Q648 Commercial Baseline Qualification First Article Test (Rev 09/04/19)

The Seller shall perform Baseline Qualification First Article Testing (FAT) to ensure that the systems, subsystem, component, and material comply with all TDP requirements. The Baseline Qualification FAT shall include verification of all TDP characteristics and tests as documented in the prints, specifications, etc.

I. Requirements Prior to Execution of the Baseline FAT

1. Baseline FAT Plan

a. GD-OTS will author the Baseline Qualification FAT Plan and will seek input from the supplier as needed to ensure accuracy and adequacy of the plan. Suppliers are required to comply with all aspects of the approved plan.

i. The Plan will cover all characteristics of the TDP, prints, specifications, etc. to the extent that a sub tier supplier generates characteristics referenced by an applicable print or specification, these characteristics shall be incorporated in the plan. Since the Baseline Qualification FAT Plan may be extensive and extend to sub tier supplier's facilities, the Seller shall provide GD-OTS an anticipated timeline for execution of the various pieces of the FAT.

The use of standard rework procedures shall be documented and included in the Baseline Qualification Plan and validated as part of the execution. The Seller shall work with GD-OTS in planning the content of the Baseline Qualification FAT Plan to satisfy the needs of the Seller.

ii. GD-OTS will notify the Seller when the plan has been approved for execution and coordinate schedule with the Seller.

iii. GD-OTS will generate and provide to the Seller data sheets in accordance with the requirements of SAE Aerospace Standard AS9102, using Form 1: Part Number Accountability; Form 2: Product Accountability – Raw Material, Specifications, and Special Process(es), Functional Testing; and Form 3: Characteristic Accountability, Verification and Compatibility Evaluation. The Seller shall supply information regarding the gaging/test equipment to be used to accomplish each required inspection. The Seller's responsibility shall be to enter the results of each inspection/test on the appropriate AS9102 forms, provide required material and process certifications, etc. at the time of the execution of the Baseline Qualification FAT.

iv. Sample sizes for validation shall be as noted on the AS9102 data sheets.

v. A series of AS9102 data sheets will be provided for each end item deliverable to GD-OTS, applicable sub-assemblies, sub-components and raw materials.

b. GD-OTS will provide to the Seller a “ballooned” print numbering each characteristic, dimension, and note.

c. The Seller shall provide a Baseline Process Flow Map for each end item deliverable to GD-OTS. The baseline map shall include process step description, equipment used at that process step (including make, model, and serial number), the name, number, and revision level of any process work instructions applicable to that operation. The map shall also include a description of all inspection and test equipment used at that process step; indicate if Statistical Process Control (SPC) is used at that process step, any standard equipment adjustments and whether there are any approved rework processes. Baseline Process Flow Maps shall also be supplied for sub tier suppliers that supply components that are detailed in a print as well as for suppliers of Special Processes (e.g. painting, plating, chromate finishing, etc.). COTS items, raw materials and distributor supplied items are exempted from the Baseline Process Flow Map requirement. The Baseline Process Flow Map shall be submitted in the format of the GD-OTS Process Flow Template, QS-TP-21.0.1. The Baseline Process Flow Map shall be provided to GD-OTS prior to the execution of the Baseline Qualification FAT. The template can be obtained on the GD-OTS SharePoint collaboration site. Seller format is acceptable if approved by GD-OTS.

d. Requirements for Inspection and Test Equipment Validation covered in Clause Q618 shall be completed prior to execution of the Baseline Qualification FAT.

II. Baseline Qualification FAT Execution

1. Once the Baseline FAT Plan has been approved, provision shall be made for GD-OTS representatives to witness all or any portion of the execution of the Baseline Qualification FAT at their discretion. Seller shall notify GD-OTS in writing what date they will be ready to begin execution of the Baseline Qualification FAT a minimum of thirty-five (35) calendar days in advance of that date to allow for required notification to the customer.

2. Samples for the Baseline Qualification FAT shall be manufactured using the process and equipment that will be used for production and shall be selected from the first production lot. Where MIL-STD-1168 lot numbering is required, lots shall be identified as a First Article Lot in accordance with MIL-STD-1168. The size of this lot shall be approved by GD-OTS for items at the deliverable part number level. First Article lots from sub-tier suppliers will be expected to be of sufficient size to support the First Article lot at the deliverable part number level.

3. Testing and Inspection shall be performed at the facility at which the inspection and test equipment resides.

III. After Baseline Qualification FAT Execution

1. Upon successful execution of the Plan the supplier shall provide GD-OTS with all test reports, certifications, and data sheets completed as part of the execution of the Baseline Qualification FAT. This information shall be provided to GD-OTS within seven (7) calendar days of the completion of the execution of the Baseline Qualification FAT.

2. Production beyond the first article lot may not begin until contractually directed by GD-OTS.

3. GD-OTS will prepare the Baseline Qualification FAT Report. The Seller shall provide assistance to GD-OTS as needed to support any clarifications or additional information required.

4. Residual components of the Baseline Qualification Lot shall be considered sellable product provided they meet all TDP requirements, acceptance inspection AQL, and LAT requirements.

Changes to the Qualified Baseline is a formal time consuming process that requires GD-OTS approval. The proposed changes should be planned months in advance of required implementation. The table below contains a listing of changes that require notification and approval. Seller shall request and receive written GD-OTS approval prior to making any changes that deviate from the qualified baseline (either that qualified in the Baseline Qualification FAT or by subsequent qualified modification). This change requirement shall be applicable to the lowest level of supplier in the supply chain at which the characteristic is generated. The table below contains a listing of changes that require notification and approval. Seller must make a formal request for any such change. Seller's request for such a change shall be formally submitted to the GD-OTS Buyer. Note: the manufacturer of a Commercial/COTS item used for Baseline Qualification is considered part of the Qualified Baseline and subject to these requirements should there be a need to change the manufacturer. Commercial/COTS items may be purchased from any distributor as long as the manufacturer is the manufacturer established as part of the Qualified Baseline. (Commercial/COTS items are as defined in FAR 2.101)

GD-OTS will determine the level of verification required for every change. Depending on the level of change, No Validation, Internal Validation, First Piece Inspection (FPI), a First Article Test (FAT), a Tailored FAT, or a Requalification may be required. The Seller shall not implement such changes, or commence validation activities without prior review and approval of GD-OTS. Once the appropriate level of validation has been agreed upon, the Seller shall proceed with validation in accordance with the following requirements. Validation activities shall be performed with the facilities, production processes, methods, materials, personnel and equipment that will be used for production.

FAT/TFAT – Seller submits Plan using the GD-OTS FAT Plan Template, QS-TP-10.6.1. Execution of the validation shall not begin until the Plan has been approved by GD-OTS. If a Plan is rejected, Seller has fifteen (15) calendar days to submit a revision. Upon approval of a Plan, Seller must

give a minimum of thirty-five (35) calendar days' notice of the planned execution date. Once the Plan has been executed, seller has fifteen (15) calendar days to submit a validation Report using the GD-OTS FAT Report Template, QS-TP-10.6.2. Should a report be rejected, Seller has fifteen (15) calendar days to submit a revision. The template can be obtained on the GD-OTS SharePoint collaboration site. Production with incorporation of the change shall not begin without written authorization from GD-OTS.

FPI – Seller submits plan using the GD-OTS FPI Plan Template, QS-TP-10.6.3. Execution of the validation shall not begin until the Plan has been approved by GD-OTS. If a plan is rejected, Seller has fifteen (15) calendar days to submit a revision. Upon approval of a plan, Seller must give a minimum of thirty-five (35) calendar day notice of the planned execution date. Once the plan has been executed, seller has fifteen (15) calendar days to submit a validation report using the GD-OTS FPI Report Template, QS-TP-10.6.4. Should a report be rejected, Seller has fifteen (15) calendar days to submit a revision. The template can be obtained on the GD-OTS SharePoint collaboration site. Production with incorporation of the change shall not begin without written authorization from GD-OTS.

Internal Validation is performed at the cognizance of the Seller. Seller shall retain records of the results of the internal validation and have them available for review upon request.

Validation Not Required - Notification is not required for Attachment 0012 Ref#s 308 and 309 however, these activities shall be documented internally by the subcontractor making the change. A PCR notification and GD-OTS approval is required for Ref# 310.

Inspection/Test Equipment Validation – Inspection and Test Equipment Validation shall be completed in accordance with the requirements of Q618.

Seller shall flow the substance of this clause to its subcontractors, including this sentence, changing the relationship of the parties as appropriate to preserve the intent of the words.

Attachment 0012
PROCESS CHANGES
W31P4Q-14-C-0154

REF#	Description of Changes
100	**Design Changes**
101	Design changes or changes resulting in change to system MOD designation
102	Any change impacting safety or system performance requirements
103	Changes that affect items requiring outside agency involvement (i.e. Navy Weapon System Explosive Safety Review Board (WSESRB), Army Fuze Board, etc.)
104	Changes that impact either system or component level interface requirements
105	Changes resulting from unexpected events such as part obsolescence
106	Use of a lower reliability part
107	Performance data for the new or redesigned item not sufficient to demonstrate that it will perform to the same extent as the item it is replacing

200	**Changes to Manufacturing Facility**
201	Manufacturing plant location change for explosives or an item with a characteristic classified as Safety, Special, Critical, Major or Minor.
202	Manufacturing plant location change for an item without a characteristic classified as Safety, Special, Critical, Major or Minor.
203	Out of production over twelve months for explosives or an item with a characteristic classified as Safety, Special, Critical, Major or Minor.
204	Out of production over twelve months for an item without a characteristic classified as Safety, Special, Critical, Major or Minor.
205	Addition of a production line for explosives or an item with a characteristic classified as Safety, Special, Critical, Major or Minor.
206	Addition of a production line for an item without a characteristic classified as Safety, Special, Critical, Major or Minor.
207	Dismantling and restarting the production line for explosives or an item with a characteristic classified as Safety, Special, Critical, Major or Minor.
208	Dismantling and restarting the production line for an item without a characteristic classified as Safety, Special, Critical, Major or Minor.
209	Machine Control Upgrades for an item with a characteristic classified as Safety, Special, Critical, Major or Minor.
210	Machine Control Upgrades for an item without a characteristic classified as Safety, Special, Critical, Major or Minor.
211	Replacing an existing piece of machinery or test equipment for an item with a characteristic classified as Safety, Special, Critical, Major or Minor.
212	Replacing an existing piece of machinery or test equipment for an item without a characteristic classified as Safety, Special, Critical, Major or Minor.
213	Adding a new machine for an item with a characteristic classified as Safety, Special, Critical, Major or Minor.
214	Adding a new machine for an item without a characteristic classified as Safety, Special, Critical, Major or Minor.
215	Machine Modification for an item with a characteristic classified as Safety, Special, Critical, Major or Minor.
216	Machine Modification for an item without a characteristic classified as Safety, Special, Critical, Major or Minor.
217	Changing the sequence of the manufacturing process that affects explosives or for an item with a characteristic classified as Safety, Special, Critical, Major or Minor.
218	Changing the sequence of the manufacturing process for an item without a characteristic classified as Safety, Special, Critical, Major or Minor.
219	Moving test equipment/machines within a facility for an item with a characteristic classified as Safety, Special, Critical, Major or Minor.
220	Moving test equipment/machines within a facility for an item without a characteristic classified as Safety, Special, Critical, Major or Minor.
300	**Changes to Manufacturing Processes**
301	Major change in manufacturing process (i.e. Casting instead of forging or hog-out)
302	Minor change in manufacturing process (i.e. Heating/Cooling durations, new rework processes, new lubricant material, in-process dimensional range) that affects explosives or for an item with a characteristic classified as Safety, Special, Critical, Major or Minor.
303	Minor change in manufacturing process (i.e. Heating/Cooling durations, new rework processes, new lubricant material, in-process dimensional range) for an item without a characteristic classified as Safety, Special, Critical, Major or Minor.
304	Replacement or major repairs to a casting and press molds for an item with a characteristic classified as Safety, Special, Critical, Major or Minor.

305	Replacement or major repairs to a casting and press molds for an item without a characteristic classified as Safety, Special, Critical, Major or Minor.
306	Minor changes to casting and press molds to maintain parting lines and reduce flashing for an item with a characteristic classified as Safety, Special, Critical, Major or Minor.
307	Minor changes to casting and press molds to maintain parting lines and reduce flashing for an item without a characteristic classified as Safety, Special, Critical, Major or Minor.
308	Preventative Maintenance or replacement of normal machining wear items (i.e. saw blades, cutting tools, etc.)
309	Performing normal machine offsets due to tool wear
310	Minor changes to work instructions that have no effect on the process (i.e. clarification)
400	**Changes to Material or Supply of Material**
401	Change in supplier of explosives or end item part for an item with a characteristic classified as Safety, Special, Critical, Major or Minor.
402	Change in supplier of end item part for an item without a characteristic classified as Safety, Special, Critical, Major or Minor.
403	Change in supplier of the material for an item with a characteristic classified as Safety, Special, Critical, Major or Minor.
404	Change in supplier of the material for an item without a characteristic classified as Safety, Special, Critical, Major or Minor.
405	Change in supplier for component within an end item part with a characteristic classified as Safety, Special, Critical, Major or Minor.
406	Change in supplier for component within an end item part without a characteristic classified as Safety, Special, Critical, Major or Minor.
407	Change from one qualified test laboratory to another qualified test laboratory for an item with a characteristic classified as Safety, Special, Critical, Major or Minor.
408	Change from one qualified test laboratory to another qualified test laboratory for an item without a characteristic classified as Safety, Special, Critical, Major or Minor.
500	**Plating and Coating**
501	New Supplier or Change in Supplier for **Plating or Coating**
502	Changes in the supply of chemicals used for cleaning or processing during **Plating or Coating**
503	Changes in cleaning, process times, temperatures, chemical concentrations, etc. used during **Plating or Coating**
600	**Changes Not Listed within Attachment 12**