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Delta Systems, Inc.
Quality Systems

SUPPLIER QUALITY
MANUAL

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1.0 Introduction

Delta Systems, Inc. is committed to supplying the highest levels of quality, workmanship, and service to our customers. Delta Systems, Inc. recognizes the need to work closely with the supply base in order to continuously improve quality performance and maintain competitive cost initiatives. This document will outline our supply base quality system needs and regulatory requirements.

1.1 Purpose: The purpose of this Supplier Quality Manual (SQM) is to explain Delta Systems, Inc.'s quality expectations and requirements from our supplier base.

1.2 Scope: This SQM will apply to all current and potential new suppliers of raw material, components, service, and sub-contracted processes.

1.3 Validation: Delta Systems, Inc. reserves the right to conduct on-site verification audits at supplier location regardless of third party quality system certification or registration. Delta Systems, Inc. may exercise this right at any time.

1.4 Reference Material: The following Standards may be referenced:

- ISO
- N.I.S.T

2.0 General Requirements

2.1 Quality Management System Requirements: Delta Systems, Inc. prefers that the supplier base maintain a Quality Management System that encompasses the elements from the ISO 9000 standard and will reward points within a supplier audit and or score card if that QMS exists.

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2.2 Submission Requirements:

- 2.2.1 The scope of the PPAP process encompasses all new raw material and component submissions, including change notifications
- 2.2.2 Submission Level: The default submission level for all initial PPAP will be Level 3. See Appendix: A
- 2.2.3 PPAP Packages shall be submitted to the Delta Systems, Inc. Quality Department
- 2.2.4 Product may not be shipped until written PPAP approval has been received from Delta Systems Inc. in the form of an accepted PPAP or other arrangements have been made prior to shipping.

2.3 Statistical Techniques:

- 2.3.1 Supplier should utilize statistical techniques such as Process Capability Studies, Statistical Process Control, Design of Experiments, and Gage R&R studies where critical characteristics are defined.

2.4 Critical Characteristics: Critical characteristics are defined as those characteristics that affect form, fit, function & performance of a given material or product.

- 2.4.1 Critical Characteristics for fit and function will be denoted on the Delta Systems, Inc. engineering drawings. The symbol will be the Delta symbol underlined:



- 2.4.2 Critical Characteristics for process will be denoted on the Delta Systems, Inc. engineering drawings. The symbol will be an open ended triangle with parallel lines above:



2.5 Process Capability:

- 2.5.1 Process Capability Requirements for all critical characteristics defined by Delta Systems, Inc. shall have a CpK of ≥ 1.33 unless otherwise agreed upon prior to production of product. Suppliers should also chose key process characteristics to monitor their manufacturing process internally and strive for a six sigma level ($CpK \geq 2.00$).
- 2.5.2 If at anytime a defined critical characteristic process / product falls below the Cpk requirements the supplier shall notify Delta Systems Inc. with containment actions. The root cause and intended corrective

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actions along with verification of actions must be relayed to Delta Systems Inc. in written format through the Delta Systems Inc. corrective action system or through the suppliers corrective action system within 30 days of containment. Short term sorting actions may be requested if the product is required at Delta Systems Inc. All additional emergency-shipping costs will be at the expense of the supplier. Please see non conforming material section 2.10 for additional requirements when processing non conforming material.

2.6 Control Plans / Failure Mode Effects Analysis

Control Plans, DFMEA and PFMEA shall be completed for all products, and included in the PPAP Submission. Delta Systems, Inc. reserves the right to request that the supplier following a DSI control plan if desired.

2.7 Material Certifications: Material certifications shall accompany all shipments of raw material lots specifying conformance to Delta Systems, Inc. purchasing and validation testing specifications, if defined. If an alternate raw material source is desired, the supplier shall supply a Level 3 PPAP to certify the additional raw material supplier prior to manufacturing product. If a raw material shortage is in effect and the supplier must use an alternate supplier, prior to submitting a PPAP, the supplier shall request a deviation from Delta Systems, Inc. This deviation request shall include validation testing to show that the material is equivalent or superior to the raw material currently being received from the primary supplier.

2.8 Engineering Changes / Deviations: All engineering change requests or deviation requests shall be submitted to Delta Systems, Inc.’s Quality Department for approval prior to implementation or shipment. A PPAP may be requested with supporting layout and/or test results validating the request. These changes include any or all changes to the normal process flow originally stated to Delta Systems Inc.

2.9 Control of Non-conforming Material/Notification:

- 2.9.1 Suppliers shall have a system in place to contain, control, and disposition nonconforming product or material.
- 2.9.2 Suppliers shall have traceability to smallest lot size available.
- 2.9.3 In cases where nonconforming material or product is discovered and may have been shipped to Delta Systems, Inc., a system of notification and positive recall must be in place to ensure timely notification to Delta Systems, Inc.
- 2.9.4 If nonconforming product is detected at Delta Systems, Inc. the supply may choose from one of the following options:

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- Supplier may have the material returned at the suppliers' expense and replaced in a timely manner. All expedited shipping costs will be at the supplier's expense.
- Supplier may sort for the nonconformance at Delta Systems, Inc. by providing their own labor or incur the labor costs for a Delta Systems, Inc. sort at the current labor rate.
- Supplier can have Delta Systems Inc. discard of the material and send replacement material.
- Supplier may request alternative that must be approved by Delta Systems, Inc. Quality Manager.

2.10 Corrective Actions:

- 2.10.1 Suppliers shall have a corrective action system in place utilizing root cause analysis and containment procedures. Delta Systems, Inc. will provide the preferred Supplier Corrective Action form.
- 2.10.2 Upon discovery of suspect or discrepant material, the supplier will be notified immediately, and where applicable, a sample will be sent.
- 2.10.3 An administration fee of \$100.00 will be applied to all SCAR forms for labor used to attend to a supplier's non-conformance.
- 2.10.4 A response will be required within 24 hours as to the containment and disposition plan for the discrepant material, unless other actions have been communicated to Delta Systems Inc.
- 2.10.5 A formal corrective action response will be required within two weeks, outlining the root cause, long-term corrective actions and verification of those corrective actions within an 8D format.
- 2.10.6 CA's shall be closed upon receipt and approval of corrective action. (No longer then 30 days, unless otherwise notified by supplier, where actions may exceed 30 days).

2.11 Gage Calibration:

- 2.11.1 Suppliers shall have a system in place to ensure the proper calibration and maintenance of any and all gages and test equipment used to determine product quality.
- 2.11.2 All calibrations must be traceable back to N.I.S.T.

2.12 Measurement System Analysis:

- 2.12.1 The supplier shall have a system in place to control the accuracy of their measurement system.
- 2.12.2 Gage R&R 0-10% shall be considered acceptable.

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- 2.12.3 Gage R&R 10% - 30% must have a continuous improvement plan in place.
- 2.12.4 Gage R&R above 30% is unacceptable. Gage R&R's that exceed 30% may be approved based on the measurement device being used.

2.13 Traceability: Suppliers shall establish a system to identify the product through all stages of production within their facility. This shall include storage, delivery, subcontractor operations and other outside process such as heat treating and plating. Supplier shall be able to contain within a defined interval. Ex: By date code, lot #, qty, etc.

2.14 PPM Requirements: Delta Systems, Inc. expects suppliers to strive for 0 PPM. Continuous improvement programs may be considered for suppliers that exceed 700 PPM on a case by case basis, if applicable.

2.15 Supplier Score Card: Delta Systems, Inc. will provide scorecards annually (based on a calendar year) to suppliers shipping within the top 5 sales volumes. The scores will be based on the following (please refer to the DSI scorecard for specifics on scoring of each area):

- Product Quality
- On-time delivery
- Customer Service
- Cost

3.0 Other Requirements

3.1 Warranty: If any warranty claims, made against Delta Systems, Inc., are traceable back to a supplier nonconformance, Delta Systems, Inc. will require the supplier to make retributions back to DSI at the cost of the warranty claim from Delta Systems Inc.'s customer. In addition a fee of \$500.00 for cost used during root cause analysis will be automatically charged to the supplier. Any external testing costs incurred by outside laboratories to come to the root cause will be at the expense of the supplier that produced and delivered the nonconformance.

3.2 HAZMAT: Delta Systems, Inc. requires MSDS sheets accompany any hazardous materials that are shipped to our facility.

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Agreement:

By signing this agreement the supplier is agreeing to the terms stated. The supplier will conform to all elements described in this document until an alternate or revised agreement is offered:

Company Name: _____

Company Address: _____

Supplier Rep: _____

Date: _____

Purchasing Rep. (DSI): _____

Date: _____

Quality Assurance Rep (DSI): _____

Date: _____

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Appendix A:

PPAP Submission & Customer Notification Requirements:

Default Submission Level for all initial PPAP's: Level 3

- Level 1: Warrant only (and for designated appearance items, an Appearance Approval Report) submitted to the customer
- Level 2: Warrant with product samples and initial supporting data.
- Level 3: Warrant, samples, and complete supporting data.**
- Level 4: Warrant and other requirements as defined by the customer.
- Level 5: Warrant with product samples and complete supporting data available to review at the supplier's manufacturing location.

Initial Submission Requirements: Level 3

The supplier shall submit for PPAP approval prior to the first production shipment in the following situations, unless prior alternatives are agreed upon:

1. Any new part or product. (Specific part, material, or color not previously supplied to the specific customer.)
2. Correction of a discrepancy on a previously submitted part or product.
3. Engineering change to design records, specifications, or materials for production part/product number(s).
4. For Bulk Materials Only: Process technology new to the supplier, or one not previously used for this product.
5. Use of other construction or material than was used in the previously approved part or product.
6. Production from new or modified tools (except perishable tools), dies, molds, patterns, etc., including additional or replacement tooling.

Customer Notification Requirements: Level 2

The supplier shall notify the responsible product approval activity of any design or process changes as follows unless prior alternatives are agreed upon:

1. Production following refurbishment or rearrangement of existing tooling or equipment.
2. Production from tooling and equipment transferred to or from an additional plant location.

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3. Change of subcontractor for parts, non-equivalent materials, or services (i.e.: heat-treating, plating) that affect customer form, fit, function, durability, or performance requirements.
4. Product produced after the tooling has been inactive for volume production for 12 months or more.
5. Product and process changes related to components of the product manufactured internally, or those by subcontractor that impact form, fit, function, performance, and durability. The supplier shall concur with the customer regarding any request by a subcontractor before submission to the customer.
6. Change in inspection/test methods – new techniques.
7. For Bulk Materials only: New source of raw material, change in product appearance attributes where there is no appearance specification, revised parameters in the same process PFMEA, and change outside DFMEA (product composition, ingredient levels) of the approved product.

Situations Where Customer Notification *Is Not* Required:

1. Changes to component level drawings. Manufactured internally or by subcontractors, that does not impact the design record.
2. Tool or equipment movement within the same plant that does not involve change in process flow or disassembly.
3. Changes in equipment (same process flow with same basic technology or methodology).
4. Rebalance of operator job content with no change in flow.
5. Identical gage replacement.
6. Changes resulting in reduced RPN on PFMEA (with no change to process flow).
7. Bulk Material Only:
 - Changes with the DFMEA (formulation range, packaging design) of the approved product.
 - Changes within PFMEA (process parameters)
 - Changes that do not significantly affect Special Characteristics.
 - Change in subcontractor producing location of a raw material that has no Special Characteristics.
 - New source of raw material that has no Special Characteristic.
 - Tightening of Customer/Sales acceptance tolerance limits.

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