QUALITY MANUAL QM0492 AS9100 SUPPLEMENT II REV E

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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4.0 Quality Management System Requirements

4.2 Documentation Requirements (Quality Manual Sections 1.1, 2.0, 5.2, 5.4 And 15.0)

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.

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 VI.

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.

5.0 Management Responsibility

5.2 Customer Focus (Quality Manual Section 5.0 and 13.0)

5.2.1 Product Conformity and On-Time Delivery Performance Measurement – Supplemental
Product conformity and on-time delivery performance is measured and reported during management review to Top Management. Appropriate action is taken if planned results are not or will not be achieved.

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 and has unrestricted access to Top Management.

7.0 Product Realization

7.1 Planning of Product Realization (Quality Manual Section 12.0)

e) Configuration Management – Supplemental
Configuration management appropriate to the product.

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

7.1.1 Project Management – Supplemental
As appropriate to Avnet and the product, Avnet plans and manage product realization in a structured and controlled manner to meet requirements at acceptable risk, within resource and schedule constraints.

7.1.2 Risk Management – Supplemental

Avnet has established, implemented and maintains a process for managing risk to the achievement of applicable requirements that includes, as appropriate to the organization and the product:

a) assignment of responsibilities for risk management,

b) definition of risk criteria (e.g., likelihood, consequences, risk acceptance),

c) identification, assessment and communication of risks throughout product realization,

d) identification, implementation and management of actions to mitigate risks that exceed the defined risk acceptance criteria, and

e) acceptance of risks remaining after implementation of mitigating actions.

7.1.3 Configuration Management – Supplemental

Avnet has established, implemented and maintains a configuration management process that includes, as appropriate to the product:

a) configuration management planning,

b) configuration identification,

c) change control,

d) configuration status accounting, and

e) configuration audit.

Configuration management is not applicable to the product supplied by Avnet. Configuration management for the product is the responsibility of the customer or component manufacturer. Configuration management is the Quality Management System as defined in this Quality Manual Supplement and Appendix VI.

7.1.4 Control of Work Transfers – Supplemental

Avnet has established, implemented and maintains a process to plan and control the temporary or permanent transfer of work (e.g., from one Avnet facility to another, from Avnet to the Supplier, from one supplier to another supplier) and verifies the conformity of work to requirements.

7.2 Customer-related Processes (Quality Manual Section 13)

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

d) Special Requirements –Supplemental

Special requirements of the product are determined during the quoting process.

e) Risks – Supplemental
Risks (e.g., new technology, short delivery time frame) have been identified 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 Conformity of Product – Supplemental
When specified by the contract, products, materials, and services are purchased from customer approved sources. The conformity of the purchased products is ensured even though customer designated sources are specified.

a) Maintain supplier register – Supplemental
Avnet approved suppliers of product 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) Supplier Status Decisions Approval – Supplemental
The processes, responsibilities and authorities for the approval status decision, changes to the approval status and conditions for a controlled use of suppliers depending on the supplier's approval status are defined, as required.

f) Risk of Selecting and Approving Suppliers – Supplemental
The risk has been determined and is managed when selecting and using suppliers.

g) Suppliers of materials used directly in the assembly of products are purchased from the OEM manufacturer, the distributor for the products specified in the OEM specifications or as directed by the customer for custom customer assemblies. A list of these suppliers is maintained

by the applicable Avnet assembly facility. The list may be a controlled list.

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

d) Identification and revision status specifications, drawings, process requirements, inspection/verification instructions, and other relevant technical data,

e) Requirements for design, test, inspection, verification (including production process verification), use of statistical techniques for product acceptance, and related instructions for acceptance, and as applicable, critical items key characteristics,

f) Requirements for test specimens (e.g., production method, number, storage conditions) inspection/verification, investigation or auditing,

g) Requirements regarding the need for suppliers to notify Avnet of nonconforming product and to obtain Avnet's approval for nonconforming product disposition, for supplier notification of changes in product and/or process, changes of suppliers, changes of manufacturing facility location, and where required, obtain Avnet's approval, and to flow down applicable requirements to sub-tier suppliers,

h) Record retention requirements, and

i) Right of access to all applicable areas in suppliers facilities by Avnet, customers and regulatory authorities involved in the order and to all applicable records.

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

7.4.3.1 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.

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

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 conformity to product requirements.

k) Workmanship standards have been developed as applicable.

Planning Considerations, as appropriate – Supplemental

- No critical items or process controls with key characteristics have been identified nor are applicable to Avnet's business.
- No tooling is designed, manufactured or used to measure variable data.
- In-process inspection/verification points have been identified within the applicable assembly work instructions.
- No special processes have been identified.

7.5.1.1 Production Process Verification – Supplemental
Avnet uses a representative part from the first part produced for custom assembly and programming orders to verify the process, production documentation and tooling are capable of producing parts and assemblies that meet customer requirements. This process is repeated when changes occur that invalidate the original results (e.g., engineering changes, customer requirement changes, equipment changes, program changes).

7.5.1.2 Control of Production Process Changes – Supplemental
Changes to assembly and programming processes, production, equipment, tools or software programs 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, tools and software 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 Post Delivery Support - 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.

7.5.5 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.

7.6 Control of Measuring and Monitoring Equipment (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 Equipment Calibration Recall – Supplemental
An equipment list is maintained, which includes the calibration due date of each piece of calibrated equipment. The list is used to recall each piece of equipment requiring calibration or verification when due.

8.0 Measurements, Analysis and Improvement

8.2 Monitoring and Measurement

8.2.1 Customer Satisfaction (Quality Manual Section 9.0)

8.2.1.1 Information for Monitoring and Evaluating – Supplemental
As a minimum, the information to be monitored and used to evaluate customer satisfaction includes product conformity, on-time delivery performance, customer complaints and corrective action requests. Results of the monitoring and evaluations of the data are reviewed to address deficiencies identified by the evaluations and assess the effectiveness of the results.

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, determine if the process nonconformity is limited to a specific occurrence or if it could have affected other processes or products, and identify and control the nonconforming product in accordance with the applicable nonconforming product procedure.

8.2.4 Monitoring and Measurement of Product (Quality Manual Section 21)

8.2.4.1 Inspection Documentation for Product Acceptance – 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 used. If required, test records shall show actual test results data and indication of acceptance or rejection at a minimum.

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 based on recognized statistical documented industry standards. 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.

Product Qualification - Supplemental

If product qualifications are required, the records shall provide evidence that the product meets defined requirements.

Documents Required at Shipping – Supplemental

All documents required to accompany the product are included at shipping. 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.

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 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.

8.3.3 Dealing with nonconforming product as follows: - Supplemental

e) take the necessary action to contain the effect of the nonconformity on other processes or products.

8.3.4 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.

8.3.5 Scrapped Product Identification – Supplemental

Product disposition for scrap shall be conspicuously and permanently marked, or positively controlled, until physically rendered unusable.

8.5 Improvement (Quality Manual Section 10)

8.5.1 Continual Improvement (Quality Manual Section 28.0)

8.5.1.1 Monitor implementation and effectiveness improvement - Supplemental

Continual improvement projects are followed-up on to ensure that they are implemented and effective.

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 nonconformity.

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.

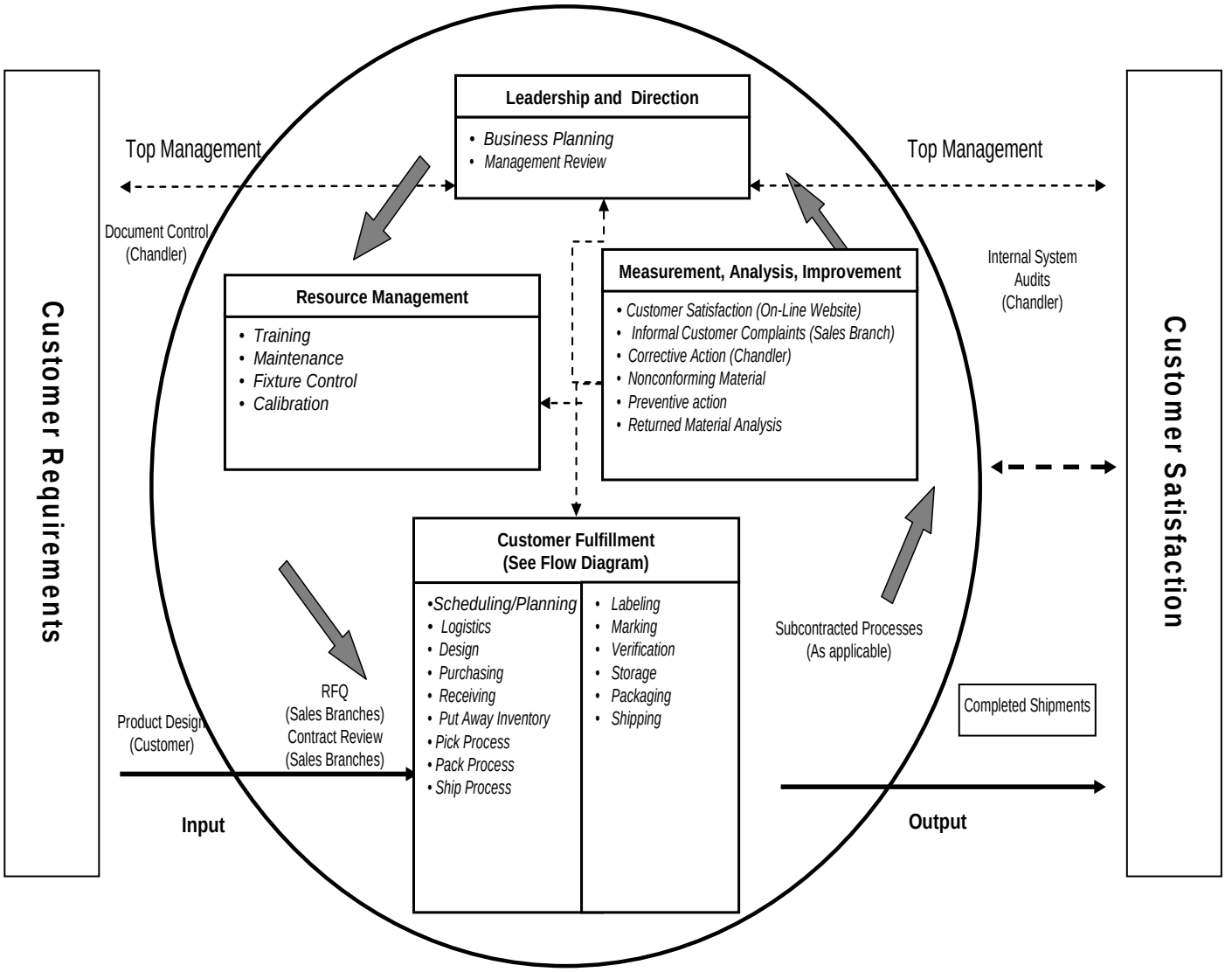
i) Additional nonconforming product – Supplemental
Corrective action evaluations include determining if additional nonconforming product exists based on the nonconformities and taking further action, if required.

AS9100

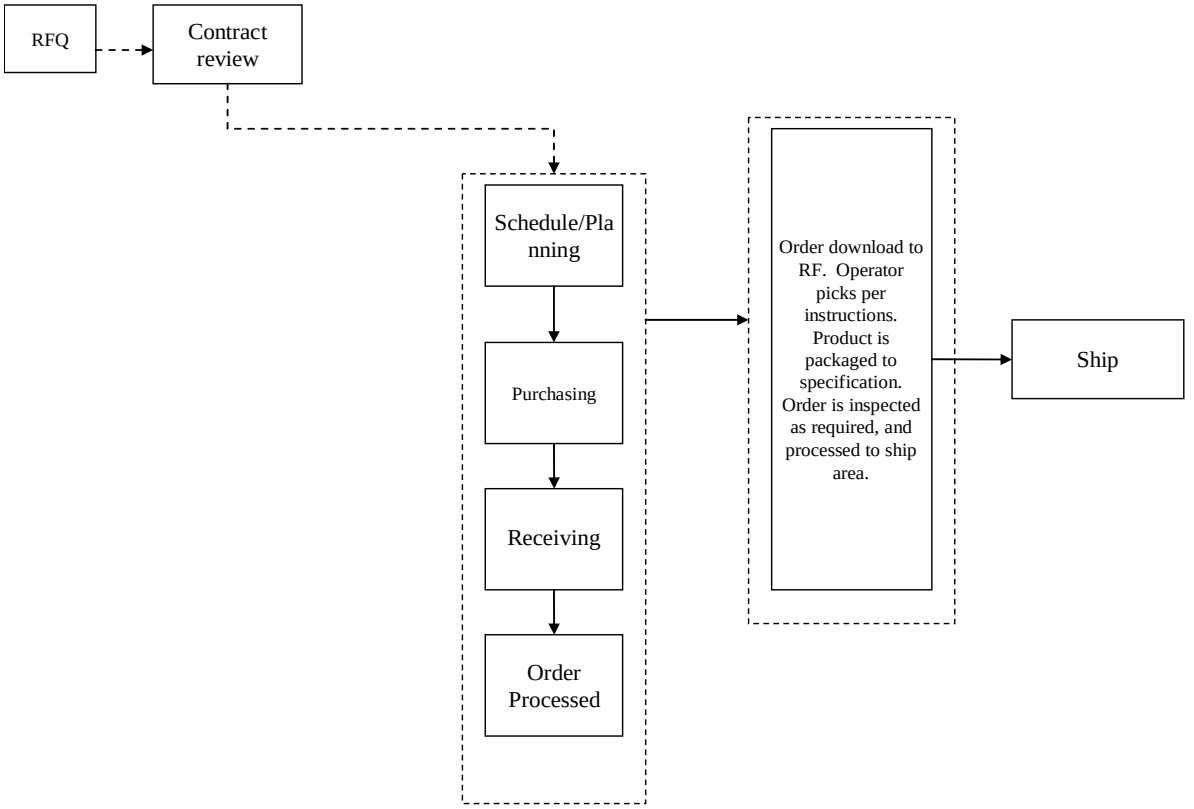
Cross Reference Document

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

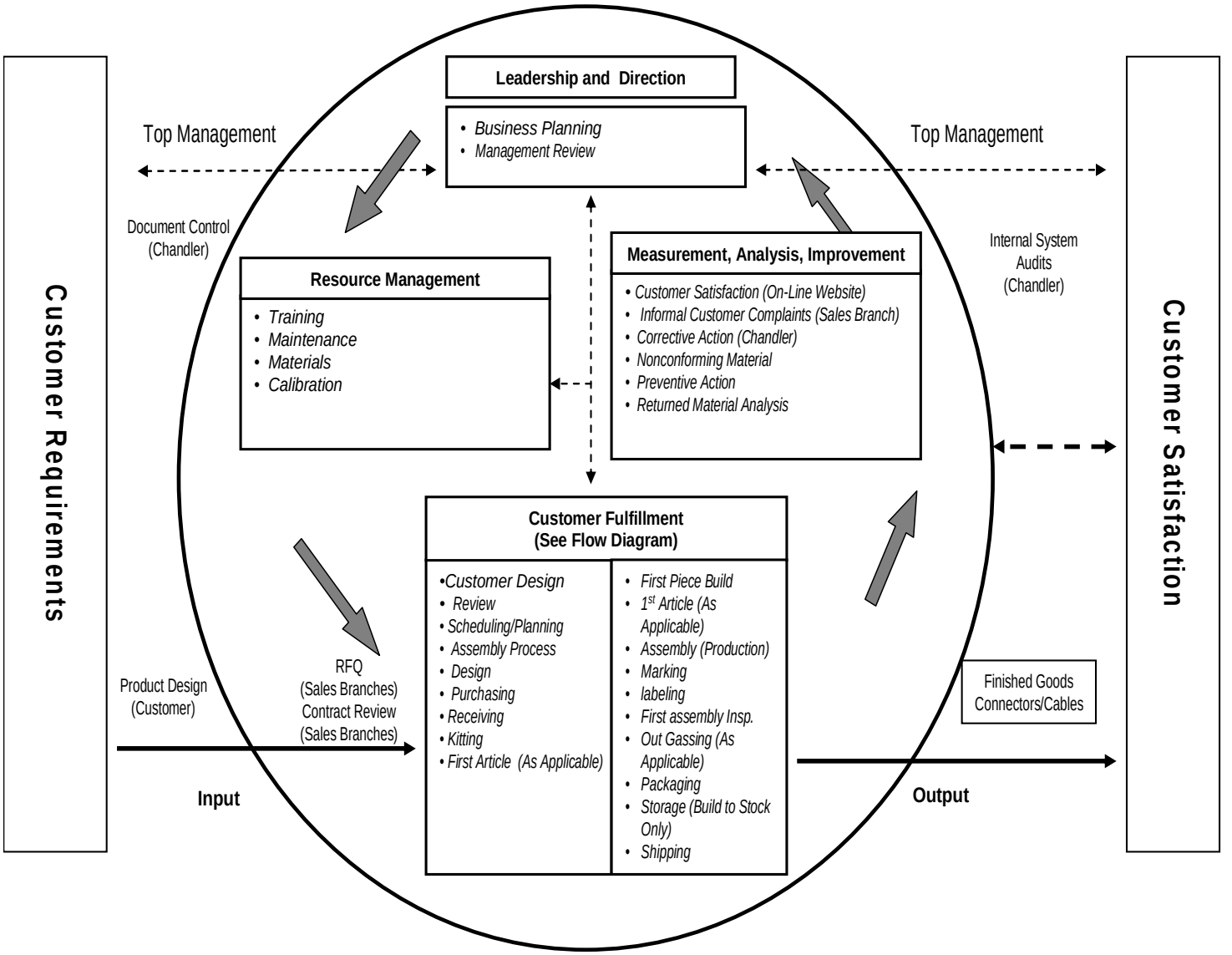
Logistics Quality Management System Processes

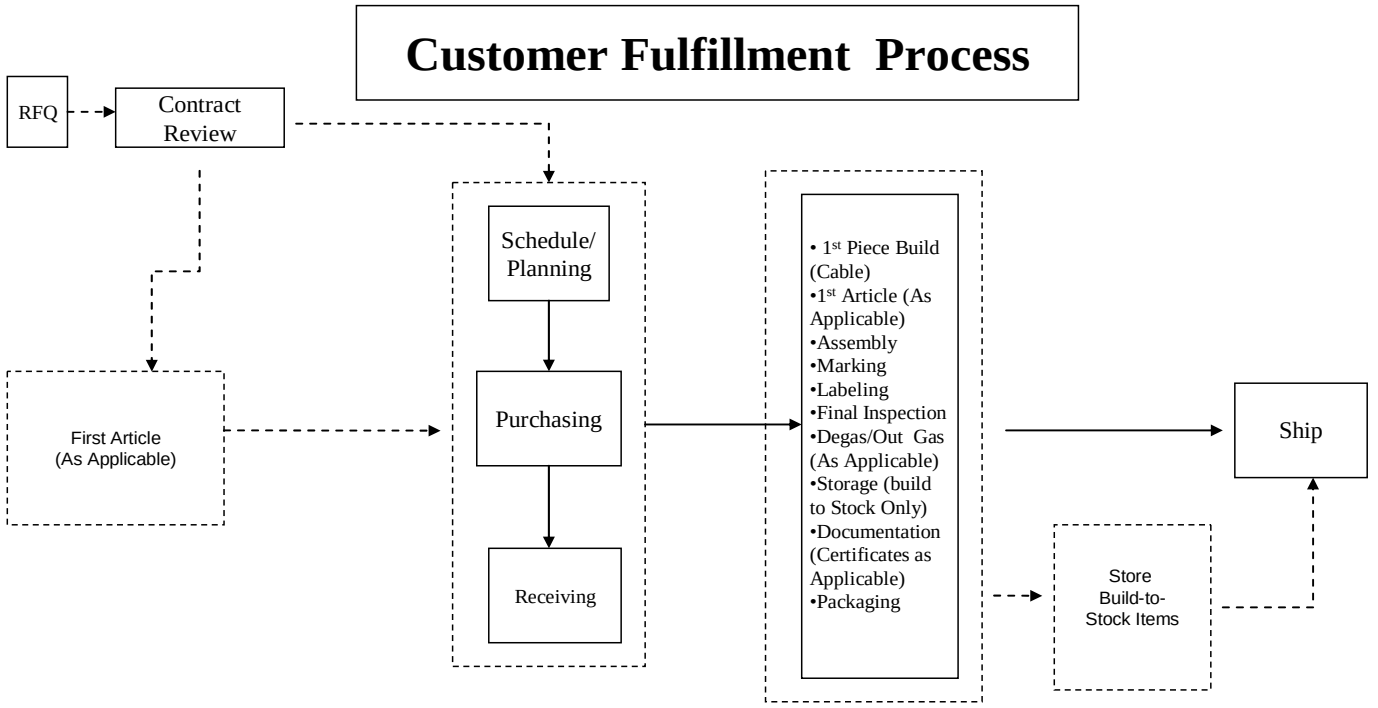


Customer Fulfillment Process

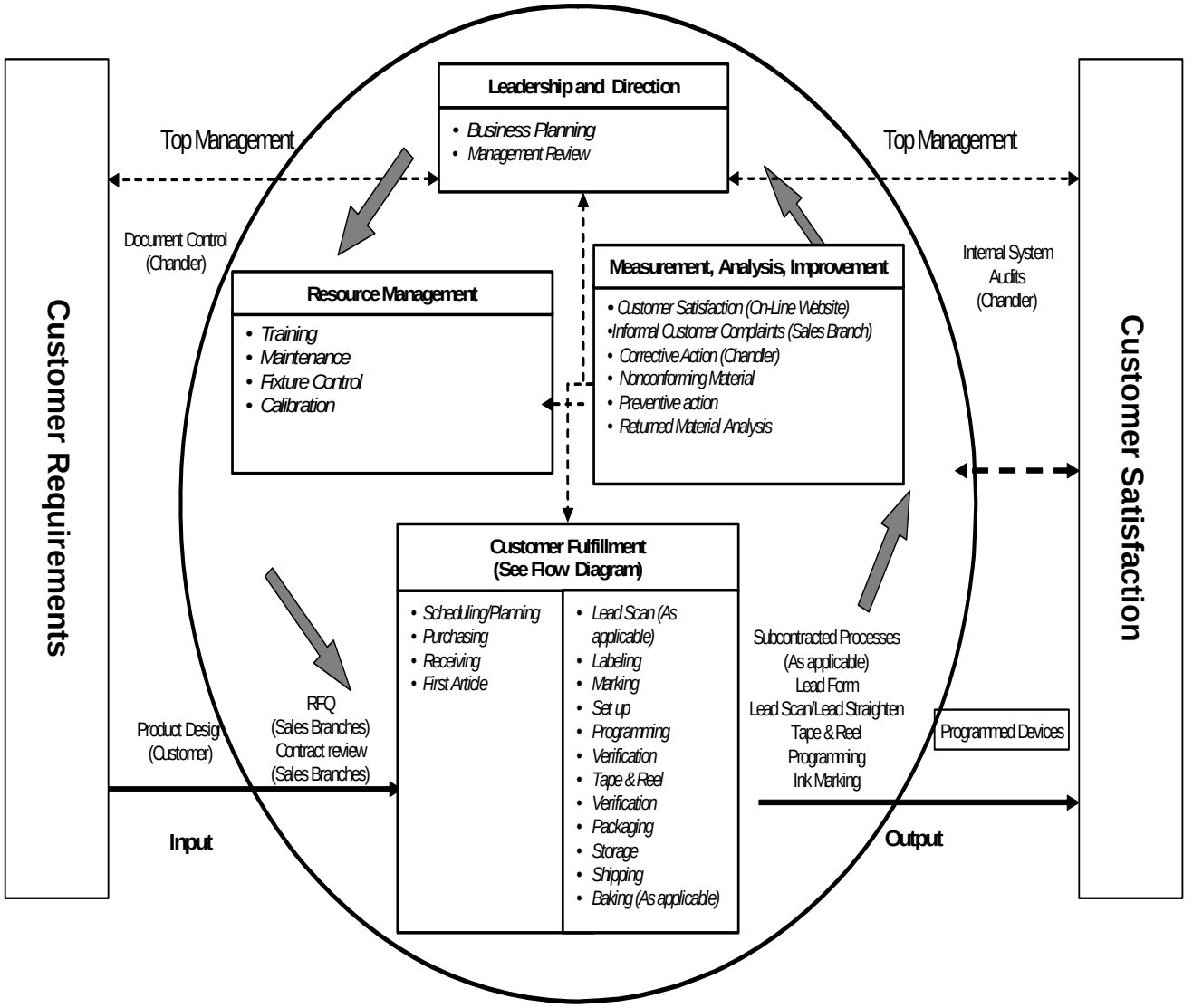


Value Add Quality Management System Processes





Programming Quality Management System Processes



Customer Fulfillment Process