



Collins Aerospace

An **RTX** Business

Power & Controls
Global Operations

Delegated Quality Representative

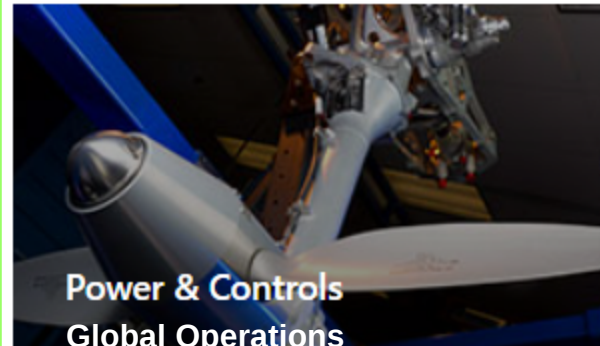
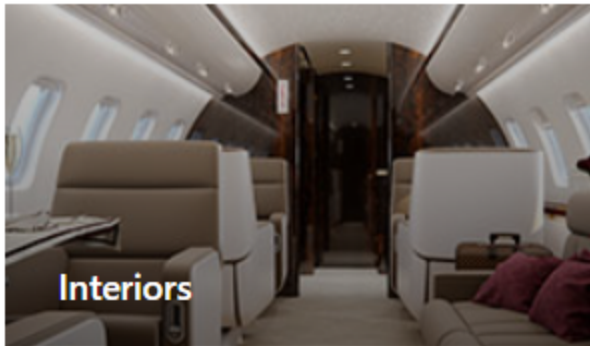
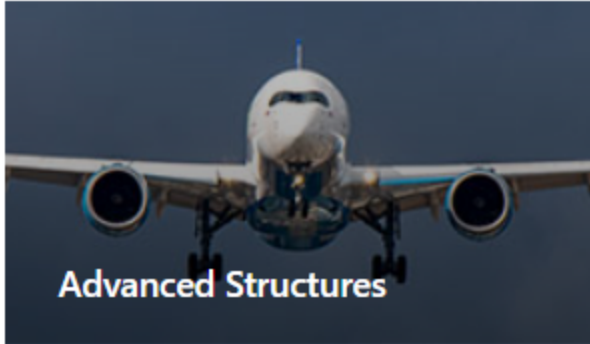
Review and Refresh # 5

**First Article Inspection (FAI) and
Part Marking (PIG Tool)**

February 12, 2025

COLLINS SBU_s

Collins Aerospace Strategic Business Units (SBUs)



P&C AND GOPS SUPPLIER QUALITY

Organization Chart



Josh Mackey, MA
Supplier Quality

Gina Ferrera, CA
Technical Projects



Christine Foley, CT
Associate Director
Compliance



Ryan Moran, CT
Senior Manager
Work Transfer



Craig Fiermonte, MA
Associate Director
Advanced Quality



Emily Fitzko, MI
Associate Director
Escape Management



Mike Page, CA
Associate Director
GOPs

Supplier Quality Assurance Rep (SQAR)

- Supplier's quality compliance focal
- Conduct audits – QMS, ASQR, flight safety
- Release flight safety hardware shipments
- Work with DQRs
- Conduct training at supplier

DQR / Source Inspection / COPS

- DQR approval and Rectifications
- CQAR Oversight
- Supplier Source Inspection Application / Help Desk
- Flight Safety and KPC
- Source inspection (iLots)
- Flight Safety / ProCert database (COPS)

Supplier Response Center Gatekeepers / Delegation owners for:

- Supplier Request for Information (SRI)
- V1 QNs (VMRR for Rome)
- Part Marking

FAI

- Supports Accenture team that reviews and approves supplier FAI submittals (as required by PO)
- Review and approve Casting FAIs

Processes / Work Transfer

- Owners for compliance processes
- Collins Managed Work transfer focals
- Supplier Managed Work transfer focals

Zero Defect Plan (ZDP)

- Regular, periodic engagement with their assigned suppliers to drive implementation of ZDP
- Execute both reactive and proactive elements of ZDP
- Review past escapes and corresponding RCCA for robustness and effectiveness
- Ensure robust Detection actions are in place to prevent future escapes
- Ensure read across complete for all actions to all applicable Collins PNs
- Lead manufacturing process reviews (MPRs)
- Review PFMEAs
- Drive process capability studies thru statistical FAIs

New Product Intro (NPI) / PPAP

- Certified PPAP MFP's (member focal points)
- Review and approve supplier submitted PPAP packages
- ASL and Sourcing board approvals
- Review and approve drawings

Supplier Quality Engineer (SQE)

- Lead Escape / RCCA investigations for their assigned suppliers
- Utilize QIMs to formally document Containment and RCCA from suppliers
- Determine validity and responsibility for suspect supplier issues - Disposition corresponding V2 QNs
- Collaborate with Operations Quality and Quality Clinics to identify and drive supplier improvements

Supplier Quality Engineer (SQE)

- Same responsibilities as P&C group
- Covers supplier issues for all Global Operations sites
 - Poland
 - Singapore
 - Puerto Rico
 - India

Special Process

- Subject matter experts for different types of special processes – coatings, heat treat, NDT
- Manage 80/85 reports – approved supplier list for special processes and castings
- Support P&C and GOPs as needed during investigations or improvement activity



Collins Aerospace

INTRODUCTIONS

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AGENDA

Introduction & Portal Navigation

- What is a DQR?
- Where are DQR requirements outlined?
- Portal Navigation: Forms & Documents, Help & Training
 - Supplier Alerts
 - DQR-related documents
 - Additional Training
 - Supplier Circulars
 - Help Desk/ SSI ticket
- Quick Links Overview
- Quick Links: Drawings & Specifications
- Quick Links: COPS Overview
- Quick Links: Quality Notification (QN)
- Quick Links: Supplier Request for Information (SRI)

Quick Links: Part Identification Generator (PIG)

Product Documentation Review

- Special Processes
 - 80/85 Report
 - 80/85 Report definitions
 - HSM17 Table 1 Applicability
- Documentation Review Requirements
 - Minimum Documentation for Source Inspection
 - Revision Review
 - FAIR Review
 - Part Marking
 - Work orders/ Inspection Reports
 - Certifications
 - Sampling/ Frozen Processes

Inspection Lots (iLot)

- Create Inspection Lot
- Record Results
- Usage Decision
- General Operations
 - Down Counting
 - Searching iLots
 - Cancelling iLots
 - Printing CofC
- Conclusion
 - Housekeeping
 - What's Next?

SUPPLIER SOURCE INSPECTION TRAINING

INTRODUCTION- WHAT IS A DQR?

- **A Delegated Quality Representative (DQR) is a supplier representative (employee) approved by Collins to perform Source Inspection and related duties. When a DQR is performing source inspection, they are doing so on behalf of Collins and shall act in the best interest of Collins. Reference HSM17.**
- DQR responsibilities include:
 - Performing Supplier Source Inspection (SSI), creation of iLot's and releasing product
 - Understanding and compliance with Collins Aerospace requirements
 - Example: Drawings, Specifications, Purchase Orders
 - Recognizing items that affect Collins products and processes
 - Example: Audits, Quality Notifications, Supplier Circulars
 - Navigation knowledge of the Supplier Portal
 - Reporting any (integrity) concerns to their Collins SQAR

DQR TRAINING LOCATION

The full DQR training video, PDF companion, and HSM17 are located on the Supplier Portal:

Help & Training-> Forms & Documents-> Supplier Portal Training Documents Page-> Power & Controls Standard Work-> DQR Certification (Supplier Source Inspection page)

<https://suppliers.utc.com/SPPortal/Pages/QualitySSI>

Supplier Source Inspection

Quality Supplier Source Inspection

Supplier Source Inspections ensure that all manufactured and assembled product meets or exceeds all purchase order, drawing, and specification requirements. Product shipped from suppliers goes directly to assembly within the Collins manufacturing cell or directly to the customer from the Collins facility. It is critical that the DQR, who acts as a representative of Collins during inspections, ensures product is inspected and meets or exceeds the standards.

DQR Process

Collins initiated the Designated Quality Representative (DQR) program in 2003. The DQR program enables a Collins-approved supplier representative to perform over inspection activities and release product shipments on behalf of Collins. Suppliers shall use the DQR process for all shipments of Collins product to Collins facilities or to drop ship product to Collins customers.

New DQRs:

New DQR candidates must submit a form 7 (DQR Candidate Application) to their Collins SQAR for approval. Upon acceptance, the DQR candidate can proceed with the additional requirements found in the "Steps to Become a DQR" link below. DQR Forms can be found in the "DQR Forms and Training" section below. If there are questions or uncertainty about your assigned SQAR please contact DQRCertification@collins.com

- [Steps To Become a DQR](#)

DQR Re-Certification:

Existing DQRs are required to recertify every three years, in alignment with their AS13001 expiration date. Failure to do so will result in permissions being removed. DQR re-certification requirements are outlined in the "DQR Re-certification Process" link below. Re-certifications packages should be sent to DQRCertification@collins.com; and copy your Collins SQAR on the submission. Questions can be sent to DQRCertification@collins.com and/or to your Collins SQAR.

- [DQR Re-certification Process](#)

DQR Email Address Changes/ Removals:

Please notify your Collins SQAR and Collins Supplier Quality at DQRCertification@collins.com of any DQR changes in email addresses or if you will no longer be performing DQR responsibilities.

DQR Forms and Training:

- [Form 7 DQR Candidate Application](#)
- [Form 8 DQR Letter of Agreement \(LOA\)](#)
- [DQR Training Video](#)
- [DQR Training \(PDF only\)](#)
- [DQR Collins Quiz](#)
- [DQR Collins Quiz QR Code](#)
- [Optional Inspection Lot Checklist for DQRs and CQARs](#)

SSI Training

SSI Training is found on the new Supplier Portal Training page. You can access the page [here](#).

Supplier Circulars

Supplier circulars cover items of interest, interpretation of drawings and specifications as well as clarification of procedures. In addition, they bring attention to examples of problems encountered by suppliers and present their solutions for possible application to other suppliers. Click the title to view the full library of circulars.

Quality Forms and Documents

- o [HSM17 \(Supplier Quality Requirements\)](#)
 - [Master DQR Checklist Rev J](#)
 - [Digital Product Definition Training](#)
 - [HSF-0302.04 \(Product and Process Validation Statistical Control Toolbox\)](#)
 - [Supplier to Supplier Shipment Instructions](#)
 - [COL-FRM-34 \(Final Product Review and Acceptance Record\)](#)
- o [HSM18 \(Boeing Drop Ship\)](#)
- o [HSM19 \(Counterfeit Avoidance and Traceability\)](#)
- o [HSM236 \(FAI Requirements\)](#)
 - [AS9102 Rev C Forms](#)
 - [QC-1700.00 FAI Report Review Checklist](#)
- o [HSC16199 \(Critical to Quality Characteristics\)](#)
 - [KPC Management Form 0996](#)
 - [Supplier Self-Selected KPC Summary Sheet HSF 5138](#)
 - [Safety Part Training \(Flight Safety\)](#)
 - [Sub-tier Safety Part Training](#)
 - [CTQ Non-Safety Training](#)
- o [CEP100 \(Configuration Management Requirements\)](#)
- o [Engineering Changes:](#)
 - [EC Disposition Codes](#)
 - [HSF-2513.91 \(Supplier/Subcontractor Engineering Change Request\)](#)
 - [Engineering Change Justification Form](#)
- o [MISH List](#)
- o [COL-FRM-0087 \(Quality Control Action Requirements\)](#)
- o [QN Template](#)
- o [HSF5105 \(Frozen Process-Non HSC16199 Approval Form\)](#)

Alternate Specification References

- o [69100-1: Alternate Parts Listing](#)
- o [69100-2: Alternate Materials Listing](#)
- o [69100-3: Alternate Processes Listing](#)
- o [69100-4: Vendor/Name Substitutions](#)
- o [PN02.01-06: Alternate Specifications List](#)

HOUSE KEEPING

FRIENDLY REMINDER

- As a reminder, please do not share specific part numbers or company sensitive information during this call.
- If you have a question or issue that cannot be generic, we kindly ask that you save your question/issue and reach out to Collins Quality separately so that we can address.

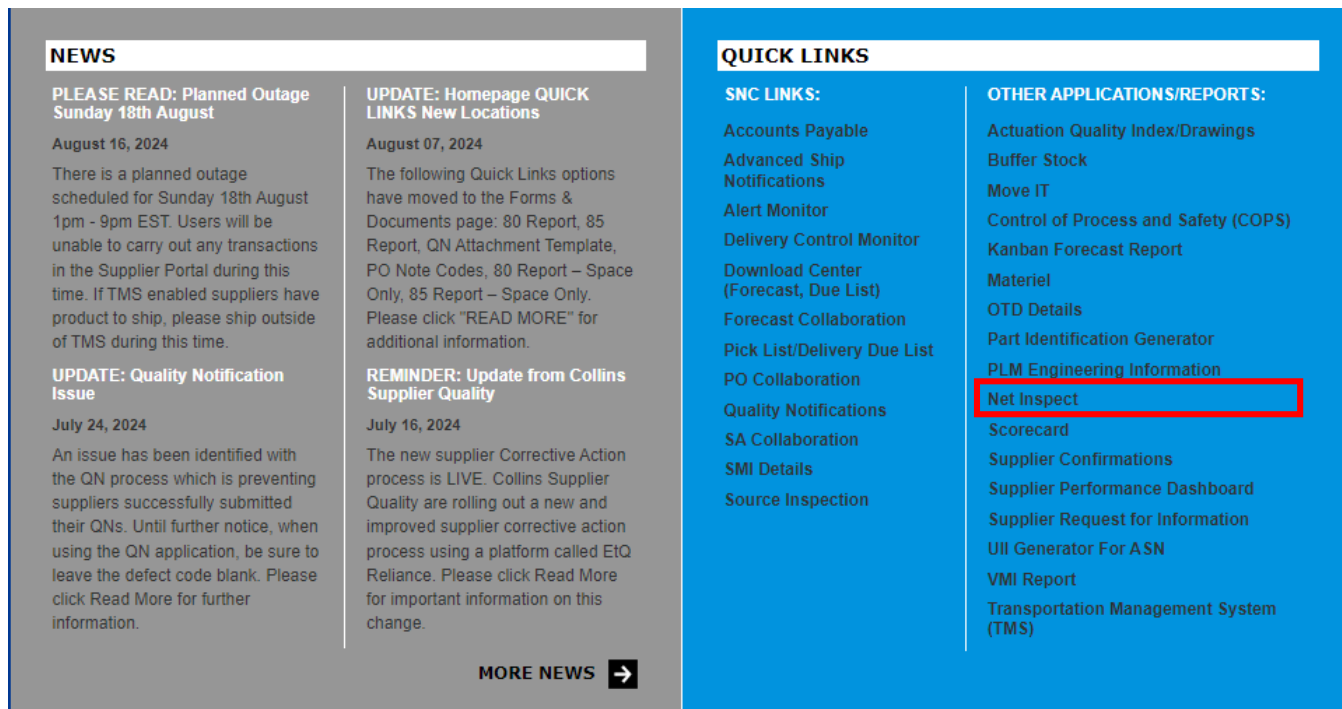
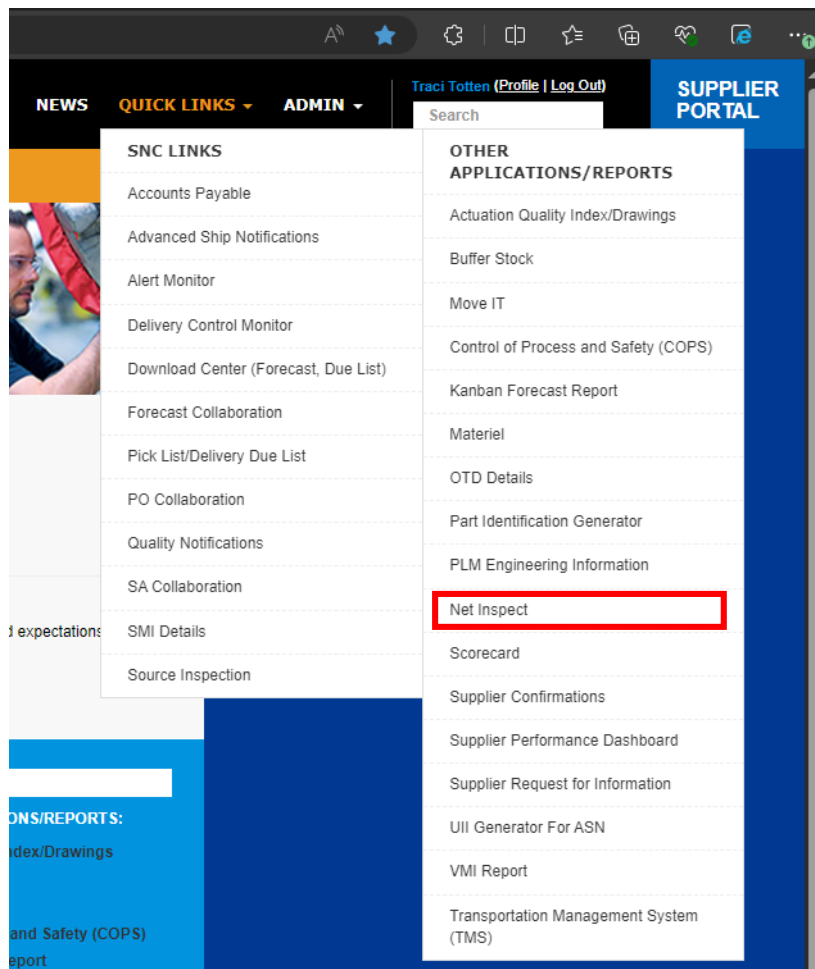
SUPPLIER SOURCE INSPECTION TRAINING

Product Documentation Review

First Article Inspection (FAI)

SUPPLIER SOURCE INSPECTION TRAINING

PORTAL NAVIGATION – QUICK LINK – NET INSPECT (FAI)



SUPPLIER SOURCE INSPECTION TRAINING

ADDITIONAL TRAINING DOCUMENTS

- *Help and Training->Forms and Documents-> Supplier Portal Training Documents Page-> Power and Controls Standard Work*



Forms and Documents

Supplier Training
Supplier Portal Training Documents Page



Training Documents

Supplier Portal Training Documents

Power & Controls Standard Work

- [DQR Quiz](#)
- [DQR Quiz QR Code](#)
- [DQR Training \(PDF only\)](#)
- [DQR Training Video](#)
- [DQR Certification](#)
- [How Do I Submit a Quality Notification?](#)
- [Create and Review Quality Notifications](#)
- [What is SRI \(Supplier Request for Information\)?](#)
- [Supplier Request for Information \(SRI\)](#)
- [Part Marking Approval Process and Reference Guide \(PIG\)](#)
- [Supplier Source Inspection Lot](#)
- [Supplier Net Inspect Guide](#)
- [Net Inspect Global Trade Guidelines for Suppliers](#)
- [Optional Inspection Lot Checklist for DQRs and CQARs](#)

SUPPLIER SOURCE INSPECTION TRAINING

PRODUCT DOCUMENT REVIEW-FAI

- *Help & Training->Forms & Documents->Supplier Portal Training Documents-> Power & Controls Standard Work-> DQR Certification*
- FAI requirements are outlined in HSM236. The inspection plan for an FAI iLot is configured per HSM236. DQRs should review this specification in detail.

Quality Forms and Documents

- [HSM17](#) (Supplier Quality Requirements)
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 - [HSF-2513.91](#) (Supplier/Subcontractor Engineering Change Request)
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- [69100-3: Alternate Processes Listing](#)
- [69100-4: Vendor/Name Substitutions](#)
- [PN02.01-06: Alternate Specifications List](#)

SUPPLIER SOURCE INSPECTION TRAINING

PRODUCT DOCUMENT REVIEW- REQUIREMENTS

- HSM236 determines when an FAI is required

2.1.1 FULL FAI

A full FAI is required when any of the following occur:

- a) New part number unless waived by Collins Aerospace Supplier Quality.
- b) New supplier.
- c) New facility.
- d) Two-year lapse in production (this lapse is from the completion of last production operation to the actual restart of production).
- e) When contractually directed.

2.1.2 PARTIAL OR DELTA FAI

A Partial or Delta FAI addresses differences between the current configuration and prior configurations. A partial or delta FAI can be performed unless otherwise requested by Collins Aerospace to complete a full FAI. If the previous FAI is no longer available, a full FAI must be performed.

A partial/delta FAI is required when any of the following occur:

- a) Change in the design affecting fit, form or function.
- b) Change in part revision (Drawing Change affecting the FAI part number)
- c) Change in manufacturing source(s), process(es), inspection method(s), location of manufacture (if only part of the manufacturing is affected, a partial FAI can be completed, otherwise a full FAI is required), tooling or materials, that can potentially affect fit, form, or function.
- d) Change in numerical control program or translation to another media that can potentially affect fit, form, or function.
- e) Natural or man-made event, adversely affecting the manufacturing process.
- f) When Corrective Action is implemented that affects a previously incomplete FAIR (i.e., QN or Deviation on previous FAIR).
- g) When Collins Aerospace drawing refers to “make from similar part” if FAI requirements are met on the similar part.
- h) When contractually directed.

Note: For tabulated or table drawings (drawings that define multiple parts with the same base part number), when the drawing is updated, only the part numbers affected by the change need to have a partial FAI completed.

SUPPLIER SOURCE INSPECTION TRAINING

PRODUCT DOCUMENT REVIEW-FAI



Knowledge of HSM236 is critical in fulfilling DQR responsibilities. Supplier Circular 226 outlines major changes in Revision E which include:

- Updated reference ASQR-01 to COL-ASQR-PRO-0003
- Updated Net-Inspect information on customer and division submission
- All FAI submission effectivity date Nov 1st, 2024, through Net-Inspect.
- Updated Material traceability per HSM19 requirements
- Updated Casting and forging section
- Added Brokered part section
- Updated AS9102 Rev C Forms 1, 2, & 3

SUPPLIER SOURCE INSPECTION TRAINING

PRODUCT DOCUMENT REVIEW-FAI

- Supplier Circular 226 provides additional clarification as to what changed with revision E of HSM236.

Supplier Circulars

Supplier circulars cover items of interest, interpretation of drawings and specifications as well as clarification of procedures. In addition, they bring attention to examples of problems encountered by suppliers and present their solutions for possible application to other suppliers. Click the title to view the full library of circulars.

Most Recent Communication

. June 10, 2024:Supplier Circular 226 Release of **HSM236 Rev E FAI Requirements**



Collins Aerospace

Windsor Locks, CT 06096

SUPPLIER CIRCULAR

Items of Interest 226

June 7th, 2024

NOTE: This Supplier Circular has been generated for all suppliers that provide products & services to Collins Aerospace Power and Controls and Global Operations Business Unit (Legacy Hamilton Sundstrand, Air Management Systems, Electric Systems & Engine Control Systems).

Release of HSM236 Rev E FAI Requirements

This supplier advisory is to inform all suppliers of the release of HSM236 Rev E, effective August 01, 2024. This is in alignment with AS9102 Rev C released on June 23rd, 2023. HSM236 can be found on the Supplier Portal at the following location:

SUPPLIER SOURCE INSPECTION TRAINING

PRODUCT DOCUMENT REVIEW-REQUIREMENTS

The list below contains the minimum documentation required for Source Inspection (iLot):

- Latest revision of the purchase order or scheduling agreement
- Current revision of the Collins drawing and sub-assemblies to include items on the Bill of Material (BOM)
- Latest revision of associated drawing specifications
- Material Certifications with full traceability to the source (not just the distributor)
- Special Process Certifications
- Dimensional Inspection reports
- Completed testing or ATP when applicable
- Completed Work Order including sub-assemblies when applicable
- **Current First Article Inspection Report**
- Key Characteristic/Flight Safety Data in COPS when applicable
- Frozen Process approval when applicable
- Validate current PPAP Form 1 when specified by the PO

SUPPLIER SOURCE INSPECTION TRAINING

PRODUCT DOCUMENT REVIEW-FAI

FAIR Review

- Verify First Article Inspection Report (FAIR) is completed (reference AS9102, HSM236, and the PO).
- Verify the FAIR is properly signed and dated by the preparer and approver.
- Validate the FAI Form 1 has been signed by Collins.
 - Note: DQRs do not have customer signature authority. DQRs are not authorized to ship product prior to FAIR approval by Collins
- For AFAI iLots, the DQR shall attach a copy of the FAI Form 1 to the iLot.
 - Note: AFAI iLots are triggered by the system when a FAI is required to be validated. The system calculates this based on the Collins part number, part revision, vendor code, Collins plant code (where parts are shipping to), and 2-year lapse in shipment (from last I-lot created within that Collins plant code). When any of these change, a AFAI iLot is required. If a valid FAI is already on file at the part revision shipping and signed by Collins, this can be used, and the over-inspection can be performed by a 2nd DQR to complete the shipment.
- For all iLots, the approval date of the FAI shall be added to the iLot quality notes.

SUPPLIER SOURCE INSPECTION TRAINING

PRODUCT DOCUMENT REVIEW-FAI

- Your Collins purchase order or scheduling agreement might call for FAI verification
- The iLot record results would state "Verify FAI Is Complete"
- The iLot usage decision for both the M code and F code iLots would show "Accept and Complete FAI" or "Fail".
- When any of the above is seen, the part number will require an initial I-lot (M code) and 2nd over inspection (F code) with reference to the M code (must be performed by two different DQRs at the supplier).

Target QM:Quality System Approval Required
Inspection: FAI Required - FAI Duration Lapse

30 ☐ ☒ FAIREQD 2710 1 [VERIFY FAI IS COMPLETE](#) 63

VERIFY FAI IS COMPLETE
Supplier Source Inspection Guidance
1) Ensure FAI has been completed and signed by either the Supplier or approved by the UTAS FAI Team
2) Verify latest approved FAIR is on file at Supplier.
3) Ensure part marking has been approved as part of the FAI
4) Attach Form 1 in the attachment option in the iLot
Reference HSM17 and HSM236 for more details»

Search: UD Code ☐ X

UD C...	UD Code Gr...	Description
AFAI	UTAS	Accept and Complete FAI
FAIL	UTAS	Fail

SUPPLIER SOURCE INSPECTION TRAINING

PRODUCT DOCUMENT REVIEW-FAI

- Supplier Circular 220 provides additional clarification as to when 2nd DQR over-inspection is required.

Supplier Circulars

Supplier circulars cover items of interest, interpretation of drawings and specifications as well as clarification of procedures. In addition, they bring attention to examples of problems encountered by suppliers and present their solutions for possible application to other suppliers. Click the title to view the full library of circulars.

Supplier Circulars Archive

- January 22, 2024: Supplier Circular [2nd DQR Inspection Requirements](#)



Windsor Locks, CT 06096

SUPPLIER CIRCULAR

Items of Interest 220

January 22, 2024

NOTE: This Supplier Circular has been generated for all suppliers that provide products & services to Collins Aerospace Power and Controls and Global Operations Business Unit (Legacy Hamilton Sundstrand, Air Management Systems, Electric Systems & Engine Control Systems).

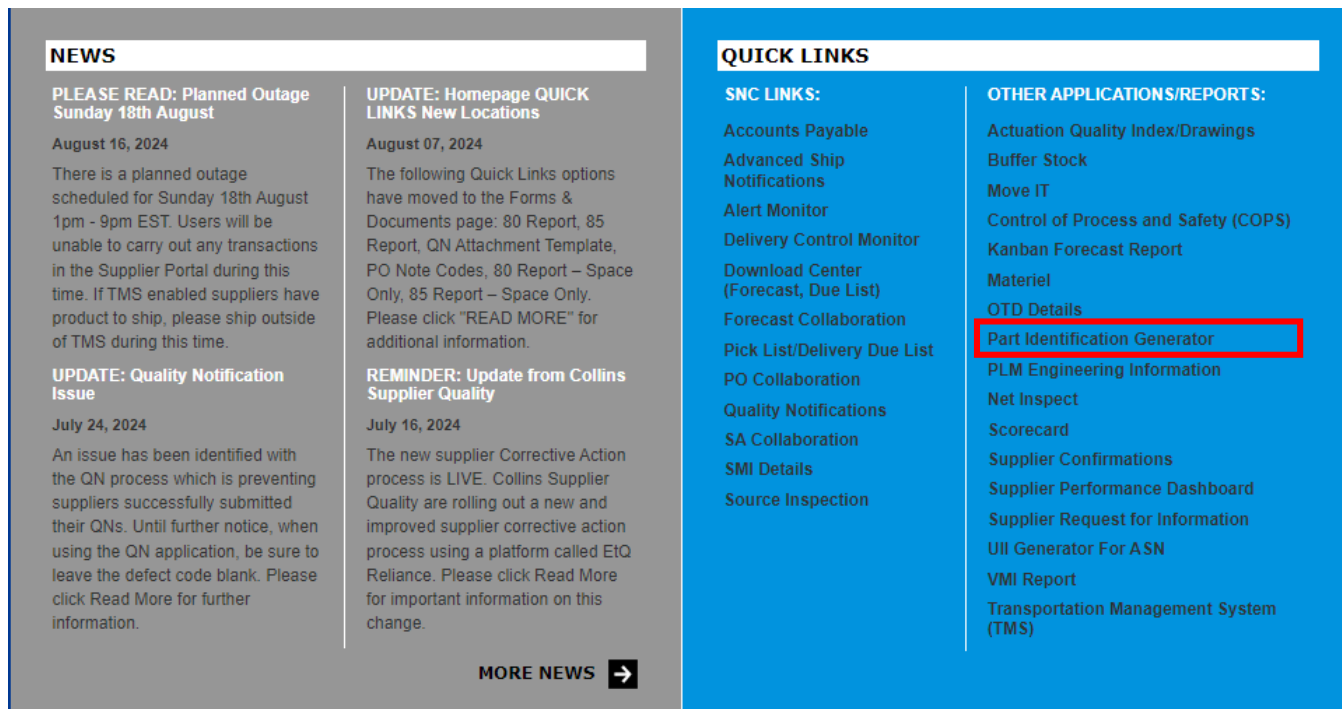
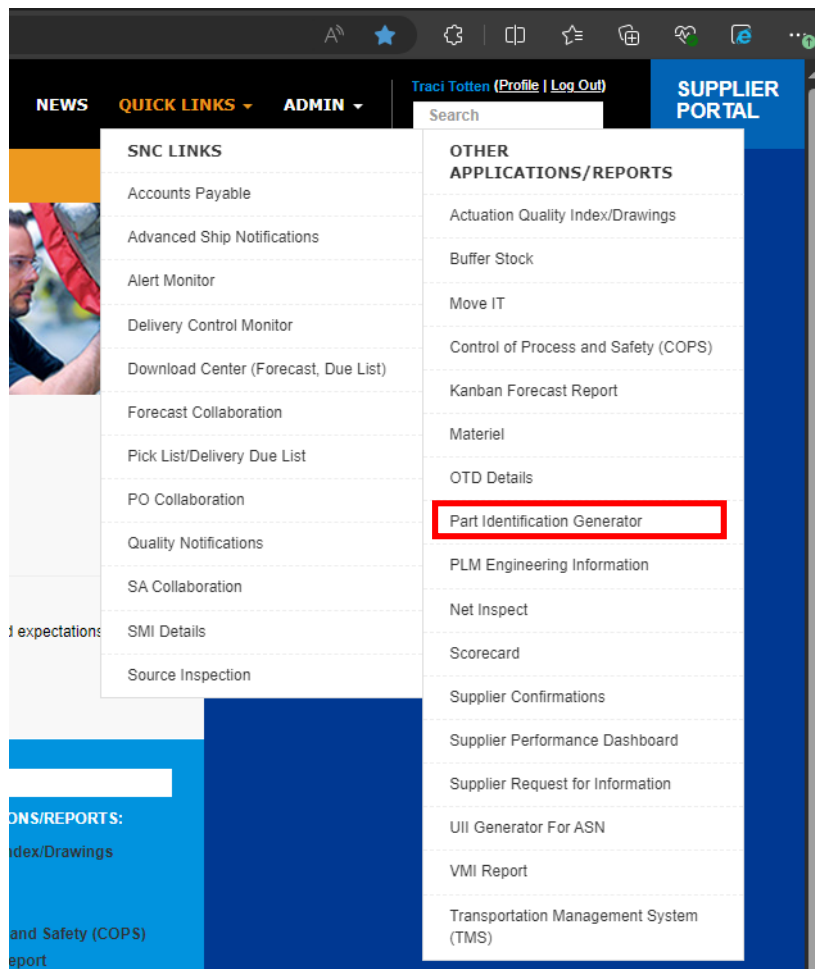
2nd DQR Inspection Requirement for First Article Inspection Report Review

SUPPLIER SOURCE INSPECTION TRAINING

Part Marking

SUPPLIER SOURCE INSPECTION TRAINING

PORTAL NAVIGATION – QUICK LINK – PART MARKING TOOL



SUPPLIER SOURCE INSPECTION TRAINING

ADDITIONAL TRAINING DOCUMENTS

- *Help and Training->Forms and Documents-> Supplier Portal Training Documents Page-> Power and Controls Standard Work*



Forms and Documents

Supplier Training
Supplier Portal Training Documents Page



Training Documents

Supplier Portal Training Documents

Power & Controls Standard Work

- [DQR Quiz](#)
- [DQR Quiz QR Code](#)
- [DQR Training \(PDF only\)](#)
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- [Supplier Net Inspect Guide](#)
- [Net Inspect Global Trade Guidelines for Suppliers](#)
- [Optional Inspection Lot Checklist for DQRs and CQARs](#)

SUPPLIER SOURCE INSPECTION TRAINING

PRODUCT DOCUMENT REVIEW-PART MARKING

- **Supplier Portal > Quick Links > Part Identification Generator**
- What a supplier will find there:
 - –Approval process and reference guide
 - –Checklists for HS333, PN17.50, ESR1386, NDT quick reference guide , MIL-STD-130 for source controlled items
 - –Link to the PIG TOOL
 - –Collins contact information (phone and email)
- What is required in order for the PIG to return a correct replica:
 - –A Collins PO for the PN being reviewed
 - –A marking requirement for HS333, PN17.50, ESR 1386 , or MIL-STD-130 if drawing is a supplier designed item
 - –PROPER interpretation of the drawing requirements
 - –A link to request review of the replica created by the PIG TOOL to GPHSPARTMARKING@collins.com
- What won't you find
 - –2D matrix marking information (look for the UID generator on the supplier portal)
 - –Specific serialization formats (i.e. HS9138 / HS10461)

SUPPLIER SOURCE INSPECTION TRAINING

PRODUCT DOCUMENT REVIEW-PART MARKING

- **Part Marking Approval Process**

- Collins has a process for our suppliers to send a replica or work instructions before parts are marked to our process experts to review and approve marking to ensure compliance drawing requirements and eliminate opportunities for error.

- **References**

- •HSM17 – the “oval acceptance stamp” required on all 73030 parts
- •HSM17 – how to determine what supplier code to put on the art inside the oval stamp
- •HS333 – The marking spec. for drawings with the cage code 73030 in the title block (Windsor Locks)
- •PN17.50 – The marking spec. for drawings with the cage code 99167 in the title block (Rockford)
- •MIL-STD-130 – Many Source Controlled Items, military parts, and 2D matrix marking
- •Older specs – You may see: DCC198/ESR 1386/PT23TF3/ES9-6
- •HS 15314 – 2D matrix marking
- •HS9138 – Serialization

SUPPLIER SOURCE INSPECTION TRAINING

PRODUCT DOCUMENT REVIEW-PART MARKING

- Verify part marking is a 100% verification to drawing, specification, and PO requirements. When a 2D matrix is specified, the company will provide a verification/validation report. FAIRs approved by Collins should have a part marking team approval.
- When drawings specify a 73030 cage code, the DQR will verify an oval stamp with the last 3 digits of the supplier's primary vendor code on the part or tag per HSM17.

SUPPLIER SOURCE INSPECTION TRAINING

PRODUCT DOCUMENT REVIEW-PART MARKING

ITEMS WE WOULD CATCH

- Compliance to marking spec
- Format
- Content
- Serialization format
- NDT stamps
- Oval stamp
- Country of Origin
- Location
- 2D Matrix report review
- Part Revision

ITEMS WE WOULDN'T CATCH

- Wrong marking location (typically don't see marking of the parts but replica's)
- Duplicate SN's
- Marking method
- Typos when applied to the part
- Missing information when applied to the part

NOTE: A photo of marked parts serves as guide to ensure that approved work instructions were followed. Human error (fat-fingering, miss programming machine marking, or SN overruns would be “caught” when the photo and the work instructions are compared to each other.

SUPPLIER SOURCE INSPECTION TRAINING

REMINDER

- Part marking approval team email: **gphspartmarking@collins.com**
- FAIs/ HSM236 contact for any questions/concerns email: **faimain@collins.com**

QUESTIONS?

BACKUP