ 9146 for FOD Prevention Programs and include cleanliness of manufacturing processes and residual magnetism as additional program elements.

NOTE: Where a process could potentially induce residual magnetism, control of residual magnetism in product and associated tooling should be maintained within +/- 3 Gauss. Ferrous material should be inspected after all manufacturing operations have been completed and on all parts in the lot.

4.4 Documented Information (maintained and retained)

4.4.1

Changes to documented information (e.g., work instructions, travelers, routers, test reports, shipping documents) shall be recorded, dated, and traceable to a qualified person making the change (e.g. name, signature, stamp, electronic signature) with a permanent marking method and the original information being legible and retrievable after the change.

4.4.2

Covered via DC0069 and PUR-SOPS-003

4.5 Control of Non-Conforming Product

4.5.1

Supplier shall have a root cause and corrective action process consistent with the 8D methodology in AS13000.

4.5.2

Supplier shall inform **PCS** within 24 hours of discovery of suspect non-conforming product having been shipped regardless of destination. ***If the supplier is subject to "drop ship" activities and delivers direct to the Member (PW) then ASQR-01 Form 6 is to be utilized, sent direct to PW and PCS within the same timescale.***

4.5.3

All product rework shall have documented work instructions. Supplier shall request and obtain approval for rework of product subject to frozen process control.

NOTE: Non-conforming product not subject to frozen process control that can be reworked to meet all product requirements within the existing manufacturing process does not require Member (**PW**) notification or request for approval/disposition.



4.5.4

Upon implementation of corrective action, to ensure effectiveness, Supplier shall have a documented process in place to ensure that 100% over-inspection (i.e., additional independent measurement of the affected characteristic(s)) is performed of the deviated characteristics for a minimum of the next three consecutive manufactured lots (quantities of parts produced under conditions that are considered uniform) unless otherwise specified by the Member (**PW**).

4.5.5

Member (**PW**) may assign Key Characteristic requirements as specified in UTCQR 09.1 for significant escapes, repeated escapes, or recurrent concession requests.

5 PRODUCTION PLANNING AND CONTROL

5.1 Management of Supply Chain

5.1.1

N/R – Purpose of this document however is stated in section 1.2

5.1.2

Covered via DC0069 and PUR-SOPS-003

5.1.3

The use of material and hardware with broken traceability or sourced from a non-authorized supplier is prohibited unless approved by Member (**PW**). ***Should the Supplier wish to obtain approval a request can be made using ASQR-01 Form 3 prior to shipment. This will be processed via PCS with Member (PW).***

5.2 Production Process Validation

5.2.1

Supplier shall only ship product which is identified with Member acceptance symbols to Member or Member-approved destinations. ***This only applies where “drop ship” is required.***

5.2.2 First Article Inspection (FAI)

5.2.2.1

Covered via DC0069 and PUR-SOPS-003

5.2.2.2

This section is covered by PCS with the Member (PW) unless “drop ship” is required. If “drop ship is performed part marking is required to be approved by the Member (PW) prior to FAI submission.



5.2.2.3

For an assembly level FAI, all lower level and detail FAIs shall be included in the FAI Report.

5.2.2.4

Additional requirements for AS9102 FAI Form 1 (**only required with supplier processing “drop ship”**):

- Field 11, Supplier Code: Record Member-assigned supplier code
- Field 12, Purchase Order Number: Record Member purchase order number

5.2.2.5

Additional requirements for AS9102 FAI Form 3:

- Field 14, for each characteristic: Record type of inspection measuring equipment used (e.g. gage name, type, description) and inspector identification (e.g., signature, stamp, electronic authorization) of the person that accomplished the inspection.

5.2.3

When invoked by the Member (PW), Production Part Approval Process per the requirements contained in ASQR-09.2. When invoked PCS shall flow down these requirements to the supplier either by purchase order, drawing or any other contractual requirement.

5.2.4

When specified by the Member (**PW**), Supplier shall use the Member online system to capture production process verification data (e.g., PPAP, FAI) and audit data. ***PCS will flow down this requirement if invoked via Member.***

5.3 Monitoring and Measurement of Equipment

5.3.1

Supplier management systems for the control of monitoring and measuring equipment shall meet one of the following requirements: ISO 10012, ISO 17025, or ANSI/NCSL Z540.3. If using ANSI/NCSL Z540.3, Supplier shall implement the requirements using the Handbook for the Interpretation of ANSI/NCSL Z540.3.

5.3.2

Supplier shall document an impact review whenever monitoring and measuring equipment is identified with a Significant-Out-Of-Tolerance condition (an out of tolerance condition exceeding 25% of the product tolerance or when measured error of the monitoring and measuring equipment is greater than two times the calibration tolerance when product tolerance is not known) and notify ***PCS within 24 hours of discovery if impacted product has been shipped. Where required the supplier shall work with PCS for ASQR-01 Form 6 submittal to Member (PW).***



5.4 Monitoring and Measurement of Product

5.4.1

Supplier shall select monitoring and measuring equipment with a minimum accuracy ratio of 4 to 1 (product tolerance to equipment tolerance) unless otherwise specified.

5.4.2

Supplier shall perform MSA on all measurement systems used to measure KCs as defined in UTCQR-09.1

5.4.3

When performing MSA, supplier shall comply with the requirements of AS13003 Table 2 with the following exception:

- The acceptable precision to tolerance ratio (Gage R&R) is $\leq 20\%$

Note 1: Appropriate action should be taken to improve the measurement process when the requirements as AS13003 Table 2 have not been achieved.

Note 2: Refer to ASQR-20.1 for determination of critical, major, and minor features (characteristics).

5.4.4

Supplier shall have a process for on-going verification of visual acuity and colour vision for individuals performing product inspection.

5.4.5 Inspection Sampling

5.4.5.1

Supplier shall comply with the requirements of ASQR-20.1.

5.4.5.2

Product acceptance inspection shall be 100% for all characteristics until the inspection requirements of ASQR-20.1 have been achieved.

5.4.5.3

Supplier shall request and obtain approval of alternate inspection frequency plans (e.g., AS13002), **firstly from PCS and where required** from Member (**PW**) using ASQR-01 Form 3.

5.4.6

Supplier shall request and obtain approval for the use of an Operator Certification program or special manufacturing methodologies (e.g., manufacturing controlling features, die/mold control and method of manufacturing), from Member **via PCS** using ASQR-01 Form 3.



5.5 DQR/DPRV Programs

NOTE: Section 5.5 only applies to Suppliers to PCS that perform “drop ship” activities direct with Member (PW).

5.5.1 Supplier participation in Member DQR/DPRV programs

5.5.1.1

Supplier shall comply with AS9117 in defining its minimum system and personnel requirements for Member DQR/DPRV programs.

5.5.1.2

Supplier shall request and obtain approval for acceptance in Member DQR programs using ASQR-01 Form 8 once every three years.

5.5.1.3

Supplier shall request and obtain approval from the Member for DQR candidates using ASQR-01 Form 7.

5.5.1.4

Supplier shall comply with AS13001 for DQR training requirements.

5.5.1.5

DQR personnel shall successfully complete supplementary Member product, process, and procedural training within the Member-required timeframe in order to receive authorization to release product to Member.

5.5.2

When Supplier has its own DPRV program (i.e, Supplier is the delegating organization), Supplier shall comply with the requirements as AS9117 and AS13001.

5.6 Special Processes

5.6.1

QMS certification: Special Process Suppliers shall be certified to AS/EN/JISQ 9100 or NADCAP AC7004. ***If non-NADCAP suppliers used see Section 5.6.3.***

5.6.2

Special Process certification: All Special Process Suppliers in the supply chain shall be Nadcap accredited for the following special processes: ***If non-NADCAP suppliers used see Section 5.6.3.***

- Chemical Processing
- Coatings
- Heat Treating
- Materials Testing Laboratories
- Nonconventional Machining and Surface Enhancement
- Non-destructive Testing
- Welding



Note: Special process categories are defined by Performance Review Institute (PRI). Nadcap or International Laboratory Accreditation Cooperation (ILAC) requirements may be further defined by the Member (**PW**).

5.6.3

Design Responsible Supplier (**PCS**) shall have a comprehensive special process management program in place for the special processes listed in paragraph 5.6.2.

5.6.3.1

The program shall include maintaining a list of qualified Special Process Suppliers along with their Nadcap approval status. (**See 5.6.3.3 For compliance**)

5.6.3.2

If Special Process Suppliers do not hold Nadcap certification, Design Responsible Supplier (**PCS**) shall maintain appropriate oversight of internal and supplier processes including, but not limited to, onsite special process audits, periodic testing of product, and other means to validate product integrity. (**See 5.6.3.3 For compliance**)

5.6.3.3

For parts under PUR-SOPS-015 control, to comply with the requirements 5.6.3.1 & 5.6.3.2 PCS require Suppliers to generate Special Process Supplier list on an annual basis and provide to PCS Supplier Quality Engineer (SQE) by the end of Q1. A template can be found with the PUR-FORM-009 compliance matrix and should coincide with the following example for content as a minimum, Audit schedule dates will be arranged with the PCS SQE. Please list all JSF F-135 parts manufactured and the parent child relationship for all parts containing special processes as listed in 5.6.2:

Supplier	Part Number (Starting with top level)	Revision	Special Process Description	Special Process Specification	Special process supplier? (Y/N)	Nadcap Approval No.	Planned Audit Date	Periodic Testing of Product	Other Means of Product Validation
A	87510001	1	N/A	N/A	N	N/A	N/A	N/A	N/A
B	87510002	1	Coating	MIL-G-45204 Type 11 Grade C – Class 1	Y	ABC123	N/A	N/A	N/A
C	87510003	2	Welding	AWS A5.18	Y	N/A	DD/MM/YYYY	Validated per batch, see CofC's. Spec XYZ	Welding process specification

5.6.4

Accreditation by either Nadcap or by signatories to the ILAC is required for materials testing laboratories.



6 ETHICAL BUSINESS CONDUCT & COMPLIANCE

6.1 Policies and procedure requirements

Supplier shall have a code of conduct with supporting policies and procedures that aligns with the Raytheon Technologies Supplier Code of Conduct. This can be found here:

<https://www.rtx.com/suppliers>

Select the applicable language from the drop down box to retrieve the relevant document.

6.2 Anonymous reporting

Supplier shall have a mechanism within their business policies and procedures where employees, business partners and other subcontractors have access to anonymously report ethics and compliance issues.

7 ITAR COMPLIANCE

7.1 Overview

All Suppliers requiring access to International Traffic in Arms (ITAR) controlled technical data or hardware to carry out their tasks for the PW F135 / F-35 JSF programme have to be listed as a sub-licensee on the PW-PCS Manufacturing License Agreement (hereinafter referred to as the Agreement) PRIOR to receiving access to ITAR technical data or hardware. This includes any subcontractors, service providers the supplier intends to use or who may also have actual or potential access to the ITAR controlled technical data or hardware (e.g. IT providers, parent company etc.).

Below is a summary of Supplier obligations under the Agreement. This list is not exhaustive and is provided to facilitate Supplier compliance. It does not negate or override Supplier's compliance obligations

IF YOU ARE UNCERTAIN REGARDING YOUR OBLIGATIONS UNDER THE ITAR YOU SHOULD SEEK YOUR OWN INDEPENDENT LEGAL ADVICE.

7.2 Access to ITAR-controlled items

7.2.1

Supplier is responsible for restricting access to any ITAR-controlled items received under the Agreement to only those employees that are citizens of Supplier's country unless the Agreement authorises access to dual or foreign national employees, contractors, or other third parties. If you, the Supplier, are unsure which employees, contractors or other third parties are authorised to access the ITAR data or hardware, contact PCS immediately.



7.2.2

ITAR-controlled items include hardware, such as parts and tooling, technical data, such as drawings and specifications, and software received under the Agreement. It also includes any documents and/or hardware that you, the Supplier, create that are derived from and incorporate ITAR-controlled technical data provided by PCS and/or its sub-licensees.

7.2.3

“Access” includes potential access to technical data and visual access to hardware. A company or employee has “potential access” when no controls are in place to prevent them from viewing technical data or hardware. Accordingly, it is necessary to segregate and safeguard technical data – both in physical and electronic format – and prevent unauthorised parties from viewing hardware.

7.2.4

Distributors are controlled under section 4.1.3, However if for whatever reason access is required to ITAR data then Section 7 is invoked and the Distributor is required to be added to the Agreement.

7.2.5

ITAR-controlled technical data shall not be transferred by unencrypted email.

7.3 Obtaining authorisation

7.3.1

If Supplier’s business activities require that a third party has access to F135 ITAR-controlled items, Supplier must identify this entity to PCS so that if not currently authorised, PW may obtain authorisation for these entities from the U.S. Government. All third parties identified shall also separately complete a Non-Disclosure Agreement (NDA) and Sub-Licensee Questionnaire (SLQ). Templates for these documents shall be obtained from PCS. These documents will be used to apply for an amendment to the Agreement.

Completion of these documents alone does not constitute authorisation to receive/access ITAR material.

Examples of such third parties that Supplier should consider include the following:

- *Sub-tier suppliers and service providers;*
- *Employees of affiliated or parent companies;*
- *Information technology (“IT”) support companies such as computer network support companies;*
- *Vendors or service providers that work at Supplier’s facilities;*
- *Other persons that have access to Supplier’s facilities or computer network, such as contract employees.*

7.3.2

If Supplier has any “dual and third country national” (“DTCN”) employees or contract employees that require access to ITAR-controlled technical data or hardware, only those identified in the Sub-Licencee Questionnaire provided to PCS are authorised. Should the need



arise to include additional DTCN employees, PCS shall be notified of the relevant details, so that PW may obtain authorisation for these employees. For purposes of the ITAR, a “national” is someone who holds or has previously held citizenship of a country, or is a permanent resident of a country. In this instance, a “dual national” is a person with citizenship (current or previous) of the United Kingdom and another country (excluding the United States). A “third country national” is someone with citizenship (current or previous) or residence of a country other than the United States or the United Kingdom.

7.3.3

Third parties (e.g., sub-contractors, etc.) and DTCN employees must not have access to ITAR-controlled technical data or hardware unless they are authorised under the Agreement.

7.3.4

Should you, the Supplier, have any queries regarding your obligations under the Agreement or require further details, contact PCS immediately.

Information relating to the International Traffic in Arms Regulations (ITAR) may be obtained from the US Department of State website at:

<https://www.ecfr.gov/cgi-bin/text-idx?gp=&SID=70e390c181ea17f847fa696c47e3140a&mc=true&tpl=/ecfrbrowse/Title22/22CisubchapM.tpl>

