



Doc ID: C08

Title: Statistical Process Control

Aerojet Quality Note

C08

Rev # Date 5 09/25/2015

Scope: Any process or characteristic-related data collected at the supplier or the supplier's subcontractor's facilities for the purpose of process control.

Application: Development:

Where process/product characteristics of interest (aka *candidate* KPC's) are established by the purchase order and/or referenced drawing.

Production:

Where Key Process/Product Characteristics (KPC's), as defined in AS9100C, are established and/or Statistical Process Control (SPC) is required by the purchase order and/or referenced drawing.

Requirements:

For development, items 1, 2, 3 and 4 are required as specified by the referenced drawing and/or purchase order.

- 1. The supplier shall validate measurement capability through Gage Repeatability & Reproducibility (Gage R & R) analysis.
- 2. The supplier shall collect variables data on KPC's and/or candidate KPC's. This shall not merely be requirement pass/fail results.
- 3. The supplier shall submit KPC and/or candidate KPC data. The data shall be collected from all hardware manufactured under this purchase order including that from hardware that was not delivered to Aerojet.
- 4. In the event that characteristics and/or related processes are found to have questionable stability and/or capability, Aerojet reserves the right to require the supplier to provide root cause and take appropriate corrective action in accordance with SAE AS9103, Appendix A, Sections 4 and 5 (except that maintenance of a Process Control Document is at the supplier's discretion).

For production, the development items above AND items 5 and 6 are required as specified by the referenced drawing and/or purchase order.

- 5. The supplier shall implement SPC, which includes the use of control limits and control charts. SPC shall be performed in accordance with the requirements of SAE AS9103 Section 4 and Appendices A and B.
- 6. Certain KPC's shall be held to a stability goal of Cpk of 1.33 or greater. If the Cpk is not met, then that KPC shall be inspected 100% prior to hardware

This document is an integral part of the contract (purchase order) in which referenced. **Applicable Revision:** The revision in effect at the time the purchase order is placed.



Doc ID: C08 Page 2 of 2

Title: Statistical Process Control

delivery, with objective evidence of screening results provided with each shipment.

Deliverables: KPC and/or candidate KPC data shall be in a standardized electronic format

specified by the buyer. Transmission of this data shall occur no later than the time

of shipment of the associated hardware.

When SPC is required, SPC methodology shall be submitted to Aerojet for approval prior to manufacture via a <u>Supplier Submittal Request (SSR)</u>, which can be found on Supplier Net.