QUALITY MANUAL QM0492 AS9100 SUPPLEMENT II REV C

Foreword

This document defines the quality management system requirements to be applied in facilities registered to the aerospace standard AS9100.

This document is supplemental to the Avnet Quality Manual and must be used in conjunction with that Manual in facilities registered to AS9100. In those facilities registered to AS9100 all quality system requirements defined in the Quality Manual must be adhered to, as well as the additional requirements defined in this Supplement.

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4.2.1 General (Quality Manual Sections 1.1, 2.0, 5.2, 5.4 and 15.0)

4.2.1.1 QMS documentation is available to all Avnet personnel on the Avnet Quality Assurance website. Managers of each affected area are notified of documents and changes to documents via electronic broadcasts and are responsible to notify their applicable employees. Documents are available to customers and/or regulatory authorities' representatives on site at an Avnet location.

4.2.2 Quality Manual (Quality Manual Sections 2.0, 14.0 and Appendix IV)

4.2.2.1 Quality Manual – Supplemental

b) The relationship between the requirements of AS9100 and the documented procedures are defined in Appendix VII.

4.2.3 Control of Documents (Quality Manual Section 15.0)

4.2.3.1 Document Change Coordination – Supplemental (Quality Manual Section 15.4). Changes to documents are coordinated with customers and/or regulatory authorities, if required by contract or regulatory requirements.

4.2.4 Control of Quality Records (Quality Manual Section 16.0)

4.2.4.1 Control of Supplier retained records – Supplemental. Records supplied by product suppliers are maintained in accordance with the Quality Records procedure listed in Appendix VII. Records retained by the suppliers are maintained and controlled by the supplier's internal procedures.

4.2.4.2 Availability of records for review – Supplemental (Quality Manual Section 16.1). Records are available for review by customers and regulatory authorities if required by contract or regulatory requirements.

4.3 Configuration Management – Supplemental Configuration Management is the Quality Management system as defined in this Quality Manual Supplement and Appendix VI.

5.0 Management Responsibility

5.5 Responsibility, Authority and Communication (Quality Manual Section 6.0)

5.5.2 Management Representative (Quality Manual Section 7.0)

d) Organizational Freedom – Supplemental.
The Management Representative has been given the responsibility and authority to resolve matters pertaining to quality.

6.0 Resource Management

6.4 Work Environment (Quality Manual Section 10)

NOTE: Factors that may impact product – Supplemental.
Factors that may affect the conformity of the product include temperature, humidity, lighting, cleanliness, protection from electrostatic discharge, etc.

7.0 Product Realization

7.1 Planning of Product Realization (Quality Manual Section 12.0)

e) Identification of resources – Supplemental.
Resources have been identified to support operation and maintenance of the product for assembly.

7.2 Customer-related Processes (Quality Manual Section 13)

7.2.2 Review of Requirements Related to the Product (Quality Manual Section 13)

d) Risks – Supplemental
Any risks associated with the product is reviewed and evaluated during the quoting process.

7.3 Design and Development

NOTE: Product design is not performed. Design is the responsibility of the customer.

7.4 Purchasing (Quality Manual Section 17)

7.4.1 Purchasing Process

7.4.1.1 Responsibility for Quality of Product – Supplemental
When specified by the contract, products, materials, and services are purchased from customer approved sources. The quality of the purchased products is ensured even though customer designated sources are specified.

a) Maintain supplier register – Supplemental
Avnet approved suppliers are listed on the company's line card including the products available from each supplier.

b) Periodic review of suppliers – Supplemental
Periodic reviews are performed with suppliers on the Suppliers performance. Records of the reviews are maintained by the Product Business units.

c) Actions with suppliers not meeting requirements – Supplemental
Suppliers quality performance is reviewed during the periodic performance review and actions assigned for improvement. Supplier Corrective Action Requests (SCAR's) may be requested for poor performance through the Avnet corrective action system.

d) Use of customer approved special process sources, if required – Supplemental
When specified in the contract, uses of customer approved special process sources are used.

e) Responsibility for disapproving suppliers – Supplemental
The Product Business Unit Representative has the authority to disapprove a supplier.

7.4.2 Purchasing Information (Quality Manual 17.2)
Where appropriate the following items are included in the purchase documents: - Supplemental

d) Name and issues of specs,

e) Requirements for acceptance,

f) Requirements for test specimens,

g) Requirements for supplier notifications of nonconformances,

h) Requirements for supplier notification of changes,

i) Right of access to supplier facilities, and/or

j) Requirements to flow down applicable requirements to sub-tier suppliers.

7.4.3 Verification of Purchased Product (Quality Manual 17.3, 21.2, 21.6 and 23.3)

7.4.3.1 Verification activities may include: - Supplemental
a) Obtaining objective evidence of quality of product from supplier,

b) Inspection and audit at supplier,

c) Review of documentation,

d) Inspect on receipt, and/or

e) Delegation of verification to supplier or supplier certification.

7.4.3.2 Use of product before acceptance - Supplemental
Purchased product is not allowed to be released for use until it has been verified as acceptable. Avnet does not employ a positive recall system; therefore no material is allowed to move to the next operation until it is acceptable.

7.4.3.3 Use of test reports to verify purchased product – Supplemental
Avnet does not utilize test reports to verify purchased product.

7.4.3.4 Delegation of verification to supplier – Supplemental
Avnet does not delegate verification of purchased product to the supplier.

7.4.3.5 Right of access – Supplemental
If specified in the contract, the customer or the customer's representative will be allowed to verify at the supplier's facility and/or at Avnet's facility that the product conforms to specified requirements.

7.4.3.6 Verification by customer – Supplemental
See Quality Manual 17.3.

7.5 Production and Service Provision (Quality Manual Section 20)

7.5.1 Control of Production and Service Provision – Supplemental
Key characteristics, in-process verification, which cannot be performed at a later stage, design, manufacture, and use of tooling and special processes, are not applicable to Avnet's business.

Controlled Conditions - Supplemental (Quality Manual 20.1)

g) Product during assembly and/or programming is accounted for by notations on the lot traveler. This includes quantities, splits, rework, and rejects.

h) All production steps and inspections/tests are documented on the lot traveler.

i) Assembly maintains a documented program for the prevention, detection, and removal of foreign objects.

j) Shelf life controls are in place for applicable materials use in assembly. No utilities or other supplies affect product quality.

k) Workmanship standards have been developed as applicable.

7.5.1.1 Production Documentation – Supplemental
Assembly and programming operations are carried out with the following production documentation as necessary:

a) Drawings, bill of materials (BOM), process flow charts, job travelers, manufacturing process instructions (MPI's), procedures, work

instructions, forms, inspection procedures, first article forms (AFA's), etc.

b) Tools required are listed on an equipment list and are referenced in the work instruction for the equipment on which used. No numerical control (NC) equipment is used.

7.5.1.2 Control of Production Process Changes – Supplemental
Changes to assembly and programming processes are made through the document control system. Any changes made to processes must be approved by the same functions specified in the document control procedure.

7.5.1.3 Control of Production Equipment, Tools, and Numerical Control (NC) Machine Programs – Supplemental
All new equipment and tools are validated prior to use and periodically inspected per the calibration and preventive maintenance procedures. Equipment and tools are stored to prevent any damage or deterioration.

7.5.1.4 Control of Work Transferred, on a Temporary Basis, Outside the Organization's Facilities – Supplemental
Product sent to an approved subcontractor for Processing is processed in accordance with established procedures and is verified at receiving inspection when returned.

7.5.1.5 Control of Service Operations - Supplemental
Servicing is not applicable to Avnet's operations.

7.5.2 Validation of Processes for Production

7.5.2.1 Validation of Processes for Production - Supplemental
No special processes exist within Avnet.

7.5.3 Identification and Traceability (Quality Manual Section 21)

7.5.3.1 Product Configuration Identification – Supplemental
Product configuration is the responsibility of the product supplier and/or customer. Product received from the product supplier is received with the supplier's part number. Product built to customer drawings maintains the customer's part number. These numbers are maintained through-out all processing.

7.5.3.2 Use of acceptance media – Supplemental
A documented procedure has been established which defines the controls required for the use of stamps, electronic identification and passwords used to identify employees.

7.5.3.3 Level of traceability required – Supplemental

a) Identification of the product is the responsibility of the product manufacturer and/or customer.

b) No raw materials are used in the assembly of product at Avnet.
c) The Bill of Materials (BOM) for the product to be assembled is listed on the lot traveler/shop ticket. This information is maintained with the build records for each assembly processed.

d) Each order processed in assembly and/or programming is assigned a sequential work order number which is maintained on the lot traveler/shop ticket and within the computer system.

7.5.4 Customer Property (Quality Manual Section 18)

7.5.4.1 Customer furnished data – Supplemental
Any data furnished by the customer for use in programming or assembly is maintained per documented procedures.

7.5.5 Preservation of Product (Quality Manual Section 25)

7.5.5.1 Preservation of Product, where applicable – Supplemental
Provisions have been included in documented procedures and work instructions for the following, as applicable:

a) cleaning;
b) prevention, detection and removal of foreign objects;
c) special handling for sensitive products;
d) marking and labeling including safety warnings;
e) shelf life control and stock rotation; and
f) special handling for hazardous materials.

7.5.5.2 Control of documents required to accompany product – Supplemental
Documents required to accompany product are specified in procedures, work instructions, and/or special instructions on each order. Each order requiring accompanying documents is checked to ensure documents are available at shipping. Documents are placed in a protective envelop identified as containing documents.

7.6 Control of Measuring and Monitoring Devices (Quality Manual Section 22)

7.6.1 Maintenance of an Equipment Register - Supplemental
The calibration system includes an equipment recall list of all equipment requiring calibration used for inspection. The system requires all employees owned and customer supplied equipment to be included in the calibration system. The list and/or records of calibration include calibration procedure used, equipment type, unique identification, location, frequency of checks, check method, and acceptance criteria.

7.6.2 Suitable Environmental Conditions - Supplemental
Environmental conditions are suitable for the calibrations, inspections, measurements, and tests being carried out. The temperature and humidity of the environment during calibration is recorded on the Certificate of Calibration. Environmental conditions are monitored during device programming and assembly as appropriate to the product.

7.6.3 Measuring Equipment Requirements – Supplemental
The recall of equipment requiring calibration is performed prior to the calibration due date and is defined in the calibration procedure.

8.0 Measurements, Analysis and Improvement

8.1 General (Quality Manual 27.0)

8.1.1 Identification of Statistical Techniques - Supplemental
Depending on the nature of the product and specified requirements statistical techniques may be used to support process control, process capability measurements, statistical process control, as applicable.

8.2 Monitoring and Measurement

8.2.2 Internal Audit (Quality Manual Section 26)

8.2.2.1 Detailed Audit Tools and Techniques – Supplemental
Checklists, process flowcharts, procedures, etc., have been developed to support the audit process.
The acceptability of the checklists and process flowcharts, procedures, etc. is measured against the effectiveness of the internal audit process and the overall performance of the organization.

8.2.2.2 Contract and/or Regulatory Audit Requirements – Supplemental
Internal audits include all customer contractual and regulatory audit requirements.

8.2.3 Monitoring and Measurement of Processes

8.2.3.1 Process Nonconformity - Supplemental
If any process nonconformities are detected, corrective action is promptly taken to correct the nonconforming process, evaluate if the process has produced any nonconforming product and identify and control the nonconforming product in accordance with the nonconforming product procedure.

8.2.4 Monitoring and Measurement of Product (Quality Manual Section 21)
Key Characteristics – Supplemental
No key characteristics have been identified.
Sampling Inspection – Supplemental

When not specified by the customer, supplier and/or regulatory agency, sample plans used are statistically valid and appropriate for use. The acceptance allowed is zero (0).

Positive Recall – Supplemental
Avnet does not employ a positive recall process. Product is not allowed to move to the next operation until it has been found to be acceptable.

8.2.4.1 Inspection Documentation – Supplemental
Inspection requirements are documented in procedures and work. The procedures include criteria for acceptance and/or rejection, where in the process the inspections and/or tests are performed, records to be maintained and the inspection and/or test equipment to be used. If required, test records shall show actual test results data. If product qualifications are required, the records shall provide evidence that the product meets defined requirements.

8.2.4.2 First Article Inspection - Supplemental
First article inspections are the responsibility of the component manufacturer.

8.3 Control of Nonconforming Product (Quality Manual Section 23)
NOTE: Nonconforming product includes product returned from the customer.

8.3.1 Responsibility for review and disposition and approval of personnel - Supplemental
The documented procedure for handling and control of nonconforming product defines the responsibility and authority for review and disposition of nonconforming product and the process for approval of personnel making these decisions.

8.3.2 Use of use-as-is or repair dispositions - Supplemental
Use-as-is or repair dispositions are not to be used unless specifically authorized by the customer, if the product is produced to customer design or the nonconformity results in a departure from the contract requirements.

8.3.3 Scrapped Product Identification – Supplemental
Product disposition for scrap shall be conspicuously and permanently marked, or positively controlled, until physically rendered unusable.

8.3.4 Timely reporting of delivered nonconforming product – Supplemental
Customers will be notified of product shipped to them which has been reported as nonconforming by the product supplier or identified by Avnet, which affects reliability or safety. Notification shall include a clear description of the nonconformity, which will include as necessary parts affected, customer and/or organization part numbers, quantities, and date(s) delivered.

8.5 Improvement (Quality Manual Section 10)

8.5.2 Corrective Action (Quality Manual Section 24)

g) Supplier corrective action flow down – Supplemental
Corrective actions are requested from the supplier when it has been determined that the supplier is responsible for the root cause.

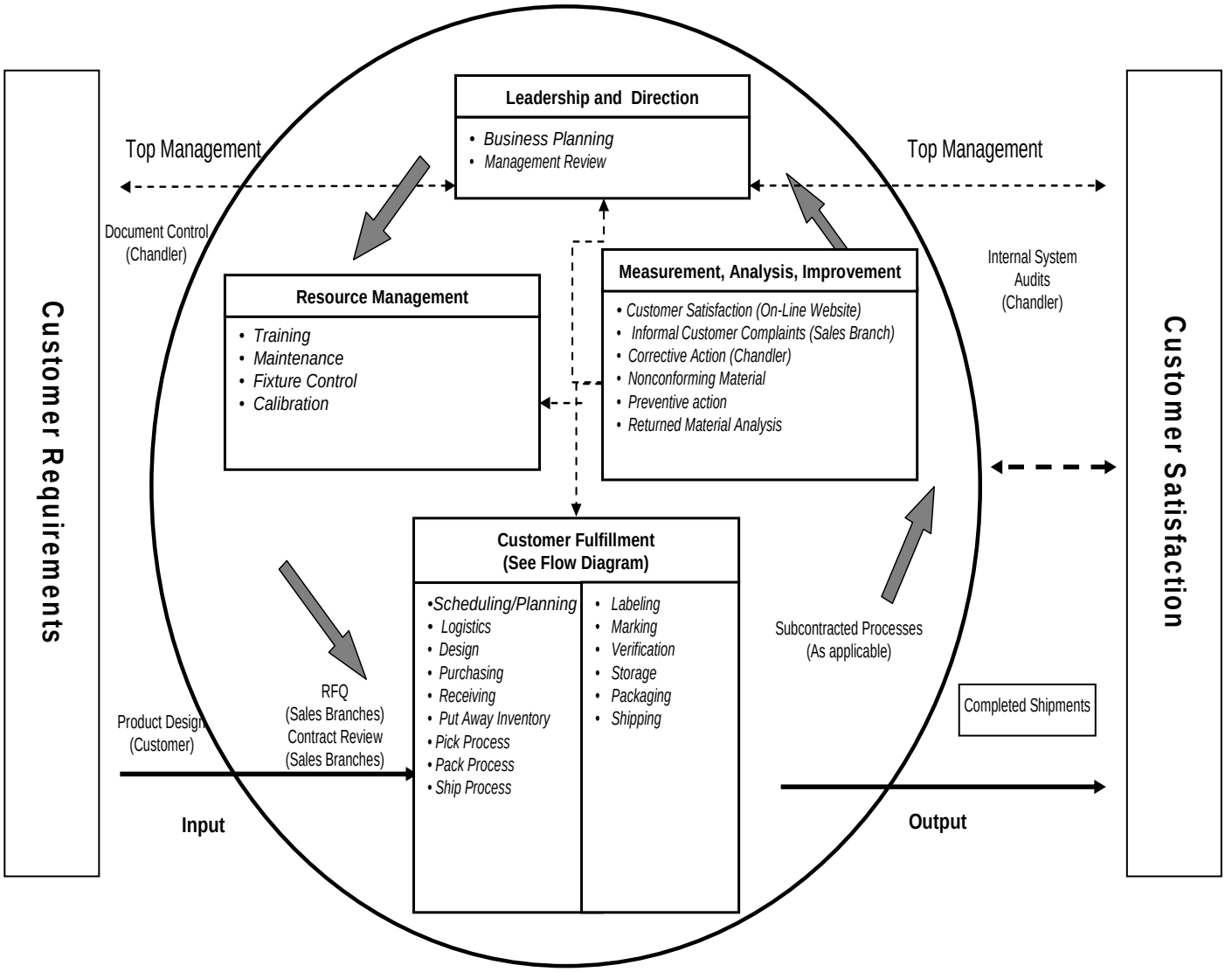
h) Actions for untimely or ineffective corrective actions – Supplemental
Corrective actions which have not been provided in a timely manner are escalated to the next higher level of management. A new corrective action is issued when the original corrective action response is found to be ineffective in correcting the problem.

AS9100

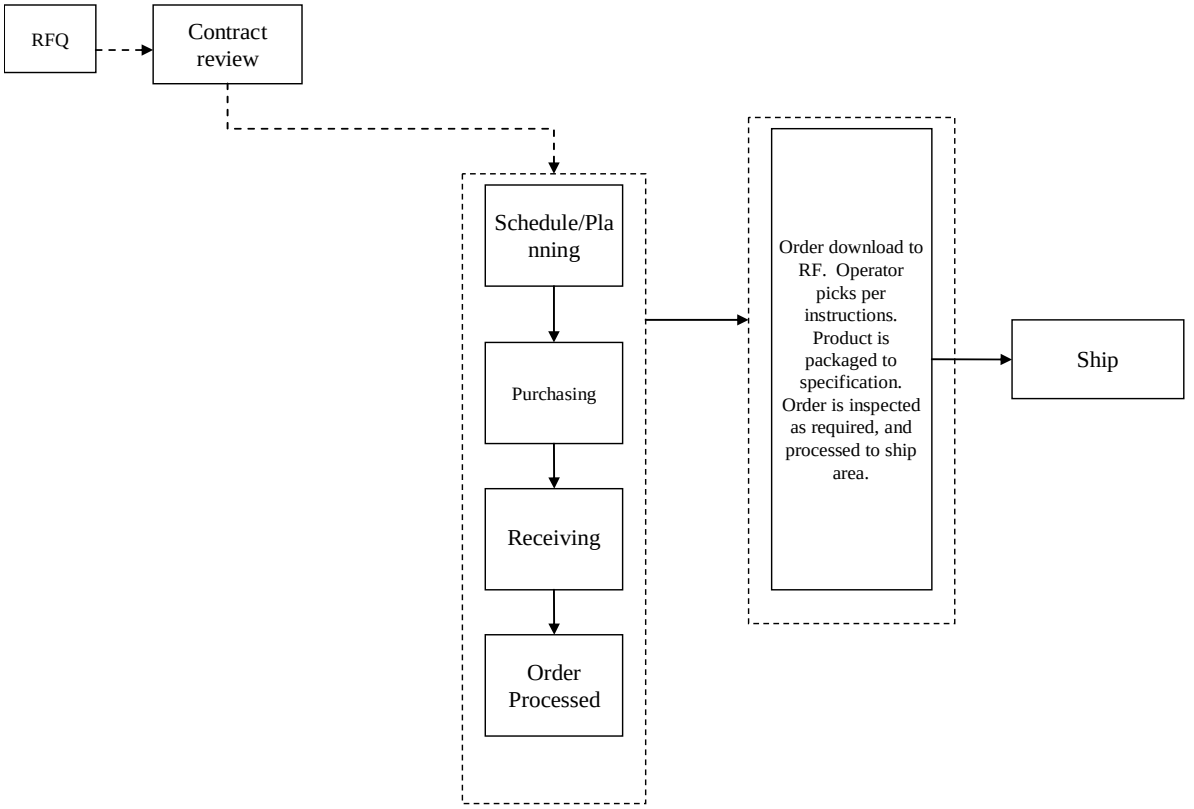
Cross Reference Document

QMS REQUIREMENTS	QUALITY MANUAL	AS9100 Quality Management System	TIER II PROC.
QUALITY SYSTEM	QM0492	Sec. 4 – Pars 4.1, 4.2, 4.2.1, 4.2.2	02-SYS-01
DOCUMENT CONTROL	QM0492	Sec. 4 – Para 4.2.3	02-DOC-01
RECORDS	QM0492	Sec. 4 – Para 4.2.4	02-RCD-01
CONFIGURATION MANAGEMENT	QM0492	Sec. 4 – Para 4.3	02-CFG-01
MANAGEMENT RESP.	QM0492	Sec. 5, 6.1, 6.2	02-MGT-01
TRAINING	QM0492	Sec. 6 – Para 6.2.2	02-TRN-01
CONTRACT REVIEW	QM0492	Sec. 7 – Para 7.1, 7.2	02-CON-01
DESIGN & DEVELOPMENT	QM0492	Sec. 7 – Para 7.3	02-DSN-01
PURCHASING	QM0492	Sec. 7 – Para 7.4	02-PUR-01
PROCESS CONTROL	QM0492	Sec. 7 – Para 6.3, 6.4, 7.5.1	02-PRO-01
ID & TRACEABILITY	QM0492	Sec. 7 – Para 7.5.3	02-TRA-01
CUST. SUPPLIED PRODUCT	QM0492	Sec. 7 – Para 7.5.4	02-PSP-01
H., S., P., & DELIVERY	QM0492	Sec. 7 – Para 7.5.1, 7.5.5	02-HST-01
CALIBRATION	QM0492	Sec. 7 – Para 7.6	02-CAL-01
STATISTICAL TECHNIQUES	QM0492	Sec. 8	02-SPC-01
INSP. & TESTING	QM0492	Sec. 7 – Para 7.1, 7.4, 8.2.4	02-INT-01
CUSTOMER SATISFACTION	QM0492	Sec. 8 - Para 8.2.1	02-CST-01
INTERNAL QUALITY AUDITS	QM0492	Sec. 8 – Para 8.2.2	02-AUD-01
NONCONFORMING PROD.	QM0492	Sec. 8 – Para 8.3	02-NCM-01
CORRECTIVE ACTION/CONTINUAL IMPROVEMENT	QM0492	Sec. 8 – Para 8.5.1, 8.5.2	02-CAR-01
PREVENTIVE ACTION	QM0492	Sec. 8 – Para 8.5.3	02-CAR-02

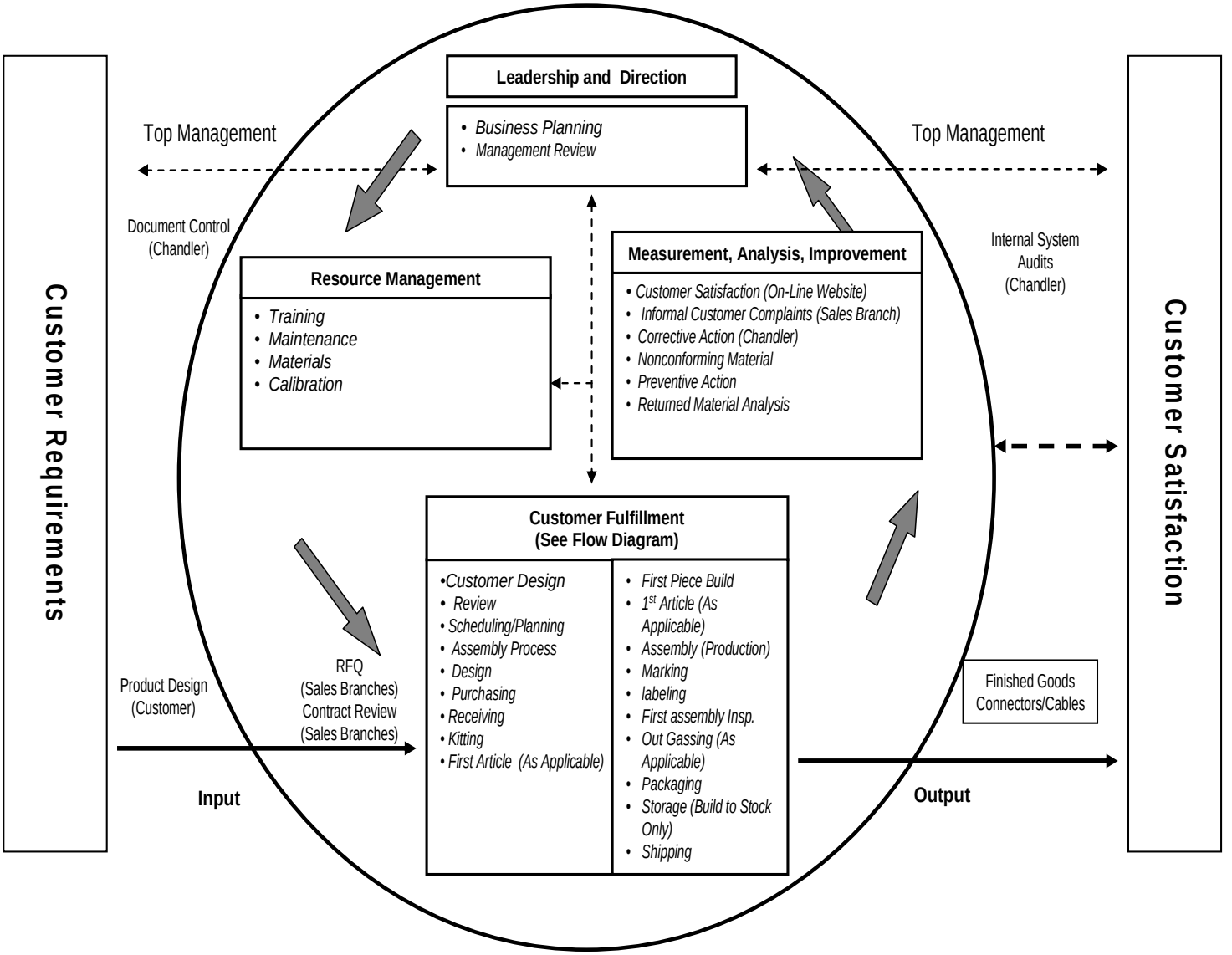
Logistics Quality Management System Processes

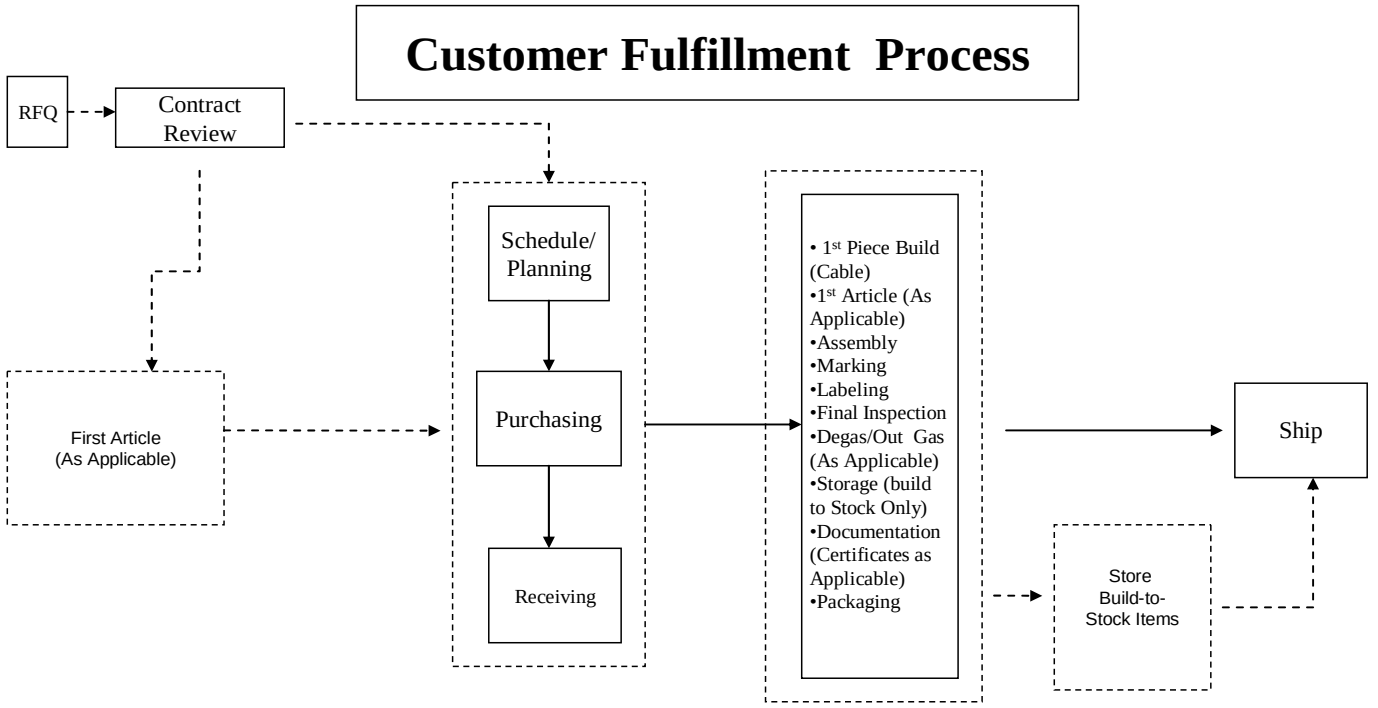


Customer Fulfillment Process



Value Add Quality Management System Processes





Programming Quality Management System Processes