

Teamvantage Supplier Development Manual

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For areas where additional details are needed to further define expectations, those details will be provided in separate documents. These additional documents include: Supplier Quality Inspection Plan (SQCP), and a list of Teamvantage employees roles and contact information specific to your company's working relationship with Teamvantage.

1) Introduction

This manual is intended to provide a foundation for forming and maintaining a successful working relationship between our organizations. This manual supplements the requirements of Teamvantage purchase orders and contracts. We anticipate these methods will be mutually beneficial to our companies as we work together.

At Teamvantage, our vision, "...Team Spirit, Positive Attitude, Integrity, Customer Satisfaction, and Continuous Self Improvement" is only possible if our customers consistently know that our components are of the highest quality in the market. In this global marketplace, our customers have high expectations, and each year these expectations increase. In order to continue providing high quality product our customers expect, and to be successful in our industry, you play an important role. As a vital link in the overall supply chain, it is imperative that we jointly focus on a commitment to quality and continuous improvement.

This means, that as a Teamvantage supplier, we ask you to focus on meeting and exceeding our expectations through:

- working closely with Teamvantage to understand our requirements,
- manufacturing consistently capable products,
- minimizing process and product variation,
- managing costs,
- preventing defects, and
- continuously improving processes.

2) Quality Management

Teamvantage encourages our suppliers to obtain ISO 9001 certification or equivalent. Those suppliers that do not hold the ISO Quality Management system certification may require approval from the Purchasing Manager and/or the Quality Manager.

Electronic (preferred) or emailed copies of quality registration certificates shall be sent to the Teamvantage Purchasing department initially. The supplier should notify the Teamvantage Purchasing department immediately of any change in quality registration status (probation or loss of registration).

Teamvantage, our customer(s), and regulatory authorities reserve the right of access to all facilities involved in the fabrication of our product and to all applicable records.

3) Confidential Information

Supplier shall not disclose information to any person outside of its employ, or used for any purpose other than to fulfill its obligations, which have been disclosed to Supplier by Teamvantage. Supplier will safeguard such information at least to the same extent as the supplier's proprietary information. Suppliers may be required to sign a nondisclosure agreement. Suppliers that require sensitive materials will retrieve these documents through a secure Teamvantage Sharefile site and the purchase order will specify which items require these documents. Sensitive documents include but are not limited to prints, databases and cad files.

ITAR (MILITARY)/EAR STATEMENT. Documents and data supplied by Teamvantage may contain technical data within the definition of the International Traffic and Arms Regulations (ITAR) or Export Administration Regulations (EAR) and is subject to the Export Control Laws of the U.S. Government. Transfer of this data by any means to a foreign person or foreign entity, whether in the United States or abroad, without an export license, ITAR exemption or other approval from the U.S. Department of the State or Department of Commerce is prohibited.

Reference website: https://www.pmddtc.state.gov/regulations_laws/itar.html

4) Quality Planning

A quality plan may be requested for parts supplied to Teamvantage. This quality plan should include all requirements for controlling the quality of the product. These requirements include (but are not limited to) incoming inspection, process controls, in process inspection, final inspection, testing, packaging and shipping. These quality plans should be reviewed and updated on a regular basis to take into account any changes to the product, corrective actions implemented etc. Assistance in quality plan development will be available to suppliers upon request. These quality plans should also be available for TEAMVANTAGE to review upon request.

5) Disaster Planning

It is preferred that Suppliers develop business continuity plans by assessing their overall operations with the intention of identifying any potential catastrophic events. Appropriate improvements should be implemented by the supplier to mitigate the probability of occurrence and degree of severity for any such potential events.

6) Process Control

Teamvantage believes that placing more emphasis on process quality as opposed to just product quality will ultimately provide a better and more consistent product. In order to develop a consistent process, a complete evaluation should be carried out to determine capability and stability of the process. Proper engineering methods are to be established and implemented to control the process. As part of an effective process control plan, Teamvantage would encourage the supplier to use some or all of the following tools:

- Process flow charts
- Process failure mode and effects analysis (PFMEA) and similar tools
- Inspection plans which identify critical part features and critical process parameters
- Gage repeatability and reliability (GR&R) on critical measurement equipment
- Statistical process control (SPC) on all critical processes
- Clearly defined processes to deal with out of control conditions
- Any other tools which the supplier may have available

If any changes need to be made to the above items or related processes Teamvantage's approval is required before implementation.

7) Product/Process Qualification

Typically, multiple runs (lots) of the supplier's manufactured product or services, including process, equipment, and product data, will be used to assess a process capability. Method validation and correlation studies may be included in this process. Teamvantage will define the specific qualification requirements in the purchase order and / or a Supplier Quality Inspection Plan and will review/approve the results on a case-by-case basis. This will determine the release of products and/or services.

8) Process Capability Measurement

When required, suppliers are expected to maintain conformance to product specifications, and also keep product consistently at desired values with minimal variation. To satisfy this requirement, supplier will achieve, and maintain a stable & capable production processes.

When not otherwise defined, Teamvantage expects suppliers to hold Cpk of 1.33 or better on all dimensions which are marked 'Critical' or similar. The Cpk reading should be calculated from a batch of no less than 32 samples and represent the entire population of components.

9) Control of Nonconforming Material

Suppliers should have a formally documented process for the control of non-conforming material. This process should include regular and timely reviews of the nonconforming material to prevent material escapes to Teamvantage and for feedback into the continuous improvement process. In addition, nonconforming or suspect material should be stored in a quarantined area away from normal stock and it should be clearly labeled as non-conforming.

As part of the control of non-conforming material the supplier should also have a fully documented material isolation process.

In the event that a supplier has manufactured components that do not meet print specification, the supplier is encouraged to communicate with Teamvantage to determine if the components may be acceptable of use on a one time basis.

Nonconforming product shall **not** be shipped without prior approval from Teamvantage.

10) Dock to Stock

To achieve a Dock to stock (DtS) status, the supplier must demonstrate that the product supplied is consistent and of acceptable quality. As defined by the corresponding product specifications and the requirements described in this manual, and demonstrated over a period of time and multiple production lots. This includes demonstrated adequacy of supplier's product testing methods with Teamvantage's CTQ's. Supplier shall submit manufacturing data to Teamvantage in an appropriate statistically-analyzed electronic file for review.

Demonstrated evidence of a supplier's effective Quality Management System (QMS), typically accomplished through an on-site audit of the process used to manufacture certified product by Teamvantage or Teamvantage approved 3rd party auditor.

Teamvantage will establish and maintain records identifying the status for each certified product, including the supplier of these products. Teamvantage will periodically perform random audits on products manufactured by suppliers. Samples will be selected from Teamvantage finished-goods inventory. Teamvantage will review a supplier's product performance on a regular basis and maintain records supporting the continued certification of products from these suppliers. (Please note that each product is assessed for dock to stock status.)

Certified products may become decertified if there is a failure to meet any of the requirements as described in this manual or the SQCP. The SCAR system may be used to manage resolution of discrepancies (See Supplier Corrective and Preventive Action section).

Supplier's product will achieve dock to stock status after:

- A. 5 consecutive lots have been accepted through receiving inspection. Dock to Stock (DTS) shipments will continue to be audited randomly to assure continued compliance to established requirements.
- B. Part inspection audits yield a minimum Ppk of all CTQ's of 1.33 on the five consecutive material lots.

-OR-

- C. Validation of process:

Minimum Ppk result of 1.33 for all CTQ's. A minimum of three separate manufacturing runs. Documented process controls in place, and monitored

11) DPAS Rated orders

In accordance with the Defense Production Act of 1950, Teamvantage shall flow down DPAS ratings to our Suppliers. There are two levels of priority ratings. (DX) Highest national defense urgency. All (DX) orders have equal priority and take preference over DO and unrated orders. (DO) Critical to national defense. All (DO) orders have equal priority and take preference over unrated orders. Each order with a DPAS rating shall have the following statement. "This is a rated order certified for national defense use, and you are required to follow all provisions of the Defense Priorities and Allocations system regulation (15 CFR 700). "(FAR 52.211-15)".

If a person finds that delivery or performance against any accepted rated order conflicts with the delivery or performance against other accepted rated orders of equal priority status, the person shall give preference to the conflicting orders in the sequence in which they are to be delivered or performed (not receipt dates). If the conflicting rated orders are scheduled to be delivered or performed on the same day, the person shall give preference to the orders with the earliest receipt dates.

12) Special Quality Requirements

There may be occasions where a component/service contains quality requirements beyond the standard Certificate of Conformance. In these cases, you may be contacted by a Teamvantage representative who will walk you through these requirements using the Teamvantage Production Part Approval Process.

13) Supplier Corrective and Preventive Action

Effective corrective action processes are essential to doing business in today's competitive marketplace. As such, they are required of each approved supplier by Teamvantage.

For Corrective and Preventive Action, the supplier will use the Supplier Corrective Action Request (SCAR) tool supplied by the Teamvantage quality assurance department. This tool is used to address specific out-of-specification product quality or delivery issues. Supplier shall respond to any Teamvantage SCAR within 10 calendar days. Suppliers are expected to complete the SCAR within 30 days, a supplier that is delinquent beyond the 30 days may be placed on "purchase order hold" until the SCAR is closed.

Suppliers are encouraged to employ Preventive Action's for improving and refining performance relative to product quality, responsiveness, delivery, cost. Teamvantage may recommend training to the supplier regarding improvement tools such as Six Sigma, Lean Manufacturing, or SPC (if deemed appropriate by Teamvantage).

Teamvantage may periodically perform a Systems/Process Audit at selected supplier manufacturing site(s). This audit may encompass a supplier process, and focuses on manufacturing systems used by the supplier to assure acceptable quality components. Audit results may be used by the supplier as a basis for process improvement. The SCAR system may be used to manage resolution of any Audit Findings.

14) First Article Inspection Reports (FAIR)

When Teamvantage requires suppliers to complete a FAIR it will be noted on the purchase order. The FAIR could be required prior to the first delivery of any part or shipped along with it (reference the purchase order for details). Subsequently each time the part undergoes any revision change or change to fit, form, function or appearance. Any discrepancies on a FAIR should be highlighted to Teamvantage, along with an explanation, prior to shipping product. (Ref. ADR process). Teamvantage Engineering may visit the supplier to expedite the FAIR approval process.

15) Material Certifications

Suppliers may be required to send a Certificate of Conformance (CofC) electronically (preferred method) or by fax to Teamvantage with each lot shipped, unless specified differently by the SQCP or purchase order. CofC product quality data shall be traceable to, and representative of, each lot of product shipped to Teamvantage. Teamvantage will request a Certificate of Analysis (CofA) in some specific cases. In exceptional cases, additional data will be requested by Teamvantage, and shall be supplied in a similar format. Refer to the SQCP or purchase order for product-specific requirements.

16) Retention of Records

Teamvantage requires product/process quality record retention by suppliers twenty - (20) years, unless specified differently by the purchase order. Certain products or situations may require longer record retention. Teamvantage maintains the right to access these supplier records as necessary for review by Teamvantage and as required by our customers and regulatory authorities. At the end of the retention period, the documents may be destroyed in the following manner. All paper documents can be shredded or incinerated; all electronic copies can be deleted from your system.

A computer-based Communication and Information Storage System is the method of choice to be used by suppliers when sending/receiving data or documents to/from Teamvantage. Appropriate data/document back-ups and maintenance should be regularly completed by the supplier to assure that no data /documents are unexpectedly lost.

17) Engineering Change Orders

Teamvantage expects suppliers will have a clearly defined process for dealing with Engineering Change Orders (ECO's) and the timely communication and distribution of the documentation. The ECO process objective is to incorporate and comply with the ECO in the shortest possible time while ensuring that a complete impact analysis is accomplished. TEAMVANTAGE expects the supplier to react immediately when an ECO is released to minimize any risk or exposure in the supply chain. Teamvantage expects to be informed immediately if risk in the supply chain exists.

18) Process Change Notification

Teamvantage recognizes that supply chain changes are a part of business, and has the following requirements for these changes.

Teamvantage requires prior notification from the supplier and a detailed description of background for this change. This notice should include technical documentation which supports the recommended or required change. Each of these changes requires pre-approval before implementation.

Teamvantage form number 5119 should be used when requesting a change. The request must be provided within a reasonable time to allow Teamvantage to evaluate the request and then agree or deny the requested change. Validation data supporting the change shall be made available to Teamvantage as applicable.

This requirement includes, but is not limited to raw material, subcontractor, test method, and supplier manufacturing process/equipment changes. Changes are not limited to the manufacturing process. A change to the location of manufacture, use of alternate materials or sub-tier suppliers would constitute a change that requires notification. These requirements also apply to sub-tier suppliers.

19) Supplier Selection and re-evaluation

Teamvantage's goal is to purchase goods and services from suppliers who have been approved.

Initially, a supplier's general capabilities will be evaluated. After approval, a Teamvantage representative may follow-up with an on-site evaluation. Each manufacturing location of a potential supplier may be evaluated / approved independently.

On-going supplier performance will be monitored by Teamvantage for Delivery, Quantity, Cost, and Quality.

Many suppliers will have the opportunity to review their scorecards on the Purchasing website on an on-going basis (see Supplier Identification table). This is optional. The supplier may request a username and password for TMI. As suppliers establish a performance record, they may be asked to participate in an on-site assessment of their organizational structure and manufacturing processes. At the discretion of Teamvantage, suppliers used one-time or infrequently may not be measured for on-going performance.

20) Supplier Designations

Approved Supplier: Suppliers earn the status of "approved" by meeting basic performance requirements and maintain a minimum supplier score of 75 points

Customer Approved Suppliers: A supplier that is designated by the customer and may or may not pass the supplier evaluation assessment and/or the supplier onsite assessment, but needs to be used to satisfy the customer's requirements Supplier performance is tracked.

Suppliers on Probation: If a supplier does not meet the outlined standard of the evaluation system, they may be placed on probation and reassessed as determined necessary until meeting Teamvantage supplier evaluation standards. If the Supplier falls below the 90% threshold, with a minimum of (7) receipts, they may be placed on probation and may be added to the Audit schedule for the following year. Supplier

Corrective Action Requests (SCAR) may be issued to suppliers that are unwilling to improve through normal processes (i.e. supplier meetings, verbal / written requests, etc). If the SCAR process proves to be ineffective and the supplier remains uncooperative Teamvantage may terminate the relationship. In cases where Teamvantage needs customer approval to change to a new source the relationship with the current supplier will be maintained until a suitable replacement is approved.

Unapproved Supplier: **Those who have been removed from the Approved Vendor List.**

21) Supplier Evaluation Scoring

Scores earned in the following categories; Delivery, Quantity, Quality, and Cost assessments are calculated and reported individually by segment and then a final score comprising of an average of all scores are tabulated and is considered the suppliers score. Supplier performance is key to securing additional business.

Delivery: 30points

Measured by comparing “on time” shipments to total shipments
(Number of shipments / Number of shipments considered on time)

Delivery is defined to be when the product is received at Teamvantage dock. On time is designated to be on time, up to seven days early and no days past the required dock date.

Delivery Rating	
On-Time to 7 days early	30 Points
More than 7 days early	15 Points
1-3 days late	15 points
More than 3 days late	0 points

Quantity: 20 Points

Quantity will be considered “in Full” if the received quantity is 90-100% of the original purchase order quantity (**unless noted otherwise on the purchase order). Over shipments are **NOT** allowed without prior approval and Teamvantage reserves the right to return product shipped in excess of the original purchase order quantity at the Suppliers expense. In some cases we may accept additional product if the supplier receives approval prior to shipping so the purchase order is adjusted accordingly.

Quantity Rating	
In Full	20 Points
+10 / - 10%	20 Points
Greater/Less than 10%	0 Points

Cost

10 Points

Cost of the materials are considered to be

Cost Rating	
Less than or Matches purchase order	10 Points
Exceeds purchase order pricing	0 Points

Quality:

40 Points

Each shipment of product is found to meet all requirements = 40 points
*(DtS) components will receive a score of 40 points for each delivery) Rejected parts receive 0 points.

22) Supplier Subcontracting / Outsourcing

The supplier is required to flow down to sub tier suppliers the applicable requirements in the purchasing documents, including key characteristics.

23) Supplier Disqualification

In the event of a supplier’s unacceptable performance, as measured by Teamvantage, SQCP or other supplier measurement tool, and remedial efforts have been unsuccessful; Teamvantage reserves the right to discontinue the relationship. Supplier may, at the discretion of Teamvantage, be reinstated as an approved supplier via the Implementation process described in this Supplier Development Manual.

24) Glossary/Definitions

1. **SCR**: Supplier Change Request: Provides a method of communication for the supplier to request a temporary or permanent change to a standard.
2. **BCP**: Business Continuity plans: BCP is working out how to stay in business in the event of disaster. Incidents include local incidents like building fires, regional incidents like earthquakes, or national incidents like pandemic illnesses.
3. **BOM**: Bill of Material: a list of the raw materials, sub-assemblies, intermediate assemblies, sub-components, components, parts and the quantities of each needed to manufacture an end item (final product)
4. **COA**: Certificate of Analysis: Statistically analyzed and valid set of data for requested product properties.
5. **CofC**: Certificate of Conformance: Document certifying a product meets its specifications; data is not included.
6. **Cpk**: Estimated sigma and the related capability indices (Cp, Cpk, and Cr) are used to measure the potential capability of a system to meet customer needs. Use it when you want to analyze a system's aptitude to perform. Process capability index based on the process average, standard deviation, and the specification limits of the product parameter.
7. **CTQ**: Critical to Quality: Product parameter considered critical to the quality of the product. Sometimes referred to as KQC (Key Quality Characteristic)
8. **DQCQ**: Delivery, Quantity, Cost and Quality: Overall categories of factors in the supplier measurement process.
9. **ECO**: Engineering Change Order: Used for changes in components, assemblies, or documents such as processes and work instructions. It may also be used for changes in specifications.
10. **ITAR**: The International Traffic in Arms Regulations.
Arms Export Control Act (22 U.S.C. 2778), as amended, authorizes the President to control the export and import of defense articles and defense services.
11. **KPI**: Performance Indicator: Detailed supplier performance factors within each of the TQRDC factors in the supplier measurement process.
12. **LCM**: Life Cycle Management: Process for managing the environmental, health, and safety impacts, & energy or resource utilization of Teamvantage products and technologies throughout their design, development, production, use, and disposal.
13. **MOC**: Management of Change: Business rules used to effectively and efficiently manage changes in a product, process, method, or source of supply.
14. **Ppk**: Process Capability Index: Actual or calculated sigma (sigma of the individuals) and the related indices (Pp, Ppk, and Pr) are used to measure the

performance of a system to meet customer needs. Use it when you want to measure a system's actual process performance.

15. **Product/Process Qualification**: The process of validating a supplier's capability to meet or exceed product expectations.
16. **QMS**: Quality Management System: A system used to assure customer satisfaction and drive continuous improvement. See ISO 9001, ISO 13485 and AS9100 standards for reference.
17. **SCAR**: Supplier Corrective Action Request: Request for root-cause analysis and corrective action to a supplier by Teamvantage.
18. **SMI**: Supplier Managed Inventory: Method of managing product flow in a supply chain where the supplier is controlling the inventory.
19. **SPC**: Statistical Process Control: System used to manage a process to a target value with minimum variability.
20. **SQCP**: Supplier Quality Control Plan: Supplier's documented process control plan to assure product quality to Teamvantage and will be provided when requested by Teamvantage. Typically this include(s): Prints, Bill of Material (BOM), product specifications, unique test methods, process control or packaging specifications, and raw material requirements.
21. **UAI**: Use as Is: Subject item (s) are determined to be acceptable for use.

APPENDIX A: SUPPLIER IDENTIFICATION TABLE (SL = SUPPLIER LIST)

Class	Product/Service	Initial Evaluation Required	Onsite Audit Required	Sections of Supplier Development Manual that Apply	Scorecards
A	Raw Material-resins/additives	Supplier Assessment Form	No	2, 3, 9, 11, 13, 14, 16, 17, 20	Ongoing-Available on Purchasing Website
B	Tooling-new or modifications/fixtures/components	Supplier Assessment Form	Evaluated on individual basis	2, 3, 16, 20, 21	Ongoing-Available on Purchasing Website
C1	Components/Inserts-custom manufactured	Supplier Assessment Form	Evaluate on individual basis	All apply	Ongoing-Available on Purchasing Website
C2	Components/Inserts-Off the shelf	Supplier Assessment Form	No	2, 3, 11, 13, 16, 20	Ongoing-Available on Purchasing Website
D1	Packaging-Standard	Supplier Assessment Form	No	2, 3, 11, 16, 20	Ongoing-Available on Purchasing Website
D2	Packaging-Specialized (medical)	Supplier Assessment Form	No	2, 3, 11, 16, 20	Ongoing-Available on Purchasing Website
E1	Subtracting-production products	Supplier Assessment Form	Evaluate on individual basis	All apply	Ongoing-Available on Purchasing Website
E2	Subcontracting-QA, Tooling & Maint related services	Supplier Assessment Form	Evaluate on individual basis	Evaluated on individual basis	Ongoing-as needed
F1	Misc. Product/Service production related	N/A	No	Exempt	N/A
F2	Misc. Product/Service-non production related I.e., Consultants	N/A	No	Exempt	N/A
G1	Maintenance & repair-Machinery	N/A	No	Exempt	N/A
G2	Maintenance & repair-Building	N/A	No	Exempt	N/A
H	Capital Equipment	N/A	No	Exempt	N/A
I	Transportation / Shipping	N/A	No	Exempt	N/A
J	Utilities	N/A	No	Exempt	N/A
K	Technology	N/A	No	Exempt	N/A