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SOFTWARE QUALITY HANDBOOK

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Abstract:

This document describes the software quality management system policies and procedures that achieve conformance with aerospace standard **SAE AS9100D** and **ISO 90003**.

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Section 1: Scope

(Your Company's) quality management system (QMS) policies and procedures summarize top management's strategic view to improve the QMS, enhance Customer satisfaction and assure consistent delivery of products and services that achieve conformance with Customer and applicable statutory and regulatory requirements.

Section 2: Normative References

Documents that are referenced herein are indispensable and their title's are displayed in Bold Italics.

Section 3: Terms and Definitions

Unless otherwise noted, the Company applies the definitions of key terms according to **AS9100D** and the **QMS-16 Definitions and Abbreviations Procedure**.

Section 4: Context of the Organization

4.1 Understanding the organization and its context

The Company [REDACTED] according to the **QMS-04 Management Process Procedure**.

4.2 Understanding the needs and expectations of interested parties

The Company considers [REDACTED] according to the **QMS-04 Management Process Procedure**.

4.3 Determining the scope of the quality management system

The Company's quality management system applies to all employees within all functional areas of the business operation.

The Company provides the following products and/or services:

Producer/Provider of [Your text]

NAICS code: [Your code(s)]

SIC code: [Your code(s)]

QMS policies and/or procedures outline [REDACTED]

The primary purpose of the Quality Handbook and QMS Procedures is to [REDACTED]

Copies of the handbook are controlled by [REDACTED]

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This Quality Handbook has been developed by top management to [REDACTED]

Additional procedures and work instructions have been developed to [REDACTED]
[REDACTED] Where subordinate documents are referenced, they are shown in ***bold italics***.

4.3.1 Non-Applicable provisions of the QMS

The Company cites [REDACTED]

4.4 Quality management system and its processes

The Company has developed a quality system for software products and related services that includes [REDACTED]

The Company's quality management system is fully documented and implemented and is maintained as needed to meet the requirements of the Company's vision and governing policies.

The Company uses [REDACTED] which emphasizes the importance of:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

During Management Review (see 9.3), process resources are [REDACTED]

Every process has at least one QMS Procedure that defines it in greater detail that may [REDACTED]

For each process identified in use by the Company, the sequence and interaction of processes has been determined (see ***Process Orientation Checklist***) and the process controlled by [REDACTED]

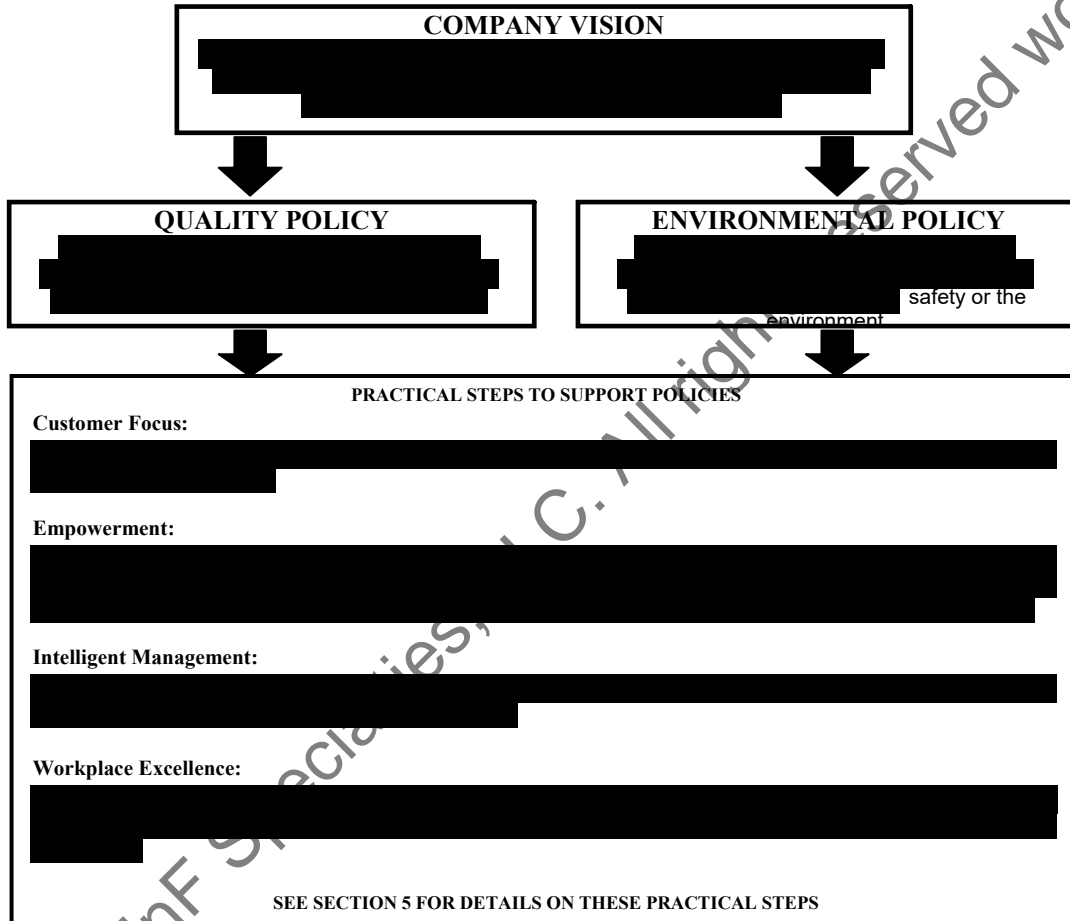
Process maps define the details of each process, which includes [REDACTED]

The relationship between QMS procedures and their applicable **AS9100D** clauses is shown in *Appendix A*. See *Appendix B* for applicable Company processes and documents. Outsourced processes and their controls are defined in *Appendix C*. See *Appendix E* for identification of key realization processes.

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The Company maintains all required documentation to [REDACTED]

4.4.1 Vision and governing policies

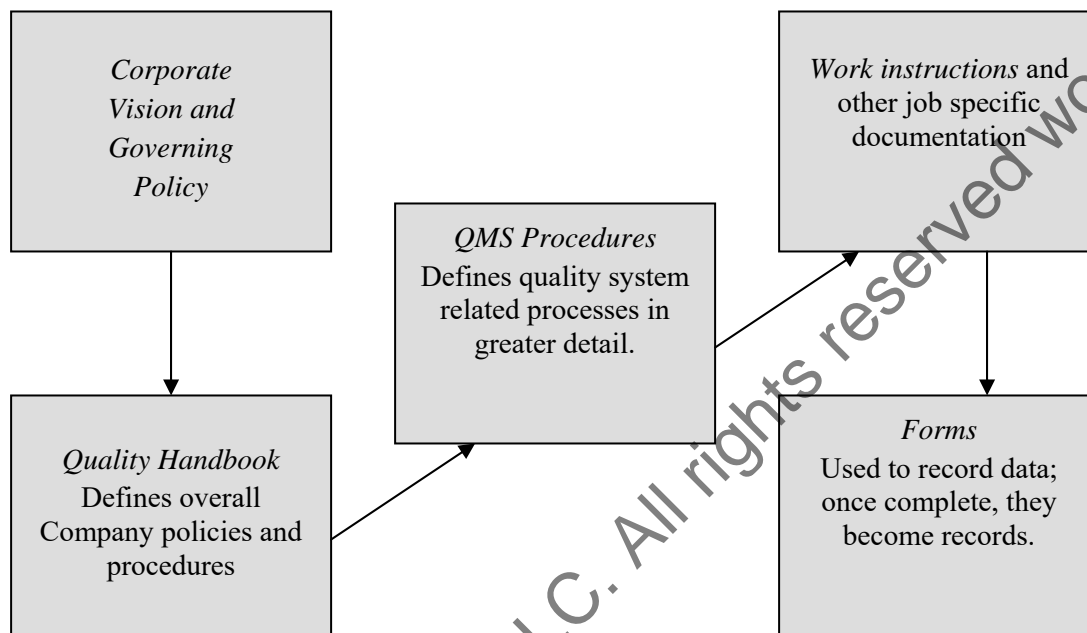


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4.4.2 Overview of documentation

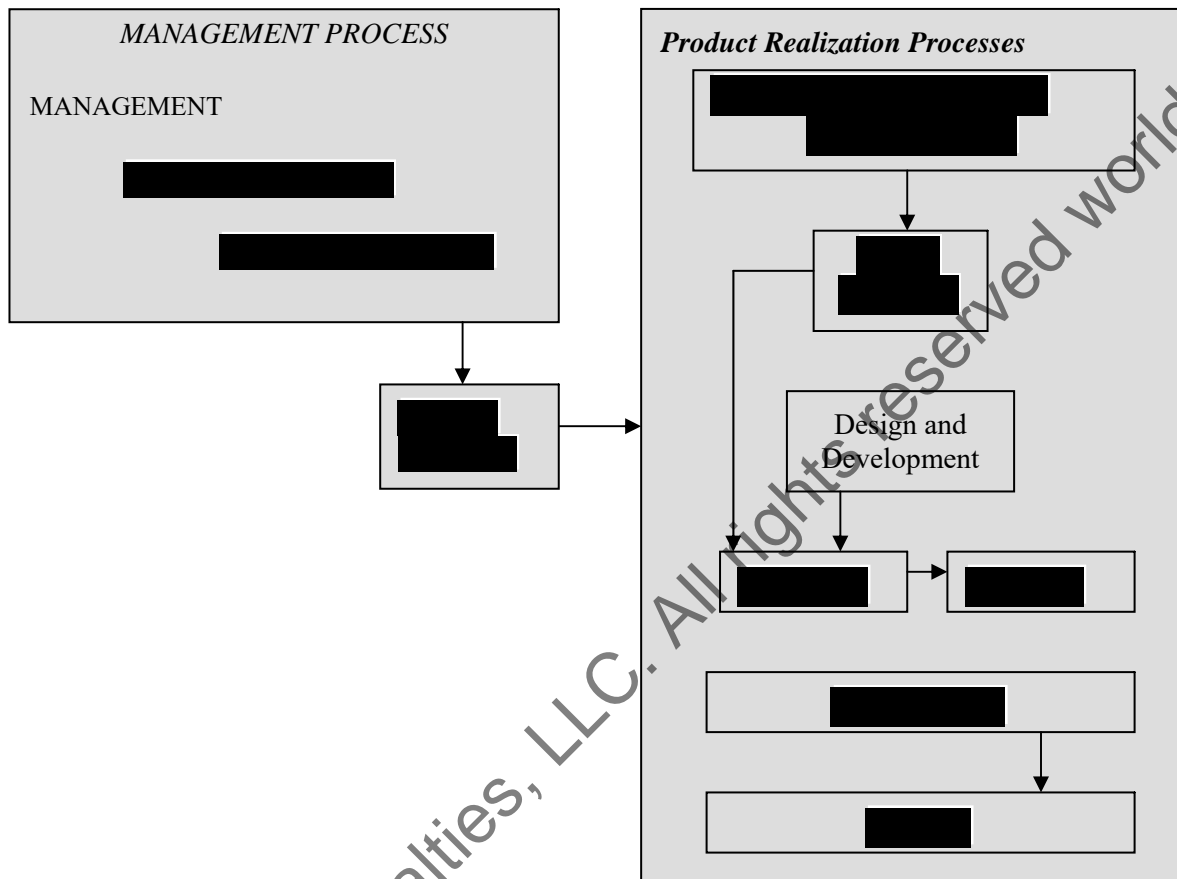
The quality system documentation is comprised of a hierarchy of documents that flow from this Quality Handbook.



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4.4.3 Overall process sequence and interaction



Section 5: Leadership

5.1 Leadership and commitment

The Company's Management is

5.1.1 General

The Company uses the quality management system to guide and validate its decisions and to Management participation in the QMS is described in the **QMS-04 Management Process Procedure**.

5.1.2 Customer focus

The Company demonstrates leadership and commitment with respect to Customer focus by

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_____ according to the **QMS-04 Management Process Procedure**.

5.2 Policy

5.2.1 Establishing the quality policy

The Company's quality policy defines _____

5.2.2 Communicating the quality policy

The Company's quality policy is available to interested parties and is maintained as documented information that is _____

5.3 Organizational roles, responsibilities and authorities

Assignment of responsibilities and authorities for relevant roles are communicated and understood throughout the organization according to the **QMS-05 Responsibilities and Authorities Procedure** to ensure _____

The organization chart below describes the basic management structure of the Company. In all cases, the appropriate person has _____ which is further defined in the **QMS-05 Responsibilities and Authorities Procedure**.

All employees are empowered to _____

The Quality Manager has experience with software development and has been assigned the role of Responsible Quality Authority (RQA). As RQA, the Quality Manager is responsible for:

- _____
- _____
- _____
- _____
- _____
- _____
- _____

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The Quality Manager has the responsibility and authority to



5.3.1 Organization chart

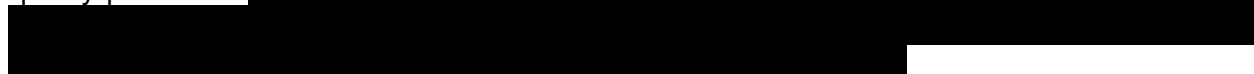


Section 6: Planning

This quality system was planned in advance and its documented policies and procedures were reviewed prior to implementation. Management affirms the QMS is



The QMS documentation acts as the overall quality plan for the Company. As required, specific quality processes



Quality system planning and control is treated as a process (called the Management Process) and is defined in the **QMS-04 Management Process Procedure**.

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The Company defines appropriate software life cycle models to determine the development of

In addition, the Company defines the content of software management plans such as

The Company defines how software engineering methods are tailored within the life cycle and identifies the tools and environment for

The responsible authority for software development considers any change to a life cycle model that may affect the quality management system and ensures

6.1 Actions to address risks and opportunities

6.1.1 Planning for the QMS

Planning for the quality management system includes

6.1.2 Planning requirements

The Company determines the effectivity of actions taken to establish process controls that

according to the **QMS-04 Management Process Procedure**.

6.2 Quality objectives and planning to achieve them

6.2.1 Establishing quality objectives

The Company establishes and maintains documented information for quality objectives at relevant functions, levels and processes according to the **QMS-04 Management Process Procedure**. Quality objectives are measurable and consistent with the quality policy and take into account applicable requirements. Quality objectives are

6.2.2 Achieving quality objectives

The Company determines how to achieve its quality objectives according to

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6.3 Planning of changes

Changes to the quality management system are performed according to the **QMS-02 Configuration Management Procedure**, which considers [REDACTED]

IMPORTANT:

The quality management system is maintained at its authorized revision level until planned changes are implemented.

Section 7: Support

7.1 Resources

7.1.1 General

The Company determines and provides the resources needed for [REDACTED]

7.1.2 People

The Company determines and provides the people necessary for [REDACTED]

7.1.3 Infrastructure

The Company determines, provides and maintains the infrastructure necessary for [REDACTED]

Hardware, software, tools and facilities for development, operation or maintenance of software and software tools that support the design and development process include:

- [REDACTED],
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

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Tools and techniques that are purchased or developed internally are evaluated for fitness for their designated purpose. Prior to use, the Company evaluates, approves and places under configuration control the tools used for [REDACTED]

The Company has determined and provides [REDACTED]

and include a review of:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

The Company utilizes maintenance practices and skilled maintenance personnel to [REDACTED]

The Company utilizes corrective maintenance and skilled maintenance personnel to [REDACTED]

7.1.4 Environment for the operation of processes

The Company determines, provides and maintains the environment necessary for the operation of its processes to achieve conformity of products and services. The work environment is [REDACTED]

7.1.5 Monitoring and measuring resources

7.1.5.1 General

When monitoring or measuring is used to verify the conformity of products and services, the Company determines [REDACTED]

The Company considers the effect of tools, facilities and techniques on the quality of the software product when approving the conduct of any tests that verify the conformance of the

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software product to specified requirements; in addition, such equipment may be placed under configuration management prior to use. Software is verified periodically to confirm [REDACTED]

[REDACTED] The suitability of test tools, techniques and data is verified prior to use to determine if there is a need to improve and/or upgrade them. The Company has developed procedures for determining [REDACTED] Measuring and monitoring devices used in software development, testing, maintenance and operation include:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

7.1.5.2 Measurement traceability

All measuring and test equipment instruments and devices used to determine an item's conformance to specified requirements are [REDACTED]

[REDACTED] according to the **QMS-15 Calibration Procedure**.

Measuring equipment is [REDACTED]

[REDACTED] according to the **QMS-15 Calibration Procedure**.

7.1.6 Organizational knowledge

The Company determines, [REDACTED]

[REDACTED] The Company considers [REDACTED] according to the **QMS-07 Proposal Development and Contract Review Procedure**.

7.2 Competence

The Company determines and periodically reviews the necessary competence for Employees whose work affects the performance and effectiveness of the quality management system. The Company affirms [REDACTED]

All Company personnel are [REDACTED]

[REDACTED] Software training needs consider [REDACTED]

[REDACTED] Technologies employed in software development, operation and maintenance are continually monitored and evaluated to determine [REDACTED]

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The Company has implemented a training program that:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

Management conducts [REDACTED]
[REDACTED]
[REDACTED]

7.3 Awareness

The Company affirms [REDACTED]
[REDACTED]

7.4 Communication

Internal and external communications that are relevant to the QMS are [REDACTED]
[REDACTED] according to the **QMS-04 Management Process Procedure**.

To ensure proper communication [REDACTED]
[REDACTED]
which is documented in the **QMS-04 Management Process Procedure**.

Management periodically [REDACTED]
[REDACTED]

Employees are encouraged to use the **Request for Support (RFS)** to submit suggestions for improvements. This system requires management to take action on quality related issues within the Company.

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7.5 Documented information

7.5.1 General

The Company's quality management system includes documented information required by **AS9100D** and records necessary for the effectiveness of the quality management system. The Company has developed documents for the effective planning, operation, and control of processes for software that describe [REDACTED]

The Company maintains all required documentation to [REDACTED]

All Managers are responsible for [REDACTED]

The quality system documentation is comprised of a hierarchy of documents that flow from this Quality Handbook (see 4.4.1).

All documents must [REDACTED]

The order of precedence of order-specific documentation is as follows unless otherwise directed by Customer requirements:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

7.5.2 Creating and updating

During creation and update of documented information, the Company reviews and approves documents [REDACTED]

[REDACTED] according to the **QMS-01 Control of Documented Information Procedure**.

The Company has developed a secure web-based document portal that enables [REDACTED]

[REDACTED] according to the **QMS-02 Configuration Management Procedure**.

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7.5.3 Control of documented information

7.5.3.1 Documents required by QMS and international standard

Documents are controlled so that the information on them is [REDACTED]

[REDACTED] For details, see **QMS-01 Control of Documented Information Procedure** and **QMS-02 Configuration Management Procedure**.

7.5.3.2 Activities for control of documented information

The Company controls [REDACTED]

[REDACTED] according to the **QMS-01 Control of Documented Information Procedure**. Superseded and/or obsolete documents may [REDACTED]

[REDACTED] according to the **QMS-02 Configuration Management Procedure**. Management provides guidelines for managing [REDACTED] according to the **QMS-04 Management Process Procedure**.

Records are controlled to provide evidence of conformity to requirements that include [REDACTED]

Records are controlled to provide evidence of the effective operation of the quality management system that include [REDACTED]

Where records are held on electronic media, consideration of the retention times and accessibility of the records takes into account [REDACTED]

[REDACTED] Records include information held in email systems.

The Company assesses the method for erasure of electronic records at the end of their required retention period according to [REDACTED]

The records subject to control are defined in the **QMS-03 Control of Documented Information Procedure**.

Section 8: Operation

8.1 Organizational planning and control

Processes that are used to achieve compliance with requirements for deliverable products and services are [REDACTED]

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The Company applies the **QMS-07 Proposal Development and Contract Review Procedure** to engage Responsible Authorities and

The **QMS-02 Configuration Management Procedure** is used to approve processes and control changes. Consequences of unintended changes are

Inspection, testing and "on-time delivery" requirements are

Project management is used to

Key product realization processes include the following procedures:

-
-
-
-
-
-

Quality objectives have been established for each key process. At times, additional quality objectives and measurements may

Suppliers used for outsourced processes are approved according to 8.4 herein and the **QMS-08 Purchasing Procedure**. When the Company provides supplies for outside processing, such as acceptance testing, the work is performed under the following conditions:

-
-
-
-
-

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Build, release and replication processes for software include:

- [REDACTED]
- [REDACTED]
- [REDACTED]

8.1.1 Operational risk management

Risk management for operational processes is conducted according to **QMS-18 Risk Mitigation and Planning Procedure**. Proportionate actions are [REDACTED]

8.1.2 Configuration management

The configuration of products and services is controlled [REDACTED]

[REDACTED] according to the **QMS-02 Configuration Management Procedure**.

8.1.3 Product safety

The Company plans, implements and controls the processes [REDACTED]

[REDACTED] according to the **QMS-10 Manufacturing Procedure**.

8.1.4 Prevention of counterfeit parts

The Company [REDACTED]

[REDACTED] according to the **QMS-03 Counterfeit Parts Prevention Procedure and QMS-04 Management Process Procedure**.

8.1.5 Software Life Cycle

The Company plans and performs the processes, activities and tasks for software development using life cycle models that are suitable for each software project, which considers [REDACTED]

The Company determines the methods and tools that are suitable for the design and development method according to [REDACTED]

[REDACTED] Design and development of software for products that could cause injury or danger to people, property or the environment ensures [REDACTED]

[REDACTED] The Company determines how specific products are to be developed, assessed or maintained.

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- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

Customer Communication during Operations and Maintenance

Sources of information that involve Customer communication in operations and maintenance include the following:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

8.2.2 Determining the requirements related to products and services

The Company determines it can meet the claims for products and services it offers and affirms

[REDACTED] according to the **QMS-07**

Proposal Development and Contract Review Procedure.

The Company captures all contractual and special requirements of the Customer as well as

[REDACTED]

8.2.2.1 Customer-Related Software Requirements

Specific actions used to determine Customer requirements include:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

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The Company expresses requirements in clear and unambiguous terms that facilitate validation throughout the development life cycle and during product acceptance.

When a system specification is applied, the Company applies methods to allocate requirements into hardware and software items with appropriate interface specifications. Configuration controls or contract amendments are used when changes are made to approved requirements. The Company specifies the interfaces between the software product to be developed and other software or system products.

8.2.3 Review of requirements related to products and services

8.2.3.1 Ability to meet requirements

Applicable functions within the Company review Customer requirements according to the **QMS-07 Proposal Development and Contract Review Procedure**

[REDACTED]

The Company pays particular attention to

[REDACTED]

8.2.3.2 Retain documented information of review

The Company establishes and maintains a record for each contract review that includes

[REDACTED]

8.2.3.2.1 Organization Concerns

The Company determines issues that may be relevant during review of software tenders, contracts or orders, which includes:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

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- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

8.2.3.2.2 Risks

The following risks are determined when reviewing requirements related to the product:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

The Company evaluates the implications of any contract changes on resources, schedules and costs particularly for [REDACTED]

8.2.3.2.3 Customer Representative

The Customer representative has the following authorities:

- [REDACTED]
- [REDACTED]

8.2.4 Changes to requirements for products and services

When the requirements for products and services are changed, the Company affirms

[REDACTED]

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- o [REDACTED]
- o [REDACTED]
- schedule that identifies:
 - o [REDACTED]
 - o [REDACTED]
 - o [REDACTED]
 - o [REDACTED]
 - o [REDACTED]
 - o [REDACTED]
 - o [REDACTED]

For a COTS product where the Company does not have control over the design, the Company assures the product meets acceptance criteria. Planning is periodically reviewed and plans are amended when appropriate.

8.3.2.2 Review, Verification and Validation

Software operations and maintenance may be covered in service level agreements or maintenance procedures.

8.3.2.3 Responsibilities and Authorities

No specific guidance.

8.3.2.4 Interfaces

The boundaries of responsibility for each part of the software product and the way that technical information will be transmitted between all parties is clearly defined in the design and development planning for suppliers. The Company requires review of a supplier's design and development planning. In defining interfaces, care is taken to [REDACTED]

[REDACTED] which may include [REDACTED]

[REDACTED] End-users and [REDACTED]

any intermediate operation function are involved to ensure [REDACTED]

8.3.3 Design and Development Inputs

The Company allocates requirements for hardware, software components and manual operations to system architectural design. Inputs to software requirements analysis are the system requirements allocated to software and specifications of the interfaces between the system components. Design and development input is determined from [REDACTED]

[REDACTED] Other design and development inputs are determined from [REDACTED]

The Company reviews design and development input documents for:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

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- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

8.3.4 Design and Development Outputs

Outputs from the design and development process are defined and documented according to [REDACTED]

[REDACTED] Design and development outputs may be expressed in textual form by diagrams or using symbolic modelling notation and may include:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

The Company prepares design and development (output) documentation for prototyping when used. The acceptance criteria for design and development outputs are defined to [REDACTED]

8.3.5 Design and Development Review

The degree of formality and rigor of the activities associated with the review processes is appropriate for [REDACTED]

[REDACTED] The Company has established procedures for disposition of process and product deficiencies or nonconformities that are [REDACTED]

The Company determines criteria for design and development reviews that include [REDACTED]

[REDACTED] Review of design and development is performed according to [REDACTED] Elements of the review include:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

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- [REDACTED]

The Company determines additional design and development activities only when [REDACTED]

8.3.6 Design and development verification

Software verification confirms that the output of design and development activities conforms to [REDACTED] Verification includes [REDACTED]

[REDACTED] Verification is also conducted on the output from other activities, e.g. [REDACTED] The verification results and any subsequent actions are recorded and checked upon completion of the actions. Specific assurance methods are used for [REDACTED]

8.3.7 Design and development validation

8.3.7.1 Validation

Prior to final acceptance, the Company validates the operation of software according to [REDACTED]

Configuration audits or evaluations are performed to confirm that software complies with its contractual or specified requirements, which may require [REDACTED]

8.3.7.2 Testing

Test planning addresses [REDACTED] Test planning defines responsibilities and identifies the human and physical resources needed for testing. Specific testing for software includes [REDACTED] the following:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

Regression testing is performed to verify or validate that the capabilities of the software have not been compromised by a change. Acceptance tests are performed for the Customer's benefit with the aim of [REDACTED] Testing tools and [REDACTED]

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the environment to be used are qualified and controlled and any limitations to testing recorded. Testing procedures provide [REDACTED]

8.3.8 Control of design and development changes

Changes to a software specification or component considers [REDACTED]

8.4 Control of externally provided processes, products and services

The Company [REDACTED]

does not [REDACTED]

8.4.1 General

The Company affirms externally provided processes, products and services conform to requirements according to the **QMS-08 Purchasing Procedure** and **QMS-09 Receiving Procedure**. The Company determines the controls to be applied to externally provided processes, products and services when [REDACTED]

8.4.1.1 External provider abilities

The Company determines and applies criteria for the evaluation, selection, monitoring of performance and re-evaluation of external providers that is based upon [REDACTED] processes or products and services according to requirements and **QMS-08 Purchasing Procedure**. [REDACTED]

8.4.1.2 Purchased Products

Free software is considered purchased product, e.g., open source development tools.

In developing, supplying, installing and maintaining software products, types of purchased products may include:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

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- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

The Company manages the risks associated with licensing, maintenance, help desk and Customer support services in developing, supplying, installing and maintaining software products. Supplier capability is determined by [REDACTED]

8.4.1.3 Purchased Product Control

Purchased software used in deliverable products is configuration controlled throughout design and development. Care is taken to ensure [REDACTED]

[REDACTED] Suppliers are selected based upon evaluation of the supplier's proposals and process capabilities and other factors such as [REDACTED]

8.4.2 Type and extent of control

The Company affirms externally provided processes, products and services [REDACTED]

8.4.3 Information for external providers

The Company affirms mandatory requirements are [REDACTED]

8.4.3.1 Purchasing Information

Purchasing information for software may include, where applicable:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

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deficiency is discovered, suitable qualification and/or certification of the process and/or affected employee(s) is performed according to the **QMS-06 Training Procedure**. The controls for validation activities are defined in the **QMS-10 Manufacturing Procedure** and **QMS-02 Configuration Management Procedure**.

The Company considers processes that may be used to compensate for the inability to fully validate a software product, which include:

- [REDACTED]
- [REDACTED]

Methods are commensurate with the risks and consequences of design and development failures.

8.5.1.1 Control of production equipment, tools and software programs

Software replication activities include:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

8.5.1.2 Validation and Control of Special Processes

8.5.1.3 Production and service provisions for software products includes:

- [REDACTED]
- [REDACTED]
- [REDACTED]

8.5.2 Identification and traceability

The Company uses suitable means to identify outputs when it is necessary to ensure the conformity of products and services, and identifies the status of outputs with respect to

[REDACTED]

QC stamps or registered names and initials of inspectors may

[REDACTED]

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8.5.2.1 Overview

For software, identification and traceability is implemented through configuration management, which includes [REDACTED]

8.5.2.2 Configuration management process

The scope of configuration management includes:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

8.5.2.3 Traceability

The Company maintains a process to trace the components of the software item or product throughout the life cycle.

8.5.3 Property belonging to Customers or external providers

When outside sources provide property for processing or use, it is suitably identified as such to [REDACTED]

Property is controlled according to the **QMS-10 Manufacturing Procedure**, [REDACTED]

Customer property may include:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

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- [REDACTED]
- [REDACTED]
- [REDACTED]

The Company prepares maintenance agreements that address required licensing and support including [REDACTED]

[REDACTED] The Company defines the methods used to update Customer-supplied items prior to acceptance and integration. Customer-supplied products are treated as purchased products, which includes [REDACTED]

8.5.4 Preservation

According to contractual directives, instructions are detailed in the applicable job documentation [REDACTED]

[REDACTED] according to the **QMS-10 Manufacturing Procedure** and **QMS-11 Shipping Procedure**.

The Company ensures that its products are not altered from the point of production, through replication, handling and storage, to the point of delivery. The Company takes appropriate precautions to store software information on media that does not degrade. Delivery provides for [REDACTED]

[REDACTED] Delivery of software may be achieved by [REDACTED]

[REDACTED] The Company considers the following actions when handling, packaging, storing or delivering software:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

8.5.5 Post-delivery activities

The Company meets requirements for post-delivery activities associated with the products and services according to [REDACTED]

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The Company provides as applicable:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

8.5.5.1 Control of Service Operations and Software Installation

The Company services supplies returned to it for warranty work or repair - field servicing is(is not) performed. For such product work, all normal processes and procedures apply as if the supply were a new manufacture.

The following considerations are made when the Company is responsible for installation of software:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

8.5.5.2 Operations

The Company plans and controls operations that include arrangements for ensuring continuity of support, such as [REDACTED]

8.5.5.3 Maintenance

The Company has established a process for performing maintenance and verification activities. Maintenance activities include [REDACTED]

Maintenance activities may include:

- [REDACTED]
- [REDACTED]

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- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

Records of the maintenance activities are utilized for evaluation and enhancement of the software product and for improvement of the quality management system. When resolving problems, temporary fixes may be used to [REDACTED]

8.5.6 Control of changes

To ensure continuing conformity with requirements, the Company reviews and controls [REDACTED]

8.6 Release of products and services

In-process inspections are conducted during production and service activities to ensure ongoing quality of work according to the **QMS-10 Manufacturing Procedure**. Products and services are released for delivery to Customers only. [REDACTED]

8.6.1 Verification of Purchased Product

The Company determines the methods of verification, validation and acceptance of subcontracted work when software development is subcontracted or when purchasing associated hardware and software. The Company conducts acceptance testing and ensures the availability of adequate support when purchasing software for use in development. Careful consideration is given to [REDACTED]

Consideration is also given to [REDACTED]

The product is also validated against [REDACTED]

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8.7 Control of nonconforming outputs

8.7.1 Identify and control nonconforming outputs

The Company affirms outputs that do not conform to requirements are

Nonconforming outputs may be identified by
The Company takes appropriate actions based on

Nonconformances are corrected then reverified to confirm outputs are in compliance with requirements. When appropriate, the Company

The Company segregates nonconforming items by transferring them out of a production or testing environment into a separate environment or segregates the nonconforming item (hardware) that contains the nonconforming software.

The Company identifies the investigation and resolution of defects and the control and recording of nonconforming product when

The Company considers the following during disposition of nonconformities:

-
-
-

The Company updates the software version when repair or rework is used to achieve fulfillment of specified requirements. Disposition of nonconforming software product may include:

-
-
-
-

8.7.2 Retain documented information for nonconformities

Records used to disposition nonconformities clearly describe each nonconformance and includes:

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9.2.1 Conduct internal audits at planned intervals

The Company conducts internal audits at planned intervals to provide

9.2.2 Audit requirements

The Company assigns Responsible Authorities to perform internal audits and report audit results to management according to the **QMS-12 Internal Auditing Procedure**.

9.3 Management review

9.3.1 General

Top management reviews the Company's quality management system at planned intervals to

9.3.2 Management review inputs

Management review is planned and carried out according to the **QMS-04 Management Process Procedure**, which takes into consideration

9.3.3 Management review outputs

Results from management reviews include

Section 10: Improvement

It is the goal of all employees to

10.1 General

10.2 Nonconformity and corrective action

10.2.1 Required actions for nonconformities

When nonconformity occurs in products and processes, including

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[REDACTED]

The Company affirms corrective actions are appropriate to the effects of nonconformities, and:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

The Company may use configuration management to control corrective actions that directly affect software products. Management reviews corrective actions that involve changes to the software life cycle processes.

10.2.2 Required records for nonconformities

The Company retains and maintains records regarding the nature of nonconformances, subsequent actions and [REDACTED]

10.3 Continual improvement

The Company continually improves [REDACTED]

Process improvements for software may be applied to any or all of the software life cycle processes that include [REDACTED]

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Appendix A: Company Processes and Applicable AS9100D Clauses

Process	Applicable AS9100D Clauses
Configuration Management	8.5.6 Control of Changes (was [REDACTED])
Control of Documented Information	7.5.2 Creating and Updating (was [REDACTED]) 7.5.3 Control of Documented Information (was [REDACTED])
Control of Nonconformities	8.7 Control of Nonconforming Outputs (was [REDACTED])
Corrective Action	10.2 Nonconformity and Corrective Action (was [REDACTED])
Design & Development	8.3 Design and Development of Products and Services (was [REDACTED]) 8.5.1 Control of Production and Service Provision (was [REDACTED])
Internal Auditing	9.2 Internal Audit (was 8.2.2 Internal audit)
Management	4.1 Understanding the organization and its context (was [REDACTED]) 4.2 Understanding the needs and expectations of interested parties (was [REDACTED]) 4.3 Determining the scope of the quality management system (was [REDACTED]) 4.4 Quality Management System and its Processes (was [REDACTED]) 5.1.1 Leadership and commitment: General (was [REDACTED]), 5.1.2 Customer Focus (was [REDACTED]) 5.2.1 Establishing the Quality Policy (was [REDACTED]), 5.2.2 Communicating the Quality Policy (was [REDACTED]) 5.3 Organizational Roles, Responsibilities and Authorities (was [REDACTED]) 6.1.1 Determine risks and opportunities when planning for the QMS (new), 6.1.2 Planning actions (new) 6.2.1 Establishing quality objectives (was [REDACTED]), 6.2.2 Achieving quality objectives (new) 6.3 Planning of changes (was [REDACTED]) 7.1.1 Support: Resources: General (was [REDACTED]), 7.1.2 People (was [REDACTED]), 7.1.3 Infrastructure (was [REDACTED]), 7.1.4 Environment for the Operation of Processes (was [REDACTED]), 7.1.5.1 Monitoring and measuring resources: General (was [REDACTED]) 7.1.6 Organizational knowledge (new) 7.2 Competence (was [REDACTED]) 7.3 Awareness (was [REDACTED]) 7.4 Communication (was [REDACTED]) 7.5.1 Documented Information: General (was [REDACTED]), 7.5.2 Creating and updating (was [REDACTED]) 7.5.3.1 Control of documented information required by International Standard (new) 8.1 Operational planning and control (was [REDACTED]), 8.1.1 Operational risk management (new), 8.1.2 Configuration management (was [REDACTED]), 8.1.3 Product safety (new), 8.1.4 Prevention of counterfeit parts (new) 8.2.1 Customer Communication (was [REDACTED]) 8.5.6 Control of changes (was [REDACTED]) 9.1.1 Monitoring, measurement, analysis and evaluation: General (was [REDACTED]), 9.1.2 Customer Satisfaction (was [REDACTED]), 9.1.3 Analysis and evaluation (was [REDACTED]) 9.2 Internal audit (was [REDACTED]) 9.3.1 Management Review: General (was [REDACTED]), 9.3.2 Management review inputs (was [REDACTED]), 9.3.3 Management review outputs (was [REDACTED]) 10.1 Improvement: General (was [REDACTED]) 10.2.1.e,h Required actions for nonconformities (was [REDACTED])

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Process	Applicable AS9100D Clauses
Manufacturing	10.3 Continual Improvement (was [REDACTED])
	8.1 Operational Planning and Control (was [REDACTED])
	8.5.1.3 Production Process Verification (was [REDACTED])
	8.1 Operational Planning and Control (was [REDACTED])
	8.5.1.1 Control of Production Equipment, Tools and Software Programs (was [REDACTED])
	8.5.5 Post-Delivery Activities (was [REDACTED])
	8.5.2 Identification and Traceability (was [REDACTED])
	8.5.3 Property Belonging to Customers or External Providers (was [REDACTED])
	8.5.4 Preservation (was [REDACTED])
	8.6 Release of Products and Services (was [REDACTED])
Proposal Development & Contract Review	8.7 Control of Nonconforming Outputs (was [REDACTED])
	8.2.2 Requirements Related to Products and Services (was [REDACTED])
	8.2.3 Review of Requirements Related to Products and Services (was [REDACTED])
Purchasing	8.2.4 Changes to Requirements for Products and Services (was [REDACTED])
	8.4.1 Control of Externally Provided Processes, Products and Services: General (was [REDACTED])
Receiving	8.4.3 Information for External Providers (was [REDACTED])
	8.4.3 Information for External Providers (was [REDACTED])
	8.5.2 Identification and Traceability (was [REDACTED])
	8.5.3 Property Belonging to Customers or External Providers (was [REDACTED])
	8.5.4 Preservation (was [REDACTED])
	8.6 Release of Products and Services (was [REDACTED])
Shipping	8.7 Control of Nonconforming Outputs (was [REDACTED])
	8.2.2 Determining Requirements Related to Products and Services (was [REDACTED])
	8.5.4, 8.5.5 Control of Production & Service Provision, Post Delivery Support (was [REDACTED])
	8.5.2 Identification and Traceability (was [REDACTED])
	8.5.4 Preservation (was [REDACTED])
	8.7 Control of Nonconforming Outputs (was [REDACTED])

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Appendix B: Company Processes and Applicable Documents


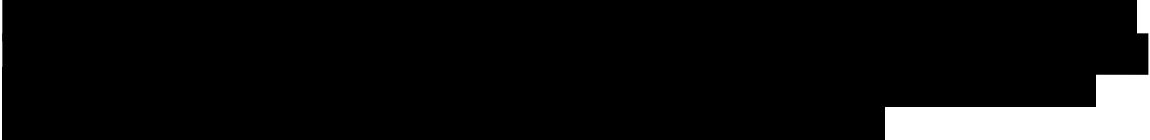
Process	Applicable Company Procedures	Applicable Company Records
Corrective Action	QMS-13 Corrective Action	Nonconformity and Corrective Action 10.2 (was [REDACTED])
Design & Development	QMS-17 Design & Development	Operational Planning and Control 8.1.e.1 (was [REDACTED]) Design and Development Inputs 8.3.3 (was [REDACTED]) Design and Development Controls 8.3.4 (was [REDACTED]) Design and Development Changes 8.3.6 (was [REDACTED])
Internal Auditing	QMS-12 Internal Auditing	Internal audit 9.2 (was [REDACTED])
Management	QMS-00 Quality Handbook QMS-01 Control of Documented Information QMS-02 Configuration Management QMS-04 Management Process QMS-05 Responsibilities & Authorities QMS-06 Training QMS-15 Calibration QMS-16 Definitions and Abbreviation	Management Review: General 9.3.1 (was [REDACTED]) Competence 7.2 (was [REDACTED]) Awareness 7.3 (was [REDACTED]) Monitoring and Measuring Resources 7.1.5, 7.1.5.1, 7.1.5.2 (was [REDACTED])
Manufacturing	QMS-10 Manufacturing QMS-14 Control of Nonconformities Procedure	Identification and Traceability (if required) 8.5.2 (was [REDACTED]) Property Belonging to Customers or External Providers 8.5.3 (was [REDACTED]) Release of Products and Services 8.6 (was [REDACTED]) Control of Nonconforming Outputs 8.7 (was [REDACTED])
Proposal Development & Contract Review	QMS-07 Proposal Development & Contract Review	Review of Requirements Related to Products and Services 8.2.3 (was [REDACTED])
Purchasing	QMS-08 Purchasing	Control of Externally Provided Processes, Products and Services: General 8.4.1 (was [REDACTED])
Receiving	QMS-09 Receiving QMS-14 Control of Nonconformities Procedure	Property Belonging to Customers or External Providers 8.5.3 (was [REDACTED]) Control of nonconforming product 8.7 (was [REDACTED])
Shipping	QMS-11 Shipping QMS-14 Control of Nonconformities Procedure	Property Belonging to Customers or External Providers 8.5.3 (was [REDACTED]) 8.5.4 Preservation (was [REDACTED]) Control of Nonconforming Outputs 8.7 (was [REDACTED])

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Appendix C: Outsourced Processes

The following processes are outsourced and controlled as indicated:

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- 
- 

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Appendix D: Quality Objectives

Process	Quality Objective	Metric
Corrective Action		
Design & Development		
Internal Auditing		
Management		
Manufacturing		
Proposal Development & Contract Review		
Purchasing		
Receiving		
Shipping		

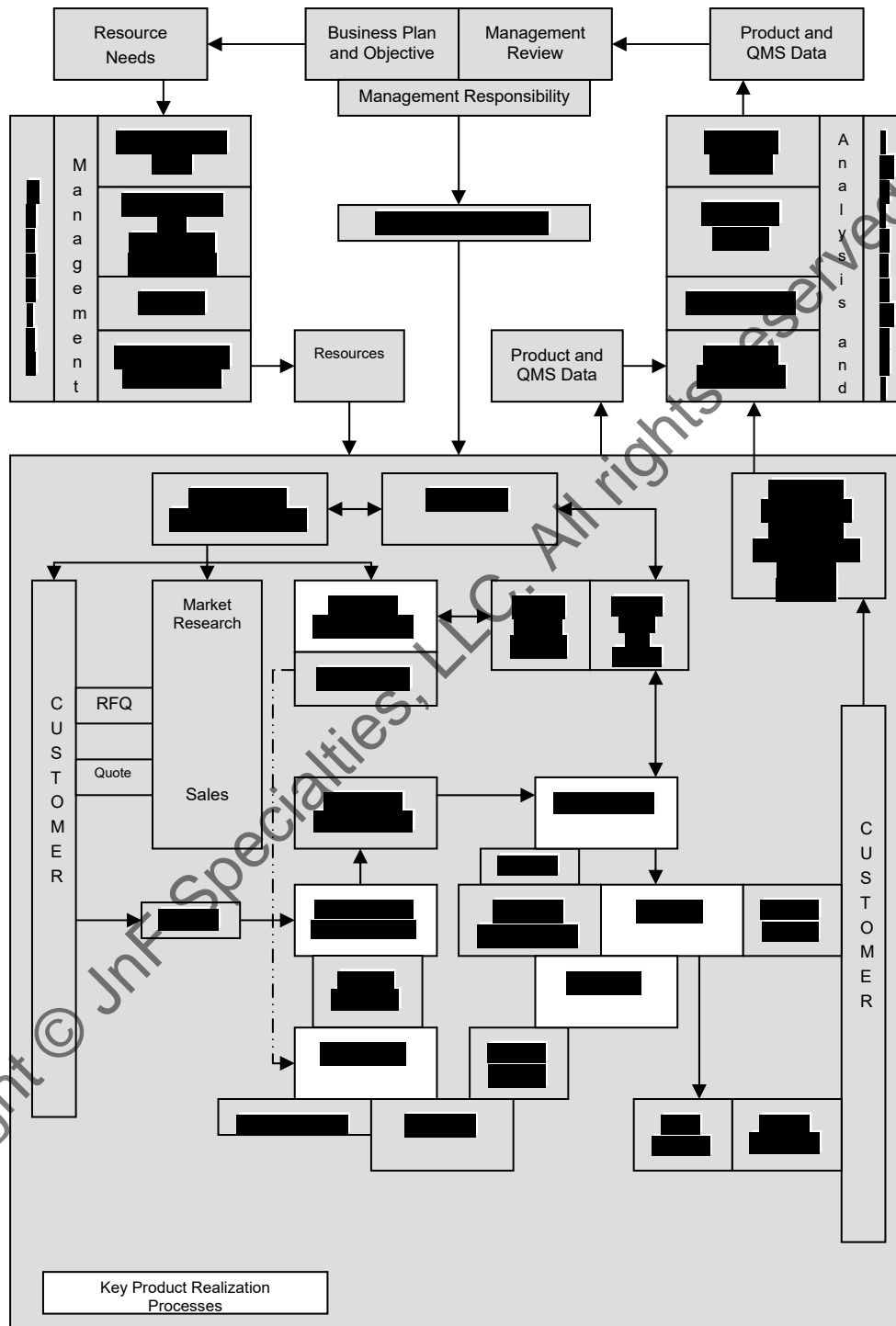
COMMENT:

The quantity of quality objectives listed above should be evaluated and adjusted to meet actual value-added goals of the Company, and match the list of procedures displayed in paragraph 8.1 and highlighted in Appendix E. The objectives that are listed above are

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Appendix E: Identification of Key Product Realization Processes



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Delete this page prior to release of quality handbook.

(paragraph numbers in parentheses are from the AS9100D standard)

Mandatory Procedures:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

Recommended Procedures:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

Applicable Records:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

