

1. SQAR Number	SQAR-37
2. SQAR Revision	8
3. SQAR Title	Variation Management for Key Characteristics – AS9103 Required
4. SQAR Detail Description	
<p>The Supplier is required to validate the quality of their product, whether produced at the Supplier’s facility or at a subcontracted facility, using Statistical Process Control (SPC) as the variation control method (as described in AS9103). Application of SPC techniques shall be considered for characteristics identified as Key, Critical, Major, and Special in the technical data package or other document (QAD). The Supplier shall provide written justification for all such characteristics where SPC is determined to be inappropriate.</p> <p>A plan for the implementation of SPC shall be submitted by the Supplier for review and approval by the Buyer prior to the initiation of production. Where FAI is contractually required, the SPC plan shall be submitted to and approved by General Dynamics OTS prior to First Article inspection by General Dynamics OTS. Unfortunately, many Suppliers may not be able implement true SPC on their shop floor for various reasons; i.e. data taken at the end of the manufacturing process or final inspection. When a Supplier is not able to react immediately to data, then true SPC is not implemented at the facility and this situation must be explained in the SPC Plan.</p> <p>The SPC plan shall detail the process capability studies to be performed, the SPC methods to be applied and a time-phased schedule for total implementation. The SPC plan shall also identify the operations where SPC will be implemented; the sample size and frequency of measurements; the criteria to be used for modifying the sample size and frequency; the Quality Assurance procedures to be used to validate the accuracy, adequacy, and interpretation of the data; criteria to be used for determining an out of control condition; identification of the responsibility for performing measurements and corrective actions; and the corrective action procedures to be used and actions to be taken upon statistical signal or detection of an out of tolerance item.</p> <p>Statistical evidence of item quality in the form of control charts shall be prepared and maintained for each characteristic identified in the plan. The recording of data and plotting of charts shall be updated at each sampling interval. The charts shall identify all corrective actions to be taken upon statistical indication that an item is moving toward an out of control condition. All charts shall be considered quality records to be retained by the Supplier in accordance with requirements as stated in the Purchase Order, and shall be made available for review or provided upon the request of General Dynamics OTS.</p> <p>When SPC has been implemented and the processes have demonstrated a state of statistical control (minimum of 3 consecutive lots unless otherwise stated), the Supplier may request that sampling be reduced via a Request for Change (RFC). Upon approval by General Dynamics OTS, acceptance shall then be based on the reduced sampling, the control charts, and the SPC plan approved by General Dynamics OTS. General Dynamics OTS shall not unreasonably withhold approval. At the discretion of General Dynamics OTS, should the process warrant, the authorization for reduced inspection may be withdrawn.</p> <p>A mitigation plan is required for those features not meeting the following requirements (unless specified in another document):</p> <ol style="list-style-type: none"> a. Cpk/Ppk Requirement for Plastic Parts equal to/greater than 1.0 b. Cpk/Ppk Requirement for Metal Parts equal to/greater than 1.33 (Majors, Minors) c. Cpk/Ppk Requirement for Metal Parts equal to/greater than 1.67 (Criticals) 	
5. Disclaimer	
<p>The following Supplemental Quality Assurance Requirement (SQAR) clause is a requirement when specified by number within the Request for Quote (RFQ), Purchase Order (PO), or Quality Assurance Document (QAD). In the event of conflict between the General Supplier Quality Assurance Requirements document, PAL 164, and a SQAR flowdown, the SQAR will always supersede. Flowdown of this SQAR to sub-tier suppliers is required to ensure final product compliance.</p>	