SUPPLIER QUALITY ASSURANCE REQUIREMENTS

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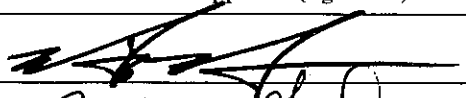
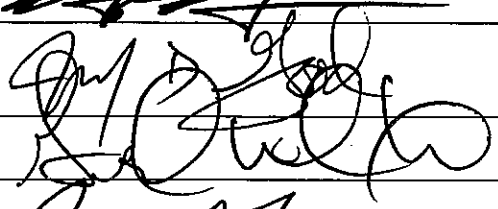
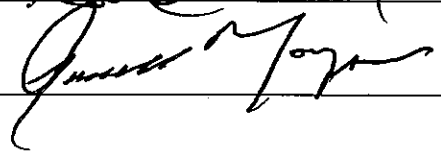
Note: Changes to this document are controlled per QP-134, Section 6.15

Approvals

Department	Approval (signature)	Date
Mike McNair CEO		30 Nov 2020
Jeff Good Director of Product Management		30 Nov 2020
Gerald White Director of Quality		30 Nov 2020
Russell Morgan Aero Program Management		30 Nov 2020

Document History

Revision	Description	Date
H	Complete re-write. Inc. QP-118 & QP-121; Updated to ISO 9001:2000 & AS9100A	2 May 03
J	Changed reassessment to SPRS evaluation	6 Dec 05
K	Revised company name	6 Aug 07
L	Clarified Service suppliers and ratings	20 Aug 09
M	Fixed typos, clarified supplier approval responsibilities and added risk mitigation	8 Oct 12
N	Clarified actions taken for low performing suppliers and added form 902679.	6 Nov 12
P	Revise Section 6.0 about type and extent of assessment, how performance is assessed and responsibilities of a qualified supplier. Add Table of Contents, 5.6 for C of C requirement and added Table of Contents.	18 Aug 14
R	Revised Definition 3.4, added Definitions 4.0 to 4.6, remove appendix I from 4.0 References, added reference 4.8 to 5.1, revised 5.1.2 and added 5.1.6, corrected name of BY-105 throughout procedure, changed FAI report to FAIR to agree with AS9102 Rev B, revised 6.1.3 to match DN 7005, removed 6.1.5 and 6.1.6 , revised 6.1.7 supplier status to match what is in ERP, clarify that data comes from ERP in paragraph 6.2.1 and 6.2.2.3, added the use of a SCAR to monitor performance improvement at 6.2.2.1 and 6.5.1, added 6.3.3 to describe the use of the new Special Process Survey form 902757, removed the reasons for disqualification table at paragraph 6.4, Revised list of additional actions taken at 6.5, revised what objective evidence is needed at 6.7.1	13 Oct 15
T	Revised 6.3.3.1 to give examples of typical special processes, revised 6.3.3.3 and 6.3.3.4 to add details of supplier validation and revalidation of processes, equipment, qualified personnel and testing of product/coupon, revised 6.81 & 6.8.2 to change record retention period	26 Oct 15

U	Updated 2.3 to remove ISC-101. Update 3.12, 3.16 definitions. Added 3.19, 3.20, and 3.21 definitions. Revised grammar in paragraphs 5.1.2 and 5.1.4 and 5.1.6 for clarity. Revise 5.3.11 and 5.3.17.1. Added 5.3.20 Acceptance Authority Media, 5.3.21 Notification of Escapement, 5.3.22 Counterfeit Parts and 5.3.23 Personnel. Edited several paragraphs for clarity: 6.1.1, 6.1.2, 6.1.4, 6.1.6, 6.3.1, and 6.3.4. Reworded 6.1.5 to match the current process for approving suppliers. Changed 6.2.1 to Top 25 Production suppliers. Added 6.2.2.4. Revised 6.8.1 for supplier quality records retention. Applied Rev D changes.	22 May 2018
V	Revised 5.3.3 to include the following: • Added: 'l. Software Version' • Modified: j to include FTP Number Added 3.2.2 FTP to Definitions. Revised 5.3.2 Customer Property, 5.3.10 Document Control, 6.2.1 frequency of supplier performance review, added 6.2.2.5, revised 6.3.4 to request new QMS certs from only the Top 25 suppliers	27 Feb 2020
W	Revised 4.2 to remove references to Rail and Bus. Revised 6.2.1 to require review of supplier performance quarterly at a minimum. Added Note to 5.3.13. Added 4.12 to reference LPS-258.	30 Nov 2020

Table of Contents

1.0 Purpose

This procedure defines the Luminator policy for the use of suppliers in the procurement of all products and services to meet purchase order, drawing and specification requirements. This procedure establishes the minimum quality systems requirements that suppliers are expected to operate within, in order to prevent nonconformities in processes or product, and to provide evidence of control. This procedure also establishes Luminator's policy on delivery expectations and the methods used to measure overall supplier performance.

2.0 Scope

2.1 Luminator is responsible for all products or services that it delivers to its customers. In order to ensure that Luminator delivers the highest possible quality products and services, this procedure applies to all suppliers that provide products and services which comprise any portion of a Luminator customer deliverable product.

2.2 Product verification by Luminator will not be used as evidence of effective control of quality by the supplier and shall not absolve the supplier of the responsibility to provide acceptable products or services.

2.3 The risk associated with selecting and using suppliers in the procurement process is managed using identification and mitigation processes defined in BY-100, Purchasing Manual

2.4 Where required, Luminator and Luminator suppliers will use customer-approved special process sources.

3.0 Definitions

3.1 QA – Luminator Quality Assurance

3.2 SCAR – Supplier Corrective Action Request

3.3 MRB – Luminator Material Review Board

3.4 MRR – Material Rejection Report

3.5 P.O. – Luminator Purchase Order

3.6 Product – raw stock, standard parts (hardware, wire, etc.), component parts, sub-assemblies, complete assemblies

3.7 Services – special processing, plating, paint and powder coatings, interim fabrication operations, production testing

3.8 FAI – First Article Inspection

3.9 C of C – Certificate of Conformance

3.10 FAIR – First Article Inspection Report

3.11 Approved - an active supplier that meets Luminator quality requirements

3.12 Disqualified - supplier does not meet Luminator's requirements. No PO's can be issued to this supplier.

3.13 Certified - an active supplier that exceeds Luminator quality requirements. A supplier receipts may be changed to Dock to Stock with this status

3.14 Restricted - supplier will not receive any new business

3.15 Inactive - there has been no activity for at least 3 years. An inactive supplier is an approved supplier. ERP will not allow POs to be issued to a supplier with this status.

3.16 SyteLine – Luminator's ERP System

3.17 Special Processes – any processes for production and service provision where the resulting output cannot be verified by subsequent monitoring or measurement and, as a consequence, deficiencies become apparent only after the product is in use or the service has been delivered.

3.18 Luminator Approved – supplier has been surveyed, reviewed and validated through Luminator defined methods and deemed acceptable to perform identified processes.

3.19 FAA – Federal Aviation Administration

3.20 QMS – Quality Management System

3.21 902638 New Vendor Request Form

3.22 FTP – Functional Test Procedure

4.0 References

4.1 AC 21-43 FAA Advisory Circular

4.2 Title 14 CFR 21 (Aircraft)

4.3 ISO 9001, AS9100, AS9102, Boeing BQMS, NADCAP

4.4 QL-127 Supplier Performance Measurements

4.5 902638 New Vendor Request Form

4.6 QP-112 Corrective Action

4.7 BY-105 Procurement Specifications for Multi-Layer Printed Circuit Boards

4.8 902757, Special Process Survey

4.9 DN 7005 Supplier Control

4.10 902117 Supplier Survey Form

4.11 902263 Supplier Corrective Action Request

4.12 LPS-258 Identification and Marking of Parts and Assemblies

5.0 Responsibility

5.1 Luminator Quality Assurance – Process Owner

5.1.1 The creation and maintenance of this procedure

5.1.2 Retain Supplier Surveys and Accreditations

5.1.3 Monitoring and reporting supplier quality performance

5.1.4 Issuing SCARs to suppliers and ensuring timely closure

5.1.5 Notify supplier of suspected problems with previously delivered product

5.1.6 Will maintain a list of approved suppliers in SyteLine

5.2 Luminator Purchasing – Process Co-Owner

5.2.1 Luminator Purchasing will ensure that all the applicable information needed to define the product or service is specified in the purchasing documentation provided to the supplier. This includes, but is not limited to, drawings, specifications, C of C, FAI, special testing or identification instructions, and any other relevant technical information required by the customer for compliance.

5.2.2 When the Supplier is to provide design services and/or products, Luminator Purchasing, in conjunction with Luminator Engineering will provide to the supplier a defined operational envelope and any test, examination, and inspection instructions required for acceptance. Prototype testing and acceptance, design review and approval, and production testing criteria will be defined prior to the receipt of production products and/or services.

5.2.3 If deemed necessary Luminator may authorize the supplier to direct ship. If this occurs it is Luminator's responsibility to notify the FAA.

5.3 Luminator Approved Supplier

5.3.1 **Changes** – The supplier shall notify Luminator (in writing) when there are changes in product and/or process, changes in sub-tier suppliers, changes of manufacturing facility location or organizational changes such as new ownership, company name, or changes in senior quality management.

5.3.2 **Customer Property** - The supplier will maintain procedures for the control of product supplied by Luminator as applicable. It shall be verified on receipt that it is correctly identified and received in an undamaged condition. The product will be stored in a suitable area to prevent loss, damage or deterioration. It shall be issued only for work carried out against Luminator purchase orders. Any such

product that is lost, damaged or found to be unsuitable for use shall be recorded and reported to the Luminator purchasing department.

5.3.3 **Certificate of Conformance** – The supplier shall supply a C of C with every shipment. For easy identification the supplier shall mark the carton that contains the C of C documentation. The C of C must contain specific information required by Luminator:

a. Company Name
b. Company Address
c. Date
d. Luminator Purchase Order Number
e. Luminator Part Number
f. Part Revision
g. Part Description
h. Material used
i. Quantity of parts
j. Indicate and provide results for all tests performed & FTP Number
k. Compliance statement signed and dated by an authorized representative of the company
l. Software Version (if applicable)

5.3.4 **Right of Access** – For Luminator to comply with the terms and conditions of its approvals and customer commitments it is necessary that suppliers provide the right of access for its representatives, representatives of its customers and regulatory bodies. Free access shall be provided to enable review of all systems, documentation and records associated with the manufacture and control of products supplied to Luminator.

5.3.5 **Supply Chain Flow Down** – The Supplier will ensure that all applicable requirements stated in the Luminator purchase order are flowed down to sub tier suppliers as required.

5.3.6 Shall meet the requirements of Luminator BY-105 Procurement Specification for Multi-Layer Printed Circuit Boards when supplying printed circuit board assemblies.

5.3.7 **Organizational Structure** - Shall have an organization with defined responsibilities and qualifications for personnel engaged in work affecting quality. There shall be a management quality representative with sufficient staff and

resources to ensure that the requirements of this procedure are maintained, regardless of other responsibilities. Luminator shall be notified of changes in company ownership, senior management, or quality representative.

5.3.8 **Quality System** - Will maintain a documented quality system that defines the procedures and methods used to ensure that the requirements of this procedure are met and that the products and services supplied to Luminator conform to the specified requirements.

5.3.9 **Contract Review** - The supplier will review every order from Luminator to verify that they are capable of meeting the specifications and requirements. It is the supplier's responsibility to notify Luminator Purchasing Department of all feasibility concerns and for ensuring these are resolved before production begins.

5.3.9.1 If the supplier manufacturing or service plans includes sub-contracted operations, details of these and the sub-contractor's source shall be advised to Luminator Purchasing Department.

5.3.10 **Document Control** - The supplier will maintain a procedure to ensure there is a controlled distribution of current documents relating to the requirements of the Purchase Order, Engineering Drawings and Specifications provided by Luminator. Authorized personnel within the Supplier's organization shall approve documents and subsequent changes to them and only current documents will be available at the point of use, with all obsolete documents removed from circulation. The Supplier shall retain FAIR and FAA Certification records indefinitely. All other Quality records will be retained for 10 years.

5.3.11 **Supplier Evaluation and Selection** - The Supplier will select subcontractors and apply appropriate controls, on a basis that they are able to meet quality requirements, including customer approved sources as required. The Supplier should carry out subcontractor assessment by an appropriate combination of surveillance of their quality systems and evaluation of their capability from previous quality delivery records.

5.3.12 **First Article Inspection** - The supplier must provide FAIR either prior to or with first delivery. This must include a comprehensive inspection report (covering all drawing features, notes, material, and process references) including the "ballooned" drawing. These are required to support receipt of the First Article to ensure that processes and product comply with specified requirements. All first articles must conform to AS9102 requirements.

5.3.12.1 In the case of sub-assemblies, the suppliers own First Article Inspection reports are acceptable submissions providing they meet quality requirements and specifications. Luminator must approve any changes to product, processes or service definition prior to implementation.

5.3.12.2 The supplier shall provide a FAIR when supplying a product for the first time, for every revision change, and when the product has not been manufactured in a 24-month period.

5.3.13 **Identification and Traceability** - The supplier will maintain procedures for identifying the product during all stages of manufacture and shipping. Full traceability to raw materials must be possible for each batch.
NOTE: No articles (or constituent parts thereof) ordered by Luminator shall contain any Federal Aviation Administration – Parts Manufacturer Approval (FAA-PMA) markings, and the accompanying paperwork (e.g., packages, shippers, etc.) shall not contain any FAA-PMA markings.

5.3.14 **FOD** - Suppliers will ensure manufacturing processes are carried out under controlled conditions and in a suitable environment that precludes the commingling of raw goods with finished product lots and the introduction of FOD.

5.3.15 **Control of Monitoring and Measurement Equipment** - The supplier shall have sufficient and adequate Inspection, Measuring and Test Equipment to verify the conformity of the product or service to its specifications.

5.3.15.1 The equipment shall be maintained and periodically calibrated to standards, which are traceable to National Standards.

5.3.15.2 A unique number and indication of its calibration status shall identify each piece of equipment.

5.3.15.3 A record shall be maintained for each piece of equipment showing the equipment's identity number, frequency of calibration check, check method and check result against the acceptance criteria.

5.3.16 **Control of Nonconforming Product** - The supplier will maintain procedures to control non-conforming product and prevent its inadvertent use. These shall include methods for identifying, segregating, evaluating, documenting and disposing of the product.

5.3.16.1 Rectification by repair shall be subject to prior approval by submission of full details through the Luminator Purchasing Department. Repaired and reworked product shall be re-inspected to confirm conformity with specification requirements.

5.3.16.2 The supplier shall notify Luminator of any nonconforming product. Nonconforming product cannot be shipped to Luminator without Luminator's written approval.

5.3.16.3 The supplier shall also notify Luminator of any nonconforming product that the supplier has shipped.

5.3.16.4 The supplier shall obtain Luminator approval for nonconforming product disposition.

5.3.17 **Corrective Action** - The supplier shall maintain documented procedures for taking corrective action to prevent the recurrence of non-conforming product and for ensuring such actions are effective. This shall include 100% inspection while the causes are being investigated and preventive actions are being implemented.

5.3.17.1 Written notification not requiring a formal response for discrepancies of a lesser degree, such as those that do not affect usability, incorrect documentation, or for immediate notification of non-conformances prior to MRB disposition, is communicated through Purchasing and/or QA via email.

5.3.17.2 Written notification requiring a formal response for discrepancies that have an effect on usability, repetitive defects from the same supplier or deficiencies noted in a supplier audit is done through the issuance of a SCAR Form 902263. The supplier shall formally advise Luminator of the causes, actions being taken and implementation date, when notified by Luminator of receipt of non-conforming product or service.

5.3.17.3 Lack of response to any request or continued repetitive defects require a decision by quality assurance on whether to consult with the supplier or, if necessary, recommend the supplier for disqualification.

5.3.18 **Preservation of Product** - The supplier will maintain documented procedures to control the methods used for handling, storage, packaging and delivering the product to prevent damage or deterioration.

5.3.18.1 The product shall be packaged to preserve product quality to the point of receipt at Luminator premises.

5.3.18.2 Hazardous product, product requiring special storage instructions and product with limited shelf life must be clearly marked on each container to indicate the restrictions or limitations of use. All dispersible containers within a delivery shall be marked with the product identification.

5.3.19 **Design Services** - When the Supplier is to provide design services and/or products, Luminator Purchasing, in conjunction with Luminator Engineering will provide to the Supplier a defined operational envelope and any test, examination, and inspection instructions required for acceptance. Prototype testing and acceptance, design review and approval, and production testing criteria will be defined prior to the receipt of production products and/or services.

5.3.20 **Acceptance Authority Media** - When acceptance authority media are used (e.g., stamps, electronic passwords), the organization shall establish appropriate controls for the media.

5.3.21 **Notification of Escapement** - If the supplier knowingly shipped a nonconforming product to Luminator they MUST notify us in writing immediately.

5.3.22 **Counterfeit Parts** – Suppliers shall plan, implement, and control processes, appropriate to the supplier's organization and the product, for the prevention of counterfeit or suspect counterfeit part and their inclusion in product(s) delivered to Luminator or the ultimate customer.

5.3.23 **Personnel** - All suppliers are required to ensure that their personnel are aware of:

a. Their contribution to product or service conformity;
b. Their contribution to product safety
c. The importance of ethical behavior

6.0 Procedure

6.1 Selection, Evaluation and Approval of New Suppliers

6.1.1 A supplier is selected by either Engineering or Purchasing. Other departments may suggest a supplier based on their previous experience of the supplier's ability to provide a prototype or sample.

6.1.2 Each supplier will be evaluated by Quality Assurance, Purchasing and Engineering.

6.1.3 In addition to the supplier's quality system, the supplier will be evaluated on their ability to meet our delivery schedule, order quantities, cost of service or product. Further evaluation may include studying their web site for capabilities, determining risk, reviewing results of FAI samples, reviewing a completed Form 902757 Special Process Survey, and verifying customer-approved special processes and published data.

6.1.4 If an onsite assessment is required the type and extent is determined by Quality Assurance and Purchasing when conducting the risk analysis during the approval process for new suppliers, ref. form 902638.

6.1.5 Once the supplier has met Luminator's requirements Quality Assurance, Purchasing and Engineering will sign off the supplier survey, form #902117. Quality Assurance will activate the supplier in the SyteLine after Accounting has received a completed New Supplier Form 902638 and added them to the Vendor Master. QA controls the approval status and only approved suppliers can be issued PO's.

6.1.6 A supplier survey is not required for suppliers that provide a service or software that does not go into a finished product.

6.1.7 Luminator maintains an approved supplier list (register) that includes approval status (e.g., approved, certified, disqualified, restricted or inactive) and the scope of approval by Commodity Code (e.g., product type, process family).

6.2 Supplier Performance Review

6.2.1 Luminator reviews the supplier's performance quarterly at a minimum. Performance review is focused on the Top 25 Production suppliers based on revenue. Data from ERP will be queried for the suppliers Quality, On Time Delivery, and overall performance. Other data such as MRB history, SCARs issued and SCAR response time may be considered in the review. Ref. QL-127

6.2.2 Supplier's with poor quality and/or on time delivery will require special action(s) or controls by Purchasing and/or Quality Assurance.

6.2.2.1 Actions taken by Luminator may include issuing a formal SCAR or the supplier will be requested to attend a meeting with Luminator to develop a corrective action plan, or the supplier may be put on probation based on time or number of lots received. A SCAR may be issued as a tool to monitor their performance during the probationary period.

6.2.2.2 In some cases, the supplier approval status may change depending on the results of the performance review. Quality is responsible for changing a supplier approval status. If Luminator's decision is to deactivate the supplier then Purchasing will take the action to notify Quality that the supplier is to be changed to an "Inactive" status.

6.2.2.3 Depending on the circumstances Quality can temporarily change the supplier status for controlled use in ERP

6.2.2.4 An onsite visit or assessment may be deemed necessary.

6.2.2.5 Luminator will monitor their performance on future receipts. A supplier performance RAIL may be used to record actions taken.

6.3 Supplier Survey

6.3.1 A supplier is required to complete and submit to Luminator a Supplier Survey, form #902117 within a reasonable amount of time so that Luminator can determine if the adequate process controls are in place. If the supplier has an accredited QMS then a copy of their certificate must accompany the survey.

6.3.2 If the supplier's quality system is not certified to an international quality standard then it must complete the checklist on page 2 of the Supplier Survey form.

6.3.3 Special Processes

6.3.3.1 For Luminator typical special processes are: Passivation, Chemical Conversion Coating, Anodic Coating or Electroplating.

6.3.3.2 Luminator considers a first-tier supplier to be qualified to perform special processes when they are NADCAP, Customer approved or Luminator approved.

6.3.3.3 To verify the supplier has controls of the wet processes Luminator requires the supplier to complete the special process survey form 902757. After the survey is received and reviewed, Luminator will validate the supplier's processes with an onsite validation. Validation of the supplier's processes includes verifying that personnel are qualified and equipment is suitable to achieve planned results. Luminator will maintain records of the validation.

6.3.3.4 Re-validation of the supplier's processes, equipment and qualified personnel shall be performed by one or a combination of the following:

a. periodic onsite visits to verify equipment and qualified personnel
b. periodic requests for information to verify equipment and qualified personnel
c. outside laboratory testing of product/coupon(s) to verify conformance to Luminator's drawing requirements

6.3.4 Luminator will retain the supplier surveys and QMS certificate(s). Luminator will request a new QMS certificate when the existing one expires from the Top 25 suppliers.

6.4 Supplier Disqualification

6.4.1 A supplier can be disqualified for specific issues or a combination of reasons. A Supplier's responsiveness and effectiveness of actions taken will determine the final decision taken by Luminator.

6.5 Re-Qualifying a Supplier

6.5.1 If a supplier is disqualified a supplier can be re-qualified based on the same evaluation as a new supplier, see Section 6.1 of this document. Additional actions taken by Luminator may include but not limited to:

6.5.2 Put on probation for a specific period of time so that Luminator can monitor their performance. A SCAR may be issued to facilitate monitoring their performance.

6.5.3 Subject to source inspection.

6.5.4 Subject to a process audit

6.6 Supplier Corrective Action

6.6.1 Written notification requiring a formal response for discrepancies that affect usability, repetitive defects from the same supplier, or deficiencies noted in a supplier audit is done through the issuance of a SCAR, form 902263 or equivalent. The supplier shall formally advise Luminator of the causes, actions being taken and implementation date, when notified by Luminator of receipt of nonconforming product or service.

6.6.2 Lack of response to the SCAR or continued repetitive defects require a decision by quality assurance to escalate the SCAR to the supplier's management, an on-site visit or, if necessary, recommend the supplier for disqualification.

6.6.3 QA tracks the status of all SCARs including processing, review, approval, follow-up, verification, re-issue, disapproval, and closure.

6.7 Verification of Purchased Product

6.7.1 The supplier shall provide objective evidence of the conformity of the product (e.g., accompanying documentation, C of C, test records, x-rays (when applicable) with each shipment.

6.7.2 Verification activities may include inspection and audit at the supplier's premises. Luminator may delegate verification to the supplier. If Luminator delegates verification to the supplier, the requirements for delegation shall be defined by Luminator and a register of delegations will be maintained by Luminator.

6.7.3 Luminator will verify compliance at receiving inspection and/or by testing product. Verification shall include review of the required documentation.

6.7.4 When Luminator plans to perform verification at the supplier's premises, Luminator will state the intended verification arrangements and method of product release in the purchasing information.

6.8 Quality Records

6.8.1 The supplier shall maintain quality records for 10 years plus current year unless otherwise notified. Prior to dispositioning any records that exceed the retention requirements, the supplier shall notify Luminator Quality Assurance in order to receive disposition instructions.

6.8.2 Luminator shall retain records of the results of supplier evaluations and any necessary actions arising from the evaluations for a minimum of 10 years plus current year or as required.