SABRe

Supplier Management System Requirements

Civil and Defence Aerospace

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Edition 4

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FOREWORD

Rolls-Royce Civil and Defence Aerospace requires its suppliers to comply with the AESQ Management Standard AS13100. SABRe 4 is the Supplementary Requirements document to AS13100 and defines additional requirements as required by Rolls-Royce Civil and Defence Aerospace.

The latest version, along with all relevant supporting material, including forms and templates are available to view and download from the Rolls-Royce Global Supplier Portal (GSP) at https://suppliers.rolls-royce.com and additional documents specific to Rolls-Royce Control System (RRCS) Solihull are available on the RRCS Exostar Portal.

The external provider, hereafter referred to as the Supplier, shall demonstrate compliance with the minimum standards of Business behaviours, Health, Safety and Environmental practices, Product Safety, applicable laws and regulations and act in a way that is ethical and Corporately responsible as specified in the Rolls-Royce Supplier Code of Conduct. This is available to view and download from the Rolls-Royce Global Supplier Portal (GSP).

Notice To Suppliers (NTS) is the method used by Rolls-Royce to communicate information to the external supply chain. Each NTS is designated a unique number to identify its contents from other documents. All NTS can be found on the home page of the Global Supplier Portal (GSP). NTS documents should be viewed regularly (at least every 30 days); a record of review and action (if required) shall be maintained.

INTRODUCTION

The requirements shall support compliance with Rolls-Royce obligations under Aerospace customer contracts and / or aviation authority approvals for design, production and operational support activities on aircraft and / or engine components.
Rolls-Royce PPAP (Production Product Approval Process) applies to product provided for a project recorded on the PPAP Deployment Matrix as published on the Global Supplier Portal (GSP).

Chapter A – QUALITY MANAGEMENT SYSTEMS REQUIREMENTS

1 SCOPE

The Supplier shall comply with SABRe 4 as defined in Table 1 and meet the certification requirements as defined in Table 2.The supplementary requirements are aligned to the same numbering system as in AS13100. SABRe 4 is applicable to all Suppliers in addition to those requirements that are already contained in the stated international standards who supply products and / or perform services related to Rolls-Royce Civil and Defence Aerospace purchase orders / contracts. Suppliers shall ensure that the requirements set out within this document are cascaded to all levels of the supply chain, and validate that the contractual requirements have been met in all tiers.
When becoming part of a supply chain supporting Rolls-Royce Defence product the supplements as contained in AQAP2310, AQAP2210 and AQAP2105 shall also apply. Further AQAP requirements shall be met by supply sources in line with the respective contractual requirements.

3 TERMS AND DEFINITIONS

Refer to SABRe definitions for additional information. This document is available to view and download from the Rolls-Royce Global Supplier Portal (GSP).

4 CONTEXT OF THE ORGANISATION

4.3 Determining the Scope of the Quality Management System

Supplemental Requirements
Suppliers shall:

a) Hold a Rolls-Royce approval appropriate to their type and level of supply as stipulated in Table 1 and 2.
b) Combine the supplier types as defined in Table 1 and Table 2 depending of the scope of the supplier (e.g. if a Make to Print supplier also performs special processes, all requirements of Type 1 and Type 4 apply).
c) Conduct an annual AS13100 self-assessment as detailed in RM13009 and SABRe 4 self-assessment as detailed on the Global Supplier Portal (GSP) and ensure full compliance to all requirements. The results shall be made available to Rolls-Royce on request.

NOTE: See section 4.3 on Global Supplier Portal (GSP) for the list of Legacy Programs applicable to Type 13.

Table 1 – SABRe 4 Supplementary Requirements Applicability

SABRe 4 Paragraph Reference	Type 1: Make to Print	Type 2a: Design and Manufacture	Type 2b: Design only	Type 3: Distributor	Type 4: Special Process	Type 5: Raw Material	Type 6: Production Shop Assist Only	Type 7: Specialist Inspection Processes, External Calibration or Laboratory Service Provider	Type 8: Industry Standard Part Industry Standard Raw Material Manufacturer, Commercial Off The Shelf (COTS) components, Metallic Raw Material Reprocessor (national/ international grade)	Type 9: Integrator	Type 10: Scrap of parts Service	Type 11: Manufacture of Decals/Transfers, Name Plates or Sub-tier of conventional rough machining (including test material removal, Band sawing bar stock, removal of casting risers etc)	Type 12: Sub tier conventional machining and cold forming operations that are not classified as Engineering Controlled via RRES90000	Type 13: Legacy Product (strictly only service support until end of use)
1	X	X	X	X	X	X	X			X				
3	X	X	X	X	X	X	X			X	X			X
4	X	X	X	X	X	X	X			X	X			X
4.3	X	X	X	X	X	X	X			X	X			X
6.1	X	X	X	X	X	X	X			X	X			only b);d); e)
7.1.3	X	X	X	X	X	X	X			X	X			X
7.1.5	X	X			X					X	X			X
7.5.3	X	X	X	X	X	X	X			X	X			X
8.1	X	X	X	X	X	X	X			X	X			X
8.1.3	X	X	X	X	X	X	X			X				X
8.2	X	X	X	X	X	X				X	X			X
8.3.1		X	X											
8.3.6		X	X											X
8.4.1	X	X	X	X	X	X				X	X			X
8.4.2.1	X	X	X	X	X	X				X	X			X
8.5.1	X	X			X	X	X			X	X			X
8.5.1.1	X	X			X	X	X			X	X			X
8.5.1.6	X	X			X	X				X				X
8.5.1.7	X	X			X	X				X				X
8.5.2	X	X		X		X				X	X			X
8.5.4	X	X		X	X	X				X	X			only a):b); d); e);g);h)
8.5.6	X	X	X		X	X				X	X			X
8.6	X	X	X		X	X	X			X	X			X
8.7	X	X		X	X	X				X	X			only a);b); c);d)
8.7.3	X	X		X	X	X	X			X				X
8.7.4	X	X			X					X				
9.1.1.1	X	X			X	X				X	X			
9.1.2	X	X	X	X	X	X				X	X			X
9.2	X	X	X	X	X	X	X			X	X			X
10.3	X	X	X	X	X	X	X			X				

Table 2 – SABRe 4 Supplementary QMS Certification Requirements

Minimum Approval Requirements (Supplier can define higher requirements based upon risk)	***Type 1: Make to Print***	***Type 2a: Design and Manufacture***	***Type 2b: Design only***	***Type 3: Distributor***	***Type 4: Special Process***	***Type 5: Raw Material and Metallic Raw Material Reprocessor (RR aerospace grade material)***	***Type 6: Production Shop Assist Only***	***Type 7: Specialist Inspection Processes, External Calibration or Laboratory Service Provider***	***Type 8: Industry Standard Part Industry Standard Raw Material Manufacturer, Commercial Off The Shelf (COTS) components, Metallic Raw Material Reprocessor (national/ international grade)***	***Type 9: Integrator***	***Type 10: Scrap of parts Service***	***Type 11: manufacture of Decals/Transfers, Name Plates or Sub-tier of conventional rough machining (including test material removal, Band sawing bar stock, removal of casting risers etc)***	***Type 12: Sub tier conventional machining and cold forming operations that are not classified as Engineering Controlled via RRES90000***	***Type 13: Legacy Product (strictly only service support until end of use)***
Rolls-Royce approval required	***X***	***X***	***X***	***X***	***X(16)***	***X(15)***	***X***			***X***	***X(14)***			***X***
Compliance to AS13100 – verified by Rolls-Royce (no 3rd Party Approval)	***X***	***X***	***X***	***X***	***X***	***X***				***X***				
AS/EN/JISQ 9100	***X***	***X***	***X***		***X(6)***	***X(11)***	***X***	***X(7)***	***X(10)***				***X***	
ISO 9001	***X(1)***		***X(2)***	***X(3)***		***X***			***X(9)***		***X***	***X***		***X(13)***
AS/EN/ 9120 or ASA-100				***X***										
AS/EN/JISQ 9100 or AS9120										***X***				
AC7004 & NADCAP or AS/EN/JISQ 9100 & NADCAP					***X(4)***									
AC7004 & NADCAP or AS/EN/JISQ 9100 & NADCAP or ISO 17025 & NADCAP					***X(5)***									
AC7004 & NADCAP or ISO/IEC 17025 or Equivalent National Accreditation								***X (8,17)***						***X(13)***
RRMS30031						***X(12)***								

1) *For Ground Support Equipment (engine covers, blanks etc.) only. AS13100 and AS9100 do not apply.*
2) *For Design and development service providers (RRES90009) of all tasks or services of non Powerplant (including instrumentation) only. AS13100 and AS9100 do not apply.*
3) *For Raw Material Stockist / Distributor only. AS13100, AS/EN/ 9120 or ASA-100 apply and Rolls-Royce approval is not required.Stockist/distributor must provide traceability to an approved raw material manufacturer. For RRCS Solihull Suppliers, Rolls-Royce approval is required for these suppliers. Refer to GM ES 0-1 (Cont.) for "The Register of Approved Processors" and GM ES 0-2 (Cont.) for "The Register of Approved Suppliers".*
4) *For MLC127 NADCAP processes only. For Type 2a suppliers where the Special Process being used is not mandated in MLC 127 it is required that the Purchaser must enact controls of their Special Processes or their sub-tier Special Processes.*
5) *For Non destructive test houses (i.e., facilities that only perform NDT).*
6) *For Special Processes not covered by MLC127 (ie, for those that Rolls-Royce does not mandate NADCAP)*
7) *AS/EN/JISQ may only be utilised under the following conditions:*
    a. *For Captive or Internal Materials Testing Laboratories; Acceptance and Release of Production Material may be conducted under AS/EN/JISQ 9100 provided the scope includes Manufacture and Testing of Material, and the supplier participates in the Rolls-Royce Approved Proficiency Testing Programme (https://ptpscheme.com) once every two years for each test type performed.*

Alternatives to AS/EN/JISQ 9100 may be agreed by the Rolls-Royce Technical Authority (Materials). All Rolls-Royce specifications and requirements for the testing must be flowed down to the facility completing the testing by their direct customer.

   b. *For External Test Sample Machining, with approval of the Rolls-Royce Technical Authority (Materials)*
   c. *For Inspection and Measuring Services; Inspections and measurements may utilise AS/EN/JISQ9100*

8) *For Materials Testing Laboratories; Validation of Process/Supplier (e.g. Condition of Supply Approval Package (CoSAP)) Testing Laboratories for dynamic load tests (e.g. Low Cycle Fatigue (LCF), High Cycle Fatigue (HCF), crack propagation) require Technical Approval by the Rolls-Royce Technical Authority (Materials). For Calibration Laboratories; The calibration shall be traceable to a Laboratory holding ISO/IEC 17025.*
9) *Also apply for Commercial-Off-The-Shelf (COTS) components and Metallic Raw Material Reprocessor. For Metallic Raw Material the use of continuous cast steel bar products is restricted for use unless it is procured from a Rolls-Royce approved mill, allowed by product component definition or is approved by the Rolls-Royce Technical Authority. For Standard catalogue components only qualified manufacturers (i.e., they appear on the qualified products list) shall be used when specified in a related technical specification. For RRCS Solihull Suppliers of Metallic Raw Material and Metallic Raw Material Reprocessor, Rolls-Royce approval is required for these suppliers. Refer to GM ES 0-1 (Cont.) for "The Register of Approved Processors" and GM ES 0-2 (Cont.) for "The Register of Approved Suppliers".*
10) *For Rolls-Royce Qualified Standard Parts parts only. Approval to RRES 90080 is required. If the manufacturer is using special processes to make qualified Rolls-Royce standard parts to RRES 90080, then SABRe Supplier Type 1 compliance will be required in addition to the special process approval.*
11) *For Metallic Raw Material Reprocessor (Rolls-Royce aerospace grade material e.g., MSRR, RRMS, EMS) only. AS9100 do not apply.*
12) *For Non-metallic material, Metallic materials in non-conventional form, and consumables material manufacturer only, see RRMS30031 for third party requirements. For RRCS Solihull Suppliers, Rolls-Royce approval is required for these suppliers. Refer to GM ES 0-1 (Cont.) for "The Register of Approved Processors" and GM ES 0-2 (Cont.) for "The Register of Approved Suppliers"*
13) *A Cardinal requirements like data access and long term archiving, traceability, conformity and control of special processes will be flown-down as part of the respective Purchasing document dependent on the design definition and risk of respective component.*
    The requirement flow-down for parts classified as critical or sensitive will be reviewed by the responsible Chief Engineer or his/her delegate.For this type of defence legacy parts it is permissible that Rolls-Royce laboratory performed validation of special processes (including Non Destructive Test (NDT)-Processes) can be used instead of NADCAP certification.
14) *Supplier who dispose of scrap products and/or material on behalf of Rolls-Royce shall be Rolls-Royce approved.*
15) *Required for Rolls-Royce Controlled raw material specifications as indicated in MLC101.*
16) *For Type 2a Suppliers, Rolls-Royce approval to special processes is not required.*
17) *For 3 Dimensional Structured Light (3DSL) applied to final inspection of production products, Rolls-Royce approval is not required. Specialist Inspection Processes: (Novel and/or complex measurement and inspection processes requiring a high-level of control to maintain capability) including 3D structured light shall require NADCAP approval to AC7130/4 as defined in MLC127.*

6 PLANNING

6.1 Actions to Address Risks and Opportunities

Supplemental Requirements
Suppliers shall:

a) Ensure appropriate treatment activities are in place to mitigate key risks to an acceptable level, including but not limited to:
   - Product safety and product cyber risks
   - Shortages of key skills and people
   - Product quality issues (including counterfeit parts)
   - Financial risks
   - Compliance risks (including Health, Safety & Environment, Legal, Export Control and Anti-Bribery and Corruption)
   - Protection of Intellectual Property.

b) Establish robust crisis management and business continuity plans that ensure the organisation can continue to operate in the event of a serious incident and is able to recover to an operational state within a reasonably short period. It is recommended these plans include:

- The identification, analysis, evaluation and / or mitigation of risks related to business continuity that includes (but is not limited to) the following:
  - Product/service, facility or individual skill uniqueness
  - Single points of failure (including sub-tier Suppliers) or key processes
  - The loss of key data or Information Technology (IT) systems
  - Disruption due to fire, explosion or natural disaster
  - Disruption to the supply chain.
- Access to alternative development tools and facilities
- Remote backup and archive of data
- Access to alternative IT systems
- Action plans and timescales for business recovery
- Contacts, process owners and procedures to follow in the event of an emergency
- A strategy to control, review periodically and communicate plans to all relevant personnel
- Disaster recovery and contingency planning for storage of data related to the product/service.

c) Consider the elimination of materials and chemical substances from products and processes as applicable according to the requirements of the Rolls-Royce Global Substance Elimination Policy, MLC132
d) Comply with the requirements so as to ensure continuity of supply when the Supplier has an obligation under any applicable Chemical Legislation.
e) Submit risk register and business continuity plans to Rolls-Royce on request.
f) Comply with the Rolls-Royce Supplier Enhanced Cyber Security Standard as published on the Rolls-Royce Global Supplier Portal (GSP). The Supplier will notify Rolls-Royce immediately if they are unable to comply with any measures contained in the Rolls-Royce Supplier Enhanced Cyber Security Standard and the Supplier and Rolls-Royce will agree in good faith the timelines for the production of a remediation plan by the Supplier. The completion of all remedial actions shall be completed by the Supplier to Rolls-Royce's reasonable satisfaction within six months from the date on which the Supplier notifies Rolls-Royce of any non-compliance. The Supplier shall undergo periodic security reviews to ensure compliance with the Rolls-Royce Supplier Enhanced Cyber Security Standard.

7 SUPPORT

7.1.3 Infrastructure

Supplemental Requirements
Suppliers shall:
a) Identify key process equipment and provide resources and capacity for machine / equipment and tooling maintenance. Develop and execute an effective maintenance system[1].

NOTE 1: A maintenance system can include: planned maintenance activities; identification and provision of critical spare parts; identification and control of all safety-critical plant and equipment; the use of equipment performance metrics and objectives; the use of predictive maintenance or other relevant techniques to improve equipment performance to meet objectives.

7.1.5 Monitoring and Measuring Resources

Supplemental Requirements
Suppliers shall:
a) Ensure that automated measurement system inspection programmes are independently verified and programmers are independent to those who create production programmes. Programmes shall be independent, equipment does not need to be.
b) Ensure instructions given to operators and inspectors use the same units of measurement as used on the process and inspection equipment. If conversion of measurement units is required it shall be done by the Suppliers Technical Authority and formally issued.

NOTE: Rolls-Royce has a quality commitment to defect free manufacture. Its expected that Measurement System Analysis (MSA) is conducted on Critical / Significant characteristics and considered on all other characteristics and fully justified where not applied.
NOTE: See section 7.1.5 on Global Supplier Portal (GSP) for forms and guidance.

7.5.3 Control of Documented Information

Rolls-Royce documents are available to view and download from the Rolls-Royce Global Supplier Portal (GSP)**.**
Supplemental Requirements

Suppliers shall:

a) Comply with the current revision of documents / specifications at the date of product launch and any further revisions thereafter unless otherwise agreed in the controlling specification.
b) Comply with the export control policy as published on the Rolls-Royce Global Supplier Portal (GSP).
c) Flow down Rolls-Royce documents / specifications to sub-tier Suppliers (when applicable).
d) Ensure that characteristic and acceptance test data values are recorded in an electronic format that allows ease of data analysis (e.g. in the form of a spreadsheet).
e) Ensure that documents / records requiring authorisation by Rolls-Royce are written in English or dual language (i.e. the Suppliers national language plus an accurate English translation made from the original document / record)
f) Submit airworthiness and/or occurrence related data to Rolls-Royce, if requested.
g) Retain documents and records in accordance with the specified periods in Appendix A.

8 OPERATION

8.1 Operational Planning and Control

Supplemental Requirements
Suppliers shall:
a) Plan and schedule product and / or services in order to meet Rolls-Royce requirements.
b) Ensure that production planning / scheduling includes (but is not limited to) the following:
   • Sales and operation planning
   • Master production schedule
   • Material requirements planning
   • Control of purchasing activities
   • Control of production activities
c) Establish a process to plan[1] and manage production capacity that includes (but is not limited to) the following:
   • Availability of resources for labour and equipment
   • The impact of new product introduction / product introduction on available capacity
d) Resolve discrepancies between the available capacity and the demands of Rolls-Royce.
e) Monitor the effectiveness of labour, equipment and processes to ensure planning assumptions are accurate.
f) Communicate (flow down) production schedule information to subcontractors / sub-tier Suppliers.
g) Review and respond to Rolls-Royce supply chain future schedules through the process portal (e.g. CEVA matrix).
h) Respond to Rolls-Royce Sales and Operations Review Board (SORB).
i) Notify their Rolls-Royce nominated contact immediately in the event of the identification of any obsolescence issues that may have a potential impact on the ability of the supplier to manufacture and deliver products to the qualified design.

NOTE 1: Plans shall be profiled in month for a 2 year time period.

8.1.3 Product Safety

Supplemental Requirements
Suppliers shall,
as appropriate to the supplier organisation and its products and services:
a) Demonstrate commitment to the continuous improvement of product safety and safety culture in the supplier organisation, including:
   - embedding learning from safety-related issues
   - Assessing and improving the effectiveness of safety management processes
   - Prioritising safety-related issues and tasks so that they get the right attention, time and resources
   - Encouraging everyone to speak up regarding any product safety concerns (and dealing with those concerns in line with the Supplier Code of Conduct)
b) Provide training and communication on product safety to relevant personnel. As a minimum this shall cover:
   - Communication of safety-critical information, safety events, and changes to safety procedures
   - Making accountability for product safety clear, and ensuring everyone who works in the supplier organisation understands that they share responsibility for product safety
   - How getting the basics right, such as compliance to specification and process assures product safety
   - How human and organisational factors can introduce risks to product safety

   To support this, a Product Safety Awareness Briefing pack developed by Rolls-Royce will be available for suppliers to use. This is recommended for all suppliers, and is mandatory for suppliers identified by Rolls-Royce to conduct every 4 years.

8.2 Requirements for Products and Services

NOTE: See section 8.2.3 on Global Supplier Portal (GSP) for forms and guidance.

8.3 Design and Development of Products and Services

8.3.1 General

Supplemental Requirements
Suppliers shall:
a) Ensure compliance with RRES 90009 (Requirements for Design & Development Activities).
b) Ensure compliance with RRES 90059 (Tool and Fixture Design for Suppliers).
c) Comply with the requirements agreed within the signed Engineering Supplier Integration Document (ESID), where established.
d) Support Rolls-Royce to fulfil the obligation in demonstrating to the applicable Aviation Authority compliance with the engine certification basis, if the supplier design or tasks is subject of such compliance activities.

NOTE: See section 8.3.1 on Global Supplier Portal (GSP) for forms and guidance.

8.3.6 Design and Development Changes

Supplemental Requirements
Suppliers shall:
a) Complete and submit the form(s) associated with this activity to their Rolls-Royce Technical Authority.
b) Ensure Design Changes including Definition Alteration Requests (DAR) are authorised by Rolls-Royce before implementation (including verification and validation as appropriate).
c) Ensure that configuration management related to Design Changes and Definition Alteration Requests are controlled and the data is exchanged with Rolls-Royce.
d) Ensure that revised component definition (e.g. amended drawing) has been issued / released prior to the implementation of any agreed change and before the shipment of product to Rolls-Royce. Revised component definitions (e.g. amended drawings) are not required to be issued prior to the implementation of agreed changes and/or shipment of product to Rolls-Royce Corporation. Suppliers shall consider issued change documents (Advance Engineering Memorandum (AEMs), Experimental Memorandums (EMs), and DARs) as approval to implement changes.

NOTE: See section 8.3.6 on Global Supplier Portal (GSP) for forms and guidance.

8.4 Control of Externally Provided Processes, Products and Services

8.4.1 General

Supplemental Requirements
Suppliers shall:
a) Only purchase products and services from sources holding Rolls-Royce and / or Third Party approval appropriate to their type and level of supply as stipulated in Table 1 and 2 within 4.3. If the supplier holds delegated sub-tier management and approval from Rolls-Royce, all requirements still apply but in control of the supplier.
b) Only purchase electronic components for RRCS Solihull as defined by the RRCS drawings and the definition as per the RRCS Approved Component Database (ACD). Any component substitution is not allowed.
c) Demonstrate through documented evidence that subcontractors / sub-tier Suppliers (including any Direct Buy Vendor) engaged in the manufacture or design of product are being managed to Rolls-Royce requirements.

8.4.2.1 Type and Extent of Control

Supplemental Requirements – Work Transfer
Suppliers shall:
a) Complete and submit the form(s) associated with this activity to their Rolls-Royce nominated contact.
b) Ensure that no change takes place until the Supplier has submitted and received approval to proceed from Rolls-Royce. Supplier must maintain currently approved Supply Chain, to maintain continuity of product supply, until approval is granted by Rolls-Royce to fully transition to modified Supply Chain.
c) Ensure that work transfer documentation / information is communicated along the purchase order cascade.
d) Demonstrate that any export control risks associated with the work transfer have been properly assessed and any changes to, or requirements for new export authorisations have been planned.

NOTE: See section 8.4.2.1 on Global Supplier Portal (GSP) for forms and guidance.

8.5 Production and Service Provision

8.5.1 Control of Production and Service Provision

Supplemental Requirements
Suppliers shall:
a) Record measurement results in accordance with rules defined in the SABRe Brief "Rules on significant figures and rounding".
b) For RRCS Solihull Suppliers, if additional quality assurance testing is required, it should be carried out in accordance with 02-10-05 "Quality Assurance Testing of Incoming Material".

NOTE: See section 8.5.1 on Global Supplier Portal (GSP) for forms and guidance.

8.5.1.1 Control of Equipment, Tools and Software Programs

Supplemental Requirements
Suppliers shall:
a) Ensure that tooling, jigs and fixtures owned by Rolls-Royce and / or Rolls-Royce customers (including shared ownership) are controlled as shown above, plus the following:
- Identified as Rolls-Royce owned
- Tooling register established
- Used only for Rolls-Royce applications
- Audited annually (stock take) and periodic preservation / condition checks for tooling held in storage
- Modifications only after written authorisation by Rolls-Royce
- Disposal only after written authorisation by Rolls-Royce
- Provision of tool information (including photographic information) to Rolls-Royce on request.

8.5.1.6 First Article Inspection (FAI)

Supplemental Requirements
Suppliers shall:
a) Follow guidance included in RM13102 for First Article Inspection (FAI).
b) Submit FAI reports via e-FAIR system Net Inspect™.
c) Obtain Rolls-Royce approval signature (Form 1 – 23 Customer Approval) prior to release when the first-tier supplier does not hold FAI report approval authorisation from Rolls-Royce as specified in the Supplier Approval Certificate.
d) Perform FAI reports for parts for RRCS Solihull for any drawing amendment (up issue).
e) Notify any method change as required for all parts (with the exception of standard and catalogue parts) for RRCS Solihull and submit an SC5A, which provides guidance on when a submission is required. Implementation of changes before RRCS approval is not allowed.

NOTE: See section 8.5.1.6 on Global Supplier Portal (GSP) for forms and guidance.

8.5.1.7 Fixed Production Methods

Supplemental Requirements
Suppliers shall:
a) Create a fixed process document and complete the form associated with this activity when the Production Definition specifies RRES 90000 (Engineering Control of Production Source and Method) and is deemed required.

NOTE: See section 8.5.1.7 on Global Supplier Portal (GSP) for forms and guidance.

8.5.2 Identification and Traceability

Supplemental Requirements
Suppliers shall:
a) Control the unique and serialised identification of the product when required to do so as specified in the Rolls-Royce product definition (see forms).
b) Accept the release documentation where product is provided by Rolls-Royce. This documentation is sufficient evidence of product traceability up to the point of the release documentation being created. In such cases, it is not necessary to verify test reports and original raw material manufacturer source certificates.
c) Suppliers for RRCS Solihull and shall in addition:

- Trace products manufactured from the same lot of material or from the same manufacturing batch as well as the destination of all parts in each batch (including scrap).
- Trace for an assembly, all of its components and those of the next higher assembly.
- For electronic components, where the supplier is not the manufacturer (i.e. stockist, distributor or integrator) the supplier must have an auditable, documented system which provides for traceability back to the manufacturer, manufacturers lot / batch / works order.
- For electronic components, if the supplier is not a franchised distributor / or manufacturers agent then the supplier must purchase from a franchised distributor or manufacturers agent and have a documented system to ensure that any product alerts / product warning notices are flowed into RRCS.

NOTE: See section 8.5.2 on Global Supplier Portal (GSP) for forms and guidance.

8.5.4 Preservation

Supplemental Requirements
Suppliers shall:

a) Provide secure storage facilities for product, equipment, tools and material.
b) Assess the condition of product in stock at appropriate planned intervals in order to detect deterioration.
c) Establish an inventory management procedure that includes (but is not limited to) the following:
   - Rule for determining safety stock levels
   - Method to guarantee inventory accuracy
   - Key performance indicators to monitor inventory
   - Method to monitor, review and action slow-moving work in progress
   - Control of shelf life product.
d) Ensure that access to storage facilities is restricted to authorised personal.
e) Deliver product using the Rolls-Royce standard delivery transport network and collection service as / when specified by Rolls-Royce (i.e. Manifest or equivalent).
f) Use appropriate transport to ensure that the product is delivered in a timely manner and ensures that the product will be received in a condition that is fit for purpose (i.e. when the Rolls-Royce standard transport network and collection service is not specified or will not/ cannot be used).
g) Compile a “Packaging and Labelling Data Sheet” (see forms) to define the packaging and labelling applied to the product and submit to Rolls-Royce (on request).
h) Comply with the latest version of the Protection Packaging and Labelling document.
i) Pack all electronic parts or parts which may be Electro Static Discharge sensitive in accordance with BS EN 61340-5-1 “Protection of Electronic Devices from Electrostatic Phenomena”
j) Clean and pack all metallic parts for RRCS Solihull destined for Hydromechanical value streams in accordance with WP705 “Corrosion Protection of Metallic Components during Manufacture, Temporary Storage and Inter-Factory Transit.
k) Do not oil metallic parts for RRCS Solihull destined for Electronics value streams.
l) Inspect all rubber components for RRCS Solihull suppliers and pack in accordance with the following specifications:- ES-32-601 “Inspection of Rubber Components” and WP704 “Inspection & Packaging of Rubber Components”.
m) Include additional information for products for RRCS Solihull Derwent facility on the packaging label as follows:
   - Manufacturing lot number or traceability reference (where the part is not serialised)
   - Unique number of the release document

NOTE: See section 8.5.4 on Global Supplier Portal (GSP) for forms and guidance.

8.5.6 Control of Changes

Supplemental Requirements
RRCS Solihull Suppliers of electronic components (including distributors) shall:

a) ensure that they and their sub-tier suppliers are engaged in an electronic change notification system such as the PCN process.
b) The level of change notification meets as a minimum the requirements laid out within the SC5A guidance.
c) Send all changes that relate to RRCS Solihull products to RRCS, irrespective of the time since the part was last supplied and delivered to RRCS.

8.6 Release of Products and Services

Supplemental Requirements
Suppliers shall:

a) Provide separate release documentation (e.g. Certificate of Conformity (CoC), EASA Form 1, FAA 8130-3, CAA Form 1) with each delivery to Rolls-Royce.
b) Comply with the latest version of the Product Release Document.

c) Comply with Supplier Release Process (SRP) to AS13001 for all Rolls-Royce Aerospace contracts / purchase orders being delivered to Rolls-Royce Corporation.

NOTE: See section 8.6 on Global Supplier Portal (GSP) for forms and guidance.

8.7 Control of Nonconforming Outputs

Supplemental Requirements
Suppliers shall:

a) Take necessary actions to fully contain problems within 48 hours.
b) Immediately notify their Rolls-Royce nominated contact and their Rolls-Royce Technical Authority (or other impacted customers) of any delivered nonconforming product and continually pursue a response that the notification has been received by Rolls-Royce.
c) Segregate any undelivered nonconforming product and hold until a response related to the disposal of the product has been received from Rolls-Royce.
d) Stop shipment of product when notified of non-conformance by Rolls-Royce until appropriate corrective action has been established.
e) Introduce Customer Eyes Overview (CEO) when mandated by Rolls-Royce.This would normally be where delivered quality has fallen below expectations and where identified non-conformances should have been identified by visual inspection. The Rolls-Royce nominated contact will provide the relevant requirements.

NOTE: Where Product nonconformities are identified by Rolls-Royce, an associated cost of non-quality charge as published in section 8.7 on the Global Supplier Portal (GSP) in forms and guidance may apply.

8.7.3 Deviation Permits and Concessions

Supplemental Requirements
Requests for concession applications will only be accepted under exceptional circumstances and may be subject to cost of non-quality charges as published in section 8.7.3 on the Global Supplier Portal (GSP) in forms and guidance**.**

Suppliers shall:

a) Ensure that Concession or Deviation Permit is approved by Rolls-Royce or written authorisation has been granted by their Rolls-Royce nominated contact prior to the shipment of a product which does not conform to specified requirements.
b) Complete and submit the form(s)[1] associated with this activity to their Rolls-Royce nominated contact or through eConcessions (electronic concession system) where access has been granted by Rolls-Royce. Supplier for Rolls-Royce designed Casting/Forging may submit concessions/deviation permits directly into the relevant Rolls-Royce Engineering Authority if confirmed by their nominated contact and in agreement by the First Tier Machining Supplier with the following requirements :
    - Only Rolls-Royce approved suppliers can submit concessions/ Deviation Permits (DPs) into the Rolls-Royce Engineering Authority.
    - As per Section 8.6 Casting/Forging Supplier must flow the approved non-conformance paperwork with the product to the first tier regardless of the approval route.
c) Take appropriate corrective action and document it within the concession form and / or deviation permit.
d) Flow the non-conformance documentation along the purchase order cascade.
e) Mark the product as indicated on the deviation permit / concession[2], including (but not limited to) the relevant concession category and concession number allocated by Rolls-Royce in accordance with the applicable identification marking method (and location) specified in the product definition.
f) Attach an orange coloured concession label[2,3] to the primary, secondary and tertiary packaging (as applicable) that states the concession category and concession number allocated by Rolls-Royce.

NOTE 1: Forms related to German defence products shall be written in German.
NOTE 2: For concessions sentenced as category 1, 2 or X only.
NOTE 3: Concession labels are only applicable to Rolls-Royce contracts / purchase orders being delivered to Rolls-Royce UK, Rolls-Royce Deutschland
NOTE: See section 8.7.3 on Global Supplier Portal (GSP) for forms and guidance.

8.7.4 Control of Re-worked (in Production) Product

Supplemental Requirements
Supplier~~s~~ of products for RRCS Solihull shall:
Use the source change/method process where a rework requires a plating or coating to be stripped and replaced (either through mechanical or chemical stripping). Prior to carrying out this type of rework the completed SC5A form is required to obtain approval from the RRCS that the rework is acceptable. This will define the steps necessary to assure RRCS that the rework process has not had any detrimental effect on the

parts being reworked. A technique sheet will be generated and supplied to RRCS for approval with the completed SC5A.

9 PERFORMANCE EVALUATION

9.1.1.1 Monitoring and Measurement of the Manufacturing Process

Supplemental Requirements
Suppliers shall:

a. Apply acceptance criteria in Chapter B Section 16.6.9 for all Product Key Characteristics for ongoing monitoring.

NOTE: Rolls-Royce has a quality commitment to defect free manufacture. In order to establish performance levels in line with this commitment it is desirable to achieve Capability of Cpk ≥ 2.0 for all features (not only Key Characteristics) and a requirement to achieve the Process Minimum Standards using the Benchmarking Assessment Tool for applicable processes within the rules as published in section 9.1.1.1 on the Global Supplier Portal (GSP).

9.1.2 Customer Satisfaction

Supplemental Requirements
Suppliers shall:

a) Create production process performance metrics that monitor (but are not limited to) the following (unless otherwise agreed):
   - Cycle-time and lead-time adherence
b) Immediately inform the Rolls-Royce nominated contact when it is identified that delivery schedules are not (or will not be) achieved. A recovery plan must then be submitted within 24 hours to the Rolls-Royce nominated contact.

NOTE: Where performance consistently and / or significantly falls below agreements and / or expectations the Supplier shall be subject to the requirements of the "Red Flag" process, details of which will be communicated separately should these circumstances arise.

9.2 Internal Audit

Supplemental Requirements
Suppliers shall:

a) Where applicable establish an annual audit programme to verify compliance with the signed Engineering Supplier Integration Document (ESID) related to Rolls-Royce contracts. The audit results shall be submitted to Rolls-Royce on request.
b) Take appropriate corrective action and implement within 90 days or prior to shipment of product (whichever is sooner).

10.3 Continual Improvement

Supplemental Requirements
Suppliers shall:

a) demonstrate a commitment to zero defects establishing the appropriate improvement plans and programs to eliminate known and potential sources for defects. These plans shall be shared with Rolls-Royce upon request.

Chapter B – 9145 - Advanced Product Quality Planning (APQP) and Production Part Approval Process (PPAP)

11 General

Supplemental Requirements
Supplier shall:

a) Apply APQP unless specifically excluded by the purchase order/contract.
b) Apply PPAP to product provided for a project recorded on the PPAP Deployment Matrix as published on the Global Supplier Portal (GSP).

NOTE: See section B on Global Supplier Portal (GSP) *for forms and guidance.*

16.1.6 APQP

Supplemental Requirements

Supplier shall:
a) Establish a documented procedure, to comply with AS13100 APQP and PPAP requirements (16.1.1.) and those specified within SABRe 4 Chapter B.
b) Document the feasibility assessment result of the proposed design (see RM13145) using the Rolls-Royce approval form or equivalent [1] and confirm agreement with Rolls-Royce Technical Authority.

NOTE 1: An example of a Rolls-Royce approval form is the Feasibility Assessment Sheet.

16.5.10 Phase 3 - Process Design and Development

NOTE: The APQP and PPAP Element for Rolls-Royce approval, should be agreed by the Rolls-Royce Technical Authority.

16.6.9 Phase 4 - Product and Process Validation

Supplemental Requirements
Supplier shall:
a) Complete actions to satisfy Customer Specific Requirements defined by the Purchase Order and/or Production Product Approval Checklist (PPAC form)[1].
b) Manufacture a minimum of twenty-five (25) products[2] during the production process run.
c) Conduct initial process studies for a feature designated as Product Key Characteristics[3] and apply the following acceptance criteria (see Table 3) for the evaluation of initial process study results.

Table 3 – Acceptance criteria, interpretation and reaction plan for process capability studies and results

Acceptance criteria A Defence (All Product) Civil Product not within PPAP Requirement	Acceptance criteria B Civil Product with PPAP Requirement	Interpretation / Reaction Plan
Cpk/ Ppk ≥ 1.33	Cpk/ Ppk ≥ 2.00	Capability Target achieved / when required by submission level, submit for approval.
Cpk/ Ppk <1.33≺ and ≥ ≦ 1.0	Cpk/ Ppk <2.00≺ and ≥ ≦ 1.33	Contact Rolls-Royce Technical Authority to determine acceptability by the Technical Approval Authority / If applicable implement a corrective action plan[4] to improve capability.
Cpk/ Ppk <1.0	Cpk/ Ppk <1.33	Capability Target not achieved. Contact the Rolls-Royce Technical Authority if the acceptance criteria cannot be attained by the required submission date, submit a corrective action plan[4] for approval and continue with variation reduction activities.

NOTE 1: Examples of such requirements are; The achievement of quality (Right First Time (RFT), Defect Per Unit (DPU)) and/or Customer Demand Rate targets, capability studies and specific conditions such as sampling frequency, number products used as part of the Production Process Run when different to 25, validation actions such as weight measurements or date-based targets for PPAP Events.
NOTE 2: The minimum of twenty-five (25) products may alter when authorised by the Rolls-Royce Technical Authority via the purchase order or PPAC form and when significant production volumes exist (>25) or in circumstances where low production volumes exist (<25).
NOTE 3: Product Key Characteristics include Key Characteristic Feature (KCF), Conformance Control Feature (CCF), Critical Safety Item (CSI), Critical and Significant specified by Rolls-Royce. See Appendix C
NOTE 4: Types of corrective action may include: engineering redesign, manufacturing equipment or method improvement/manufacturing system redesign.

17.1.1 Process Requirements for Production Part Approval Process

Supplemental Requirements
Supplier shall:
Apply the following additional PPAP Elements in accordance with AS13100 Table 14, Common AESQ Customer Specific Requirements;
- 10.A Customer Engineering Approvals, see RM13145[1].
- 10.B Process Control Surveillance, see RM13145[1].
- 10.C Workstation inspection/test planning, see RM13145[1].

For product produced at the Supplier facility and supplied from this facility to Rolls-Royce, the Supplier and qualified person shall only act as Customer Authorized Representatives (CARe)[2] when the;

- Facility has a valid SL1 Award Certificate.
- Personnel operating as the Customer Authorized Representatives is qualified through a Rolls-Royce approved training provider[3] and when qualified to RM13145, Appendix A PPAP Coordinator and CARe Training standard.

NOTE 1: Related submission / retention levels are found within appendix B along with identifications and information used by Rolls-Royce for all applied PPAP Elements.
NOTE 2: The Customer Authorized Representatives (CARe) for product received by Rolls-Royce will always be the Rolls-Royce CARe, unless these SL1 Award requirements stated here are met.
NOTE 3: As published on the Global Supplier Portal (GSP).
NOTE 4: Special Process Houses shall complete PPAP Element 10.B Process Control Surveillance,see RM131451, unless specifically excluded by their Purchase Order

18 AESQ SUPPLY CHAIN RISK MANAGEMENT PROCESS

Supplemental Requirements
Supplier shall:

a) Apply to product Health Check Rating (H-M-L) and APQP Assurance Actions identified by Rolls-Royce.
b) Apply metrics and provide results identified by Rolls-Royce.
c) Conduct independent approval of events[1] with the Rolls-Royce Technical Authority (or nominated representative)

NOTE 1: Independent approval of events refers to "Approval of Events" (AS13100 and RM13145) jointly operated between the organisation and Rolls-Royce.

Appendix A – Minimum Document Retention Periods

Category A Indicates the record will be retained for statutory or regulatory requirements. The minimum time period for a Category A record relating to products will be ten years after the product type is withdrawn from use (i.e. withdrawal of type certificate or notification of the withdrawal for support in the case of military aerospace products).

Category B Indicates the record will be retained for business requirements. The retention period for Category B records will be six years however this may be adjusted based on the business requirement.

SABRe Clause	Document / Record	SABRe Edition 4 Archiving Category
6.1	Records of risk management	B
7.1.5	Records of MSA	A
7.2	Records of training and competence	Period of employment +3 Years
8.2.3 (see AS13100)	Review of requirements related to the product	B
8.3.1	Design Technical Data Package	A
8.3.6	Records of definition alteration	A
8.4.1	Records of purchasing / subcontracting	B
8.4.1	Records of receipt inspection and supporting documentation	A
8.4.1	Maintain records of subcontractor / sub-tier supplier monitoring	B
8.4.2.1	Records of work transfers (source change)	B
8.5.1	Records of reduced sample inspection	A
8.5.1	Records of variation management for products specified as "Fixed Process Control"	A
8.5.1	Records of variation management for product **not** specified as "Fixed Process Control"	B
8.5.1.1	Tooling control records	B
8.5.1.6	Records of product verification for product specified as "Fixed Process Control"	A
8.5.1.6	Records of product verification for product **not** specified as "Fixed Process Control"	B
8.5.1.6	FAIR / LAIR	A
8.5.1.7	Fixed process control	A
8.5.1.8 (see AS13100)	Records of vision standards	Period of employment +3 Years
8.5.2	Records of product identification, traceability and serialisation	A
8.6	Records of release documentation	A
8.7	Records related to the control of nonconforming product	A
8.7.3	Records of deviation permits / concessions	A
8.7.4	Records of reworked product	A
9.1.1.1	Records of process performance metrics	B
9.2	Records of internal audits	B
10.2 (see AS13100)	Records of corrective action	B
10.2 (see AS13100)	Records of PFMEA	B
10.2 (see AS13100)	Records of control plans	B
Chapter B	PPAP file	B

Appendix B - Submission/Retention Levels

This table is a subsequent for AS13100, Table 11 (Submission/Retention Levels). The Table identify the AESQ Common Customer Specific Requirements (AS13100, Table 14) required by Rolls-Royce, the PPAP Elements specified by AS13100 APQP and PPAP and the unique references used by Rolls-Royce.

- Elements listed in this table are to be included in the PPAP file, as applicable.

Ref #	PPAP Element AESQ PPAP Elements * AESQ Common Customer Specific Requirements **	Submission Level				
		SL 1	SL 2	SL 3	SL 4	SL 5
1	Design Record *	S R	S R	S R	C R	S R W
2	Customer Engineering Approvals **	R	R	S R	C R	S R W
3	Design FMEA *	R[1]	R[1]	S R[1]	C R[1]	S R W[1]
4	Process flow diagram *	R	R	S R	C R	S R W
5	Process FMEA *	R	R	S R	C R	S R W
6	Control Plan *	R	S R	S R	C R	S R W
7	Workstation inspection/test planning **	R	S R	S R	C R	S R W
8	Packaging, labelling standard, and documentation *	R	R	S R	C R	S R W
9	Measurement System Analysis verification *	R[2]	S R[2]	S R[2]	C R[2]	S R W[2]
10	Dimensional/Nondimensional results *	R	S R	S R	C R	S R W
11	Initial Process Capability studies *	R	S R	S R	C R	S R W
12	Process Control Surveillance **	R	R	S R	C R	S R W
13	Initial Manufacturing Performance studies *	R	R	S R	C R	S R W
14	Customer-Specific requirements *	R	S R	S R	C R	S R W
15	First Article Inspection *	S R[3]	S R[3]	S R[3]	C R[3]	S R W[3]
16	Production Submission Warrant[4] (Approval form) *	S R	S R	S R	C R	S R W

Key/Legend	
S	Submit to Rolls-Royce (or nominated representative).
R	Retain a record as part of the PPAP file and make available to Rolls-Royce upon request.
C	Consult Rolls-Royce - submission (S) and/or witness (W) may be required.
W	Witness by Rolls-Royce (or nominated representative) through a supporting data/information review at manufacturing location

NOTE 1: Design and Manufacture Supplier only.
NOTE 2: When specified by the related MSA Plan (Phase 3 of APQP) or agreed to by Rolls-Royce Technical Authority.
NOTE 3: In accordance with EN/ AS9102.
NOTE: See section B on Global Supplier Portal (GSP) for forms and guidance.

Appendix C – Key Product Characteristic Classifications

Current Key Characteristics / Critical Items	Product Definition Symbol	AS1300x Series Equivalent	AS9103 Equivalent
Critical	⊕	Critical	Critical Item (CI)
Critical characteristics are the most important on the component and failure could directly lead to a hazardous failure.			
Significant	⊖	Major	Critical Item (CI)
Significant characteristics are important characteristics which through a chain of events could lead to a hazardous failure but the product is designed to prevent this occurring. Failure however could be very disruptive to our customers.			
KCF / CCF	"**KCF**" or "**CCF**" or Flag Note	Major	Key Characteristic (KC)
KCF and CCF characteristics directly affect the performance of our product (e.g. fuel efficiency), typically these require special controls such as variation management.			
CSI	CSI	Critical	Critical Item (CI)
CSI - Any feature that if non-conforming, missing or degraded may cause a catastrophic or critical failure resulting in the loss of or serious damage to the aircraft, an unacceptable risk of personal injury or loss of life, or an uncommanded engine shutdown that jeopardizes safety			
Unclassified	No Symbol	Minor	Not Applicable
Unclassified characteristics are those that do not meet the criteria for Critical, Significant, KCF, CSI, or CCF.			

Change History

Revision	Date	Description of Change	Author	Owner	Approval
1.0	July 2021	New edition to accommodate requirements of AS13100	Robert Starcke	Uzam Khan	Uzam Khan

Document update policy

This document may be updated periodically. Major updates will be indicated by an increase to a higher revision number (e.g. revision 1.0 to revision 2.0). Minor updates and corrections will be indicated by a decimal change in the revision number (e.g. revision 1.0 to revision 1.1).