

## QRS-108 Supplier Quality Plans



 **LEONARDO**  
HELICOPTERS

# QRS-108

## Supplier Quality Plans

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### CHANGES LOG

Issue	Approval Date	Main changes	Interested Paragraphs
00	April 2015	First Issue	All
01	June 2018	Document completely rewritten and reformatted	All
02	June 2019	QP Annexes	7.1; 7.2
		Risk mitigation requirements for Transfer Plans	7.3

### APPLICABLE DOCUMENTS

This document *shall* be applied together with the main document (QRS-01 Quality Requirements for Suppliers) and with the other applicable modules

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## 1 Purpose

The Supplier is required, as specified in paragraph 5, to detail in a Quality Assurance Plan (QP), exactly how Leonardo Helicopters (LH) contracted requirements are achieved via their Quality Management System (QMS), against the requirements of QRS-01 (Leonardo Helicopters Quality Requirements for Suppliers).

The primary purpose of the QP is to identify any gaps between a Supplier's QMS and LH requirements specified in QRS-01, and/or the contract itself. The QP *shall* list in detail and explain any additional QA processes added, amended or modified to meet LH's Quality requirements.

The secondary purpose of the QP is to document how the Supplier intends to fulfill LH Contractual requirements, as detailed in the QRS01 and associated modules, such as Organizational/Project family tree, Design and Development activities, Customer Internal Audit plan, Customer specific Key Performance Indicators etc.

## 2 Applicability

This document is applicable to new or existing Suppliers.

The complexity of the QP *will* be determined by the QRS modules applicable to the Supplier as described in Table 1 of QRS-01 (Quality Requirements for Suppliers).

Once approved by LH, the QP *shall* be regularly reviewed and kept updated by the Supplier to ensure it reflects their QMS and meets the contracted requirements.

LH takes right to ask copy of any QP that a Supplier has in place with its suppliers.

## 3 Effective date

Issue date

## 4 Acronyms, definitions and abbreviations

### 4.1 Acronyms and definitions

DAL	Design Assurance Level
DO	Design Organization
HDO	Head of Design Organization
HW	Hardware
IPO	Intermediate Production Organisation
LH	Leonardo Helicopters
LOP	Life of Product
PO	Production Organization
QA	Quality Assurance
QMS	Quality Management System
QP	Quality Plan (also known as Quality Assurance Plan)

QRS	Quality Requirements for Suppliers
<b>SADD</b>	<b>Statement of Approved Design Data</b>
SCD	Source Control Drawing
SQA	Supplier Quality Assurance
SW	Software

See QRS-01 for classification and definition of LH suppliers.

## 5 Requirements

A Quality Plan is requested from Suppliers for the following:

- To document any deviations and align their QMS to LH Requirements (QRS-01 and all related Procedures),
- For *Manufacturers* who design and manufacture new articles<sup>1</sup>, software or complex hardware under development, against **LH** Procurement Specification/SCD,
- To support an DO/(IPO)/PO Arrangement with LH and/or a License Agreement, as per applicable Certification
- For supplier activities performed inside the LH facilities and / or acting under LH procedures (testing, logistic services etc.),
- To permanently or temporarily transfer work from one location to another,
- For *Subcontractors* to manufacture critical articles against LH design data without holding a Certification under EASA Part 21 Section A Subpart G or equivalent (civil and military),
- Supplier QP specifically required by Programme or Customer

LH reserves the right to request a dedicated Quality Plan, in any situation, when considered necessary.

### Note (LH UK Military contracts only):

In some cases, it is possible that a *LH UK Military Manufacturer* may be subject to a 'Statement of Work' from LH Engineering. The content of such a Statement of Work may include Technical Requirements, Project Management Methods, Design Management, Qualification Planning and Reporting as well as Quality Requirements. It is recognized that a Statement of Work can fulfill the purpose of a Quality Plan to a greater or lesser extent, as determined by SQA.

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<sup>1</sup> The QP shall be updated in case of Design/Production changes.

## 6 Transmission and Approval of Quality Plans

The Supplier *shall* submit the QP to the LH focal point indicated in the table below, for QP type. The supplier *will* receive back the QP approved by LH.

QP Type	Use	LH focal point for QP	LH Approver
Supplier alignment to QRS-01	To be used in case a Supplier has a QMS certification below QRS-01 Requirements or in case of deviation request from QRS-01	SQA	Head of Quality LH
Manufacturers against LH Procurement Specifications/SCD	Design and manufacture of new parts or design changes to already approved parts.	Engineering Focal Point or Chief Project <sup>2</sup>	Head of Quality LH
	Development of Software or Complex Hardware <sup>3</sup>	Engineering Focal Point or Chief Project	LH SW and Electronic Equipment Monitoring Quality
	Design/production changes to already qualified (consolidated) parts	Quality Control	Quality Control
DO/(IPO)/PO arrangement with LH	DO/PO arrangement	SQA	Head of Quality LH
	IPO/PO arrangement	Quality Control	LH Plant Manager
Supplier activities inside LH facilities or under LH procedures	For supplier activities performed inside the LH facilities and / or acting under LH procedures (testing, logistic services etc.)	Quality Control or Laboratory (for testing and calibration activities)	LH Production Plant
Transfer plan	To permanently or temporarily transfer work from one location to another	SQA	Head of Quality LH
Subcontractors	For subcontractors to manufacture critical articles against LH design data without holding a Certification under EASA Part 21 Section A Subpart G or equivalent (civil and military)	Quality Control	LH Quality Control
Programme/Customer Supplier QP	Supplier QP specifically required by Programme or Customer	SQA	Head of Quality LH

<sup>2</sup> Any exceptions about availability and updating of this type of QPs *shall* be agreed with LH Engineering focal point/Chief Project.

<sup>3</sup> Only Complex Hardware DAL A or B. For DAL C or D, the requirements shall be included in the general QP

## 7 QP Contents

The contents for some of the QP categories are specified below. The supplier is requested to maintain the chapter numbering below and mark "N/A" if the section is not applicable. All the procedures *shall* comply with QRS-01 and applicable modules.

### 7.1 QP for Manufacturers who design and manufacture articles, software or complex hardware, against LH Procurement Specifications/SCD (new development and in case of design/production changes to consolidated articles)

- **Chapter 1:** Scope and management of the quality plan:
  - *Contractor (Supplier name and address)*
  - *Applicability (list of all the P/Ns covered by the Quality Plan: **LH** P/N, Supplier P/N, Description, Procurement Spec/SCD, Sub-tier P/Ns if any). Remark: any Software and Complex Electronic Hardware installed on Articles shall be clearly declared and identified*
  - *QP approval and update: describe how the Supplier intends to manage the changes to QP and how to submit to LH approval*
- **Chapter 2:** List of acronyms, definitions, reference documents used in the QP
- **Chapter 3:** Applicable Documents, including:
  - *Contractual Documents (such as Contract, SoW)*
  - *Applicable Regulations (EASA, FAA, TCCA, AQAP, etc.)*
  - ***LH** Documents (Technical Specification, SCD)*
  - *List of Supplier applicable documentation defined in the QP (Quality Manual, Design Manual, internal procedures)*
  - *Specific applicable **LH** Program documents*
  - *Supplier Approvals held (Civil Certifications, Military Qualifications, ISO/EN/AS series etc.)*
  - *Any exclusions for Design activities in charge to **LH***
  - *List of Sub-tier QP involved in the activities, if any*
- **Chapter 4:** Organization and responsibilities, including:

*Program Manager, Technical Director, Manufacturing Engineering Manager, Production Accountable Manager, Certifying Staff, Quality Manager, Quality Control Manager, Production Manager. Include Organizational charts*

*The Supplier shall also identify the internal procedures for minimum requirements for personnel (education, experience, skills), training and approval, especially for those people involved with design activities for **LH** programs.*
- **Chapter 5 - Planning**

*Plan for development activities until final qualification. The supplier shall describe their capacity to address the requested scope of work. This might be done by providing the following:*

  - *Project planning*
  - *Work breakdown structure*
  - *Resource breakdown structure*
  - *Risk Assessment*

- **Chapter 6 - Focal Points:**
  - *Supplier Contacts (Focal Points)*
  - *LH Focal Points*
- **Chapter 7 - Documents Quality Requirements:**
  - *Description of how the documentation is issued, approved, changed and managed.*
  - *Record Keeping defining timing, location and applicability*
- **Chapter 8 - DO-PO Arrangement and/or License Agreement as per Applicable Certification:**
  - *Description of how the documentation is being exchanged between Supplier and LH (the Supplier procedures need to be approved by the Supplier's Engineering organization)*
  - *Changes affecting the Arrangement/Agreement.*

*Remarks: the Supplier shall inform LH of any changes that may affect the applicability of the DO-PO Arrangement; the Supplier shall also inform LH when the PO certification is suspended or affected by Authorities level 1 finding*
- **Chapter 9 - Configuration Management:**
  - *Change Classification and LH involvement: describe how the Supplier intends to manage the design changes in accordance with QRS-115 and how LH will be involved in the approval.*
- **Chapter 10 - Design and Development (Design planning supplier procedures):**
  - *Design Control: define the analysis method used to design parts*
  - *Basic data and requirements of design: managing of HW and SW requirements*
  - *Software Quality Assurance: indicate the Supplier SW quality assurance plan*
  - *System Equipment List: list the preliminary list of equipment and items agreed at the CDR*
  - *Preliminary Design Data Set*
  - *Critical Part: indicate how the supplier is intended to manage critical and hazardous parts*
  - *Forging and Casting Design Requirements: how the supplier is intended to manage forging and casting parts*
  - *Special Processes: how the supplier is intended to manage LH special Processes*
  - *Design Review indicate the procedure the supplier follows to perform PDR, CDR, QR, SSR, TRR, DR and FQR/SCR as applicable*
  - *Design Verification and Validation describing how the supplier is intended to verify and validate design data*
- **Chapter 11 - Activities and Documentation for Qualification of Parts**
  - *Functional Qualification: documentation to be issued to provide evidence of design/validation/qualification results (QP, AR, SR, QTP, QTR, PSAC, SVP, STD, STR, SAS, VDD, DDP)*
  - *Manufacturing qualification the documentation to be issued to provide evidence of manufacturing qualification is FAI, to be performed in accordance with QRS-101*
  - *Specific LH Program qualification requirements: description of how the supplier intends to manage the process and supplier procedures*



- **Chapter 12** - Inspection and Testing: An ATP is expected to be prepared and approved by LH.
- **Chapter 13** - Components designed by Sub-tiers:  
*The supplier shall indicate how he is flowing down LH requirements to its suppliers. The supplier shall indicate the list of all of its suppliers (sub-tiers) involved in design activity. Remark: any sub-tier QPs shall be made available to LH upon request.*
- **Chapter 14** - Articles identification and traceability:  
*The Articles will be identified, traced and delivered according to the requirements stated in applicable Drawings, Applicable Technical Specifications, Applicable QRS-series procedures. The supplies shall report on each deliverable unit:*
  - *Supplier name*
  - *Supplier PN*
  - *Supplier SN*
  - *Modification Status*
  - *Main “sub-tiers”*
  - *LH P/N*
  - *Equipment/Part description*
  - *Manufacturing date*
  - *Manufacturing quality stamp*
  - *Identification code of applicable concession/deviation permit*
- **Chapter 15** - Supplier DDS Approval  
*Describe how DDS are submitted to LH for approval at the end of a CDR; how any subsequent changes are submitted to LH for approvals; how the supplier interacts with LH for being aware of Design Data approval*
- **Chapter 16** – Control on Non-conforming Articles:  
*Describe how the supplier intends to manage the non-conforming articles in accordance with QRS-107 requirements, including: Quality Notifications, Concessions, Escapes/Quality Alerts. Describe how the Supplier intends to manage and submit any Service Bulletins to LH.*  
*Describe how the supplier flows-down to Sub-tiers the management of Non-conforming articles and Escapes*
- **Chapter 17** - Delivery Documentation:  
*How the supplier manages the delivery documentation in accordance QRS-01 requirements.*
- **Chapter 18** - Maintenance Manuals:  
*How the supplier manages instructions for Component Maintenance Manual in accordance with QRS-122 requirements and interactions with LH*
- **Chapter 19** - Continued Airworthiness:  
*The supplier shall explain how he is going to manage any design or manufacturing defect in order to ensure to inform LH within **24 hours** for all types of defects. The supplier will undertake the appropriate corrective actions after LH indications.*
- **Chapter 20** - Corrective and Preventive Actions:  
*Description of how corrective actions are managed and applied procedures*
- **Chapter 21** - Quality Audits:

*How the Supplier manages the Quality audits. Remark: the supplier shall monitor **LH** requirements by planning and executing internal and external (Sub-tier) surveillance activity. This surveillance should take in to account risk-based criteria that shall be described in this section*

- **Chapter 22** - Design Process analysis and improvement:  
*the supplier shall plan and implement monitoring, measurement, analysis and improvement methods particularly related to the design process.*
- **Chapter 23** - Access:  
*How access is granted to LH representatives and Authorities according to QRS-01. Remark: include in the QP this clause: “Leonardo Helicopters has access to Supplier that will permit the access to Leonardo Helicopters representatives, **LH** Customers, Civil and/or Military Authorities accompanied by LH personnel, furthermore, the supplier shall guarantee the access to Subcontractor facilities”.*
- **Chapter 24** - Special Processes (the requirements of QRS-104 shall be applied):  
*Indicate and describe the Supplier Control System and related Procedures in place for Special Process Qualification and Control.*  
*Include the list of Special Processes performed per National/International Specifications, Supplier Proprietary Specifications, LH Process Specifications, with detail of the LH articles where these Special Processes are applied.*  
*Specify the Subcontracted Special Processes and sources.*
- **Chapter 25** – Control of Counterfeits Articles  
*Describe how the Supplier manages counterfeit Articles prevention and procedures in place, according to QRS-01*
- **Chapter 26** – Purchasing process  
*Describe how the procurement process is managed; Supplier approval and control; how the LH requirements are flowed-down to Sub-tiers and how the purchased Articles are controlled*
- **Chapter 27** – Production  
*Describe how the Supplier manages the production processes and LH involvement including:*
  - *Production documents issuance, change and approval*
  - *Product identification, part marking and traceability*
  - *Tools and instruments management*
  - *Management of Critical parts*
  - *Inspection and Testing*
  - *Production process control*
  - *First Article Inspection and LH involvement*
  - *Storage and packaging*
  - *Digital Manufacturing, where applicable*
- **Chapter 28** - Post-Delivery Support:  
*The supplier shall provide assistance to LH or its customers upon request within contractual clauses with LH, including support and assistance (investigations etc) for management of any non-conforming articles.*
- **Chapter 29** - Management Responsibility and Review, Monitoring, Measurement and KPIs:

*Describe how the supplier Management monitors quality objectives. The Supplier shall define internal KPI focused on customer satisfaction. The Supplier shall analyze KPI and take adequate actions for improvement*

- **Annex A** - Focal Point – list of all Supplier and LH focal points.
- **Annex B** – Compliance Checklist **to the QRS-108 requirements**
- **Annex C** Applicability **(including the updated list of SADD)**

## 7.2 QP for Subcontractors

- **Chapter 1** - Scope and management of the quality plan:
  - *Contractor (Supplier name and address)*
  - *Applicability (list of all the P/Ns covered by the Quality Plan: **LH** P/N, Supplier P/N, Description, Procurement Spec/SCD, Sub-tier P/Ns if any). Remark: any Software and Complex Electronic Hardware installed on Articles shall be clearly declared and identified*
  - *QP approval and update: describe how the Supplier intends to manage the changes to QP and how to submit to LH approval*
- **Chapter 2** - List of acronyms, definitions, reference documents used in the QP
- **Chapter 3** - Applicable Documents, including:
  - *Contractual Documents (such as Contract, SoW)*
  - *Applicable Regulations (EASA, FAA, TCCA, AQAP, etc.)*
  - ***LH** Documents (Technical Specification, Drawings)*
  - *List of Supplier applicable documentation defined in the QP (Quality Manual, Design Manual, internal procedures)*
  - *Specific applicable **LH** Program documents*
  - *Supplier Approvals held (Civil Certifications, Military Qualifications, ISO/EN/AS series etc.)*
  - *Any exclusions for Production activities in charge to **LH***
  - *List of Sub-tier QP involved in the activities, if any*
- **Chapter 4** - Organization and responsibilities, including:  
*Program Manager, Technical Director, Manufacturing Engineering Manager, Production Accountable Manager, Certifying Staff, Quality Manager, Quality Control Manager, Production Manager. Include Organizational charts*

*The Supplier shall also identify the internal procedures for minimum requirements for personnel (education, experience, skills), training and approval, especially for those people involved with manufacturing and inspection activities for **LH** programs.*

- **Chapter 5** - Focal Points:
  - *Supplier Contacts (Focal Points)*
  - ***LH** Focal Points*
- **Chapter 6** - Documents Quality Requirements:
  - *Description of how the documentation is issued, approved, changed and managed.*
  - *Record Keeping defining timing, location and applicability*
- **Chapter 7** - Arrangement and/or License Agreement as per Applicable Certification:

- *Description of how the documentation is being exchanged between Supplier and LH (the Supplier procedures need to be approved by the Supplier's Engineering organization)*
- *Changes affecting the Arrangement/Agreement.*  
*Remarks: the Supplier shall inform LH of any changes that may affect the applicability of the DO-PO Arrangement; the Supplier shall also inform LH when the PO certification is suspended or affected by Authorities level 1 finding*
- **Chapter 8 - Configuration Management:**  
Describe how the supplier manages any discrepancy from the approved design data
- **Chapter 9 - Components procured from Sub-tiers:**  
*The supplier shall indicate how he is flowing down LH requirements to its suppliers. The supplier shall indicate the list of all of its suppliers (sub-tiers) involved. Remark: any sub-tier QPs shall be made available to LH upon request.*
- **Chapter 10 - Articles identification and traceability:**  
*The Articles will be identified, traced and delivered according to the requirements stated in applicable Drawings, Applicable Technical Specifications, Applicable QRS-series procedures. The supplies shall report on each deliverable unit:*
  - *Supplier name*
  - *Supplier PN*
  - *Supplier SN*
  - *Modification Status*
  - *Main "sub-tiers"*
  - *LH P/N*
  - *Equipment/Part description*
  - *Manufacturing date*
  - *Manufacturing quality stamp*
  - *Identification code of applicable concession/deviation permit*
- **Chapter 11 – Control on Non-conforming Article:**  
*Describe how the supplier intends to manage the non-conforming articles in accordance with QRS-107 requirements, including: Quality Notifications, Concessions, Escapes/Quality Alerts. Describe how the Supplier intends to manage and submit any Service Bulletins to LH.*  
*Describe how the supplier flows-down to Sub-tiers the management of Non-conforming articles and Escapes*
- **Chapter 12 - Delivery Documentation:**  
*How the supplier manages the delivery documentation in accordance QRS-01 requirements.*
- **Chapter 13 - Maintenance Manuals:**  
*How the supplier manages instructions for Component Maintenance Manual in accordance with QRS-122 requirements and interactions with LH*
- **Chapter 14 - Continued Airworthiness:**  
*The supplier shall explain how he is going to manage any manufacturing defect in order to ensure to inform LH within **24 hours** for all types of defects. The supplier will undertake the appropriate corrective actions after LH indications.*
- **Chapter 15 - Corrective and Preventive Actions:**

*Description of how corrective actions are managed and applied procedures*

- **Chapter 16 - Quality Audits:**

*How the Supplier manages the Quality audits. Remark: the supplier shall monitor LH requirements by planning and executing internal and external (Sub-tier) surveillance activity. This surveillance should take in to account risk-based criteria that shall be described in this section*

- **Chapter 17 - Production Process analysis and improvement:**

*the supplier shall plan and implement monitoring, measurement, analysis and improvement methods particularly related to the production process.*

- **Chapter 18 - Access:**

*How access is granted to LH representatives and Authorities according to QRS-01. Remark: include in the QP this clause: "Leonardo Helicopters has access to Supplier that will permit the access to Leonardo Helicopters representatives, LH Customers, Civil and/or Military Authorities accompanied by LH personnel, furthermore, the supplier shall guarantee the access to Subcontractor facilities".*

- **Chapter 19 - Special Processes (the requirements of QRS-104 shall be applied):**

*Indicate and describe the Supplier Control System and related Procedures in place for Special Process Qualification and Control.*

*Include the list of Special Processes performed per National/International Specifications, Supplier Proprietary Specifications, LH Process Specifications, with detail of the LH articles where these Special Processes are applied.*

*Specify the Subcontracted Special Processes and sources.*

- **Chapter 20 – Control of Counterfeits Articles**

*Describe how the Supplier manages counterfeit Articles prevention and procedures in place, according to QRS-01*

- **Chapter 21 – Purchasing process**

*Describe how the procurement process is managed; Supplier approval and control; how the LH requirements are flowed-down to Sub-tiers and how the purchased Articles are controlled. How the supplier procures raw materials from LH approved sources. How Special Processes are managed through LH approved sources (DQP)*

- **Chapter 22 – Production**

*Describe how the Supplier manages the production processes and LH involvement including:*

- *Planning of Product Realization: supplier planning shall comply with requirements defined by LH Manufacturing Engineering.*
- *Control of documentation: reference to supplier internal procedure to manage documentation received and internal flow down.*
- *Production documents issuance, change and approval*
- *Production documentation: the supplier shall have a work order that recalls the steps to be followed.*
- *Control of Production Equipment, tools and Software Programs: supplier shall indicate how he keeps under control all the equipment in use with related responsibilities.*
- *Product identification, part marking and traceability*
- *Tools and instruments management*
- *Management of Critical parts*
- *Inspection and Testing*

- *Production process control*
- *First Article Inspection and LH involvement*
- *Storage and packaging*
- *Digital Manufacturing, where applicable*
- *Critical operations: all the critical operations shall be identified with the letter "C".*
- **Chapter 23** - Post-Delivery Support:  
*The supplier shall provide assistance to LH or its customers upon request within contractual clauses with LH, including support and assistance (investigations etc) for management of any non-conforming articles.*
- **Chapter 24** - Control of Production Process Changes:  
*Describe how the supplier keeps under control and communicate to LH Production Process Changes*
- **Chapter 25** - Management Responsibility and Review, Monitoring, Measurement and KPIs:  
*Describe how the supplier Management monitors quality objectives. The Supplier shall define internal KPI focused on customer satisfaction. The Supplier shall analyze KPI and take adequate actions for improvement*
- **Annex A** - Focal Point – list of all Supplier and LH focal points.
- **Annex B** - Compliance **Checklist to the QRS-108 requirements**
- **Annex C** - Applicability

### 7.3 Transfer Plan

The Supplier shall produce a Transfer Plan that to describe how the items listed below will be managed, and any other element that may affect quality, integrity, performance and certification of the activities to be relocated:

- Details of the old and new facility including information on transfer of staff, equipment etc.
- Timeline for re-location
- List of LH Part Numbers involved in the transfer and their grade of criticality
- FAI Planning for each LH Part Number
- Re-qualification of any special/critical process: Requalification, testing and timing Plan
- Quality certifications of the transferred activities to the existing facility – how is this being managed
- **For each LH PN involved in the Plan, in order to avoid the risk of delivery disruption, provide Production Planning schedule showing overlap among the old and new facility, and/or identify the realization of a buffer stock, with quantities satisfying LH needs.**
- **Identification of any other risk associated with this transfer and planned mitigation actions.**