TULMAR
ENGINEERED FOR PROTECTION

Quality Manual

Conforms to AS9100 Rev D

Issue Date: September 18, 2023

Management Certification

This manual is approved by the top management representative.

Digitally signed by Patrick Tallon
Date: 2023.10.03 10:37:59 -04'00'

President & Chief Executive Officer

Meagan Bocking

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Quality Manager

Revision and Approval Record

Rev. #	Date	Written/Revised By	Approved By	Issue Notes
0	2021-06-30	Helena Vandeweerd	Patrick Tallon	Replaced ISO with AS9100D
1	2021-09-15	Helena Vandeweerd	Patrick Tallon	Appendix A & B revised
2	2021-10-15	Helena Vandeweerd	Patrick Tallon	8.1.3, 8.5.1, 8.5.1.2, Appx A revised
3	2022-05-05	Helena Vandeweerd	Patrick Tallon	5.3, 8.5.1, 8.6, Appx B revised
4	2023-09-18	Meagan Bocking	Patrick Tallon	5.3 (Fig.1), 7.1.4, 7.4, Appx A revised

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1.0 Welcome to Tulmar Safety Systems Inc.

Tulmar Safety Systems Inc. (referred to herein as Tulmar) designs, manufactures, distributes, and recertifies engineered protective textiles, survivability, and safety solutions for Aerospace and Defence markets.

Headquartered in Hawkesbury, Ontario, Tulmar operates from a modern 60,000 square foot facility with equipment ranging from CNC cutting tables, computerized sewing machines, R.F. (radio frequency) welding and heat-sealing equipment, to highly sophisticated testing equipment including cold temperature test chambers, and computerized measurement and test equipment for quality inspection.

2.0 About the Tulmar Quality Manual

This manual is prepared for the purpose of defining the company's interpretations of the AS9100 Revision D international standard as well as to demonstrate how the company complies with that standard.

This manual describes the Quality Management System (QMS) and delineates authorities, interrelationships, and responsibilities of the personnel responsible for performing within the system. This manual also provides procedures or references for all activities comprising the quality management system to ensure compliance to the necessary requirements of the standard.

This manual is used internally to guide the company's employees through the various requirements of the AS9100D standard that must be met and maintained to ensure customer satisfaction, continuous improvement and provide the necessary instructions that create an empowered workforce.

This manual is used externally to introduce our quality management system to our customers and other external organizations or individuals. The manual is used to familiarize them with the controls that have been implemented and to assure them that the integrity of the quality management system is maintained and focused on customer satisfaction and continuous improvement.

This manual presents "Notes" which are used to define how Tulmar has tailored its management system to suit its purposes. These are intended to clarify implementation approaches and interpretations for concepts which are not otherwise clearly defined in AS9100. Notes appear in italics, with gray background.

3.0 Terms and Definitions

Tulmar adopts the following terms and definitions within its quality management system. Where no definition is provided, the company typically adopts the definitions provided in ISO 9000:2015 Quality Management – Fundamentals and Vocabulary and AS9100 Rev D. In some cases, specific procedures or documentation may provide a different definition to be used in the context of that document; in such cases, the definition will supersede those provided for in this Quality Manual or the referenced definition sources.

3.1 General Terminology

Tulmar:	Tulmar Safety Systems Inc.
Document:	Written information used to describe how an activity is done.
Record:	Captured evidence of an activity having been done.

3.2 Risk-Based Thinking Terminology

Risk:	Negative effect of uncertainty
Opportunity:	Positive effect of uncertainty
Uncertainty:	A deficiency of information related to understanding or knowledge of an event, its consequence, or likelihood. (Not to be confused with measurement uncertainty.)

3.3 Nonconforming Product Terminology

Rework: Efforts to bring nonconforming product into conformance through additional operations that do not alter the original design of the product.

Repair: Efforts to bring nonconforming product into conformance through additional operations that alter the original design of the product; this may be through the addition of material not specified in the original design, or through altering pre-existing design features.

Scrap: The discard of nonconforming product in lieu of rework or repair.

4.0 Context of the Organization

4.1 Understanding the Organization and its Context

Tulmar has reviewed and analyzed key aspects of itself and its stakeholders to determine the strategic direction of the company. This includes understanding internal and external issues that are of concern to Tulmar and its interested parties (per 4.2 below); the issues are identified per the document ***QP-001, Context of the Organization Procedure.***

Such issues are monitored and updated as appropriate and discussed as part of management reviews.

4.2 Understanding the Needs and Expectations of Interested Parties

The issues determined per 4.1 above are identified through an analysis of risks facing Tulmar and its interested parties, those stakeholders who receive our Products and Services, or who may be impacted by them, or those parties who may otherwise have a significant interest in our company. These parties are identified per the document ***QP-001, Context of the Organization Procedure.***

This information is then used by senior management to determine the company's strategic direction. This is defined in records of management review, and periodically updated as conditions and situations change.

4.3 Determining the Scope of the Quality Management System

Based on an analysis of the above issues of concern and interests of stakeholders, and in consideration of its products and services, Tulmar has determined the scope of the management system as follows:

Design, manufacture, distribution, and maintenance of inflatable devices, passenger restraints, life support equipment, vehicle seating, stowage, and ground support equipment for aerospace and defence markets.

The quality system applies to all processes, activities, and employees within the company.

The facility is located at:

1123 Cameron Street,
Hawkesbury, ON, Canada, K6A 2B8
Phone: 613-632-1282 Fax: 613-632-2030
Website: www.tulmar.com

The company claims no exclusions from the AS9100 standard.

4.4 Quality Management System and its Processes

4.4.1 Process Identification

Tulmar has adopted a process approach for its management system. By identifying the top-level processes within the company, and then managing each of these discretely, Tulmar reduces the potential for nonconforming Products and Services discovered during final processes or after delivery. Instead, nonconformities and risks are identified in real time, by actions taken within each of the top-level processes.

Note: not all activities are considered "processes" – the term "process" in this context indicates the activity has been elevated to a higher level of control and management oversight. The controls indicated herein are applicable only to the top-level processes identified.

The following top-level processes have been identified for Tulmar:

- Sales
- Design and Development
- Purchasing
- Product and Service Delivery
- Quality Control

Each process may be supported by other activities, such as tasks or sub-processes. Monitoring and control of top-level processes ensures effective implementation and control of all subordinate tasks or sub- processes.

Each top-level process has a ***Process Definition*** document which defines:

- applicable inputs and outputs
- process owner(s)
- applicable responsibilities and authorities
- applicable risks and opportunities
- critical and supporting resources
- criteria and methods employed to ensure the effectiveness of the process
- quality objectives related to that process

The sequence of interaction of Tulmar's quality management system is illustrated in ***Appendix A - Overall Process Sequence & Interactions.***

Note: Appendix A represents the typical sequence of processes and may be altered depending on customer or regulatory requirements at the job or contract level, as needed.

4.5 Process Controls & Objectives

Each process has at least one objective established for it; this is a statement of the intent of the process. Each objective is then supported by at least one "metric" or key performance indicator (KPI) which is then measured to determine the process's ability to meet the quality objective.

Note: some processes have multiple objectives and multiple metrics. This is determined by the nature of the process, its impact on Products and Services, and associated risks.

Note: Whereas ISO 9001 discusses process measurements and "quality objectives" as separate concepts, Tulmar combines them; i.e., quality objectives are used to control the processes. Additional objectives for Products and Services may be assigned, but these will also be used to measure process effectiveness.

Throughout the year, metrics data is gathered by process owners or other assigned managers, to present to the Senior Leadership Team. The data is then analyzed by the Senior Leadership Team in order for goals to be set and adjusted for the purposes of long-term continual improvement.

The specific quality objectives for each process are defined in the applicable ***Process Definition*** document.

Metrics, along with current standings and goals for each objective, are recorded in records of management review.

When a process does not meet a goal, or an unexpected problem is encountered with a process, the corrective action process is implemented to research and resolve the issue. In addition, opportunities for improvement are sought and implemented for the identified processes.

4.5.1 Outsourced Processes

Any process performed by a third party is considered an "outsourced process" and must be controlled, as well. The control methods implemented for outsourced processes are defined in the document ***QP-007, Purchasing Procedure.***

The type and extent of control to be applied to the outsourced process take into consideration:

a) the potential impact of the outsourced process on the company's capability to provide product that conforms to requirements,
b) the degree to which the control for the process is shared,
c) the capability of achieving the necessary control through the purchasing contract requirements.

5.0 Leadership

5.1 Leadership & Commitment

5.1.1 General

Tulmar's Senior Leadership Team provides evidence of leadership and commitment to the development and implementation of the management system and continually improving its effectiveness by:

a) taking accountability for the effectiveness of the management system;
b) ensuring that the ***Quality Policy*** and quality objectives are established for the management system and are compatible with the strategic direction and the context of the organization;
c) ensuring the integration of the management system requirements into the organization's other business processes, as deemed appropriate (see note);
d) promoting awareness of the process approach;
e) ensuring that the resources needed for the management system are available;
f) communicating the importance of effective quality management and of conforming to the management system requirements;
g) ensuring that the management system achieves its intended results;
h) engaging, directing, and supporting persons to contribute to the effectiveness of the management system;
i) promoting continual improvement;
j) supporting other relevant management roles to demonstrate their leadership as it applies to their areas of responsibility.

Note: "business processes" such as accounting, employee benefits management and legal activities are outside the scope of the QMS.

5.1.2 Customer Focus

Tulmar's Senior Leadership Team adopts a customer-first approach which ensures that customer needs and expectations are determined, converted into requirements, and are met with the aim of enhancing customer satisfaction.

This is accomplished by assuring:

a) customer and applicable statutory and regulatory requirements are determined, understood, and consistently met;
b) the risks and opportunities that can affect conformity of products and services and the ability to enhance customer satisfaction are determined and addressed;
c) the focus on enhancing customer satisfaction is maintained;
d) product and service conformity and on-time delivery performance are measured, and appropriate action is taken if planned results are not, or will not be, achieved.

5.2 Quality Policy

Tulmar's Senior Leadership Team has developed the Quality Policy which governs day-to-day operations to ensure quality. The Quality Policy is released as a standalone document and is communicated and implemented throughout the organization.

Quality Policy Statement

Tulmar's ***vision*** is to be a global provider of engineered protective solutions, an ethical and innovative enterprise of choice, driving sustainable growth.

Our ***goal*** is to consistently surpass the standards of quality and service demanded by our customers, delivering unrivalled expertise and products that meet specification on time every time.

Guided by this vision and goal, it is our intention to:

- Consistently meet or ***exceed our customer's*** needs and expectations,
- Consistently deliver ***high quality products*** and services in a cost effective and timely manner,
- Continually strive to ***improve the effectiveness*** of our business operations and processes, and
- Continually meet all ***legal and regulatory*** requirements.

5.3 Organizational Roles, Responsibilities, and Authorities

Tulmar's Senior Leadership Team has assigned responsibilities and authorities for all relevant roles in the company. These are communicated through the combination of the Organization Chart and Job Titles.

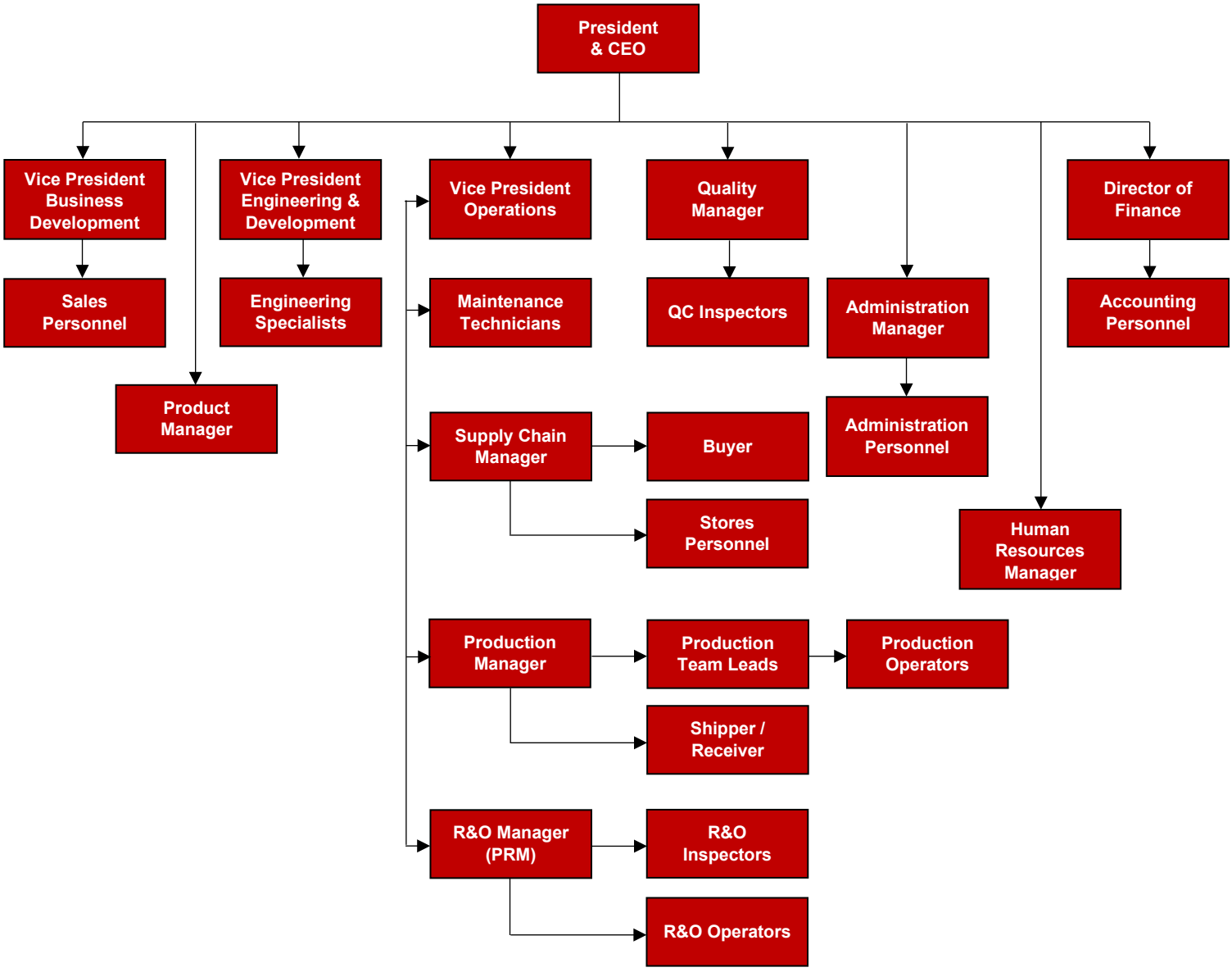
The Quality Manager has been assigned the role of Management System Representative when having a single point of contact to represent the Tulmar quality system is useful or required by customer or regulations.

The Management System Representative is also responsible for:

a) ensuring that the quality management system conforms to the requirements of the AS9100 Rev D International Standard;
b) ensuring that the processes are delivering their intended outputs;
c) reporting on the performance of the quality management system and on opportunities for improvement, to top management;
d) ensuring the promotion of customer focus throughout the organization;
e) ensuring that the integrity of the quality management system is maintained when changes to the quality management system are planned and implemented.

Other duties of the Management System Representative may be defined herein or within other documented procedures.

Figure 1: Tulmar Organizational Chart



6.0 Planning

6.1 Actions to Address Risks & Opportunities

Note: Tulmar views "uncertainty" as neutral but defines "risk" as a negative effect of uncertainty, and "opportunity" as a positive effect of uncertainty. Tulmar has elected to manage risks and opportunities separately, except where they may overlap. Formal risk management may not be utilized in all instances; instead, the level of risk assessment, analysis, treatment, and recordkeeping will be performed to the level deemed appropriate for each circumstance or application.

Tulmar considers risks and opportunities when taking actions within the management system, as well as when implementing or improving the management system; likewise, these are considered relative to products and services. Risks and opportunities are identified as part of the "Context of the Organization Exercise" defined in the document ***QP-001, Context of the Organization Procedure*** as well as throughout all other activities of the QMS.

Risks and opportunities are managed in accordance with the document ***QP-003, Risk Management Procedure***. This procedure defines how risks are managed to minimize their likelihood and impact, and how opportunities are managed to improve their likelihood and benefit.

6.2 Quality Objectives and Planning to Achieve Them

As part of the adoption of the process approach, Tulmar utilizes its process objectives, as discussed in 4.4 above, as the main quality objectives for the QMS. These include overall product-related quality objectives; additional product-related quality objectives may be defined in work instructions or customer requirements.

The process objectives have been developed in consideration that they:

a) be consistent with the quality policy;
b) be measurable;
c) consider applicable requirements;
d) be relevant to conformity of products and services and to enhancement of customer satisfaction;
e) be monitored;
f) be communicated;
g) be updated as appropriate.

Process quality objectives are defined in the minutes of management review per section 9.3 below. The planning of process quality objectives is defined in section 4.4. above.

6.3 Planning of Changes

Changes to the quality management system and its processes are carried out in a planned manner per the document ***QP-028, Change Management Procedure***.

7.0 Support

7.1 Resources

7.1.1 General

Tulmar determines and provides the resources needed:

a) to implement and maintain the management system and continually improve its effectiveness.
b) to enhance customer satisfaction by meeting customer requirements.

Resource allocation is done with consideration of the capability and constraints on existing internal resources, as well as needs related to supplier expectations.

Resources and resource allocation are assessed during management reviews.

7.1.2 People

Senior management ensures that it provides sufficient staffing for the effective operation of the management system, as well its identified processes.

7.1.3 Infrastructure

Tulmar determines, provides, and maintains the infrastructure needed to achieve conformity to product requirements. Infrastructure includes, as applicable:

a) buildings, workspace, and associated facilities;
b) process equipment, hardware, and software;
c) supporting services such as transport;
d) information and communication technology.

Equipment is validated per the document ***QP-017, Validation of Equipment and Processes Procedure*** and maintained per the document ***QP-011, Maintenance of Equipment Procedure***.

7.1.4 Environment for the Operation of Processes

Tulmar provides a clean, safe, and well-lit working environment. The Senior Leadership Team manages the work environment needed to achieve conformity to product requirements. Specific environmental requirements for products are determined during quality planning and are documented in subordinate procedures, work instructions, or job documentation. Where special work environments have been implemented, these shall also be maintained per 6.3 above.

Human factors are considered to the extent that they directly impact on the quality of Products and Services.

Note: Social, psychological and safety aspects of the work environment are managed through activities outside of the scope of the quality management system. Only work environment aspects which can directly affect process efficiency or product and service quality are managed through the quality management system.

7.1.5 Monitoring and Measuring Resources

Where equipment is used for critical measurement activities, such as inspection and testing, these shall be subject to control and either calibration or verification; see the document ***QP-012, Calibration Procedure***.

Note: Calibration and measurement traceability is not employed for all measurement devices. Tulmar determines which devices will be subject to calibration based on its processes, products, and services, or to comply with specifications or requirements. These decisions are also based on the importance of a measurement, and considerations of risk.

7.1.6 Organizational Knowledge

Tulmar determines the knowledge necessary for the operation of its processes and to achieve conformity of products and services. This may include knowledge and information obtained from:

a) internal sources, such as lessons learned, feedback from subject matter experts, and/or intellectual property;
b) external sources such as standards, academia, conferences, and/or information gathered from customers or suppliers.

This knowledge shall be maintained and made available to the extent necessary.

When addressing changing needs and trends, Tulmar considers its current knowledge and determines how to acquire or access the necessary additional knowledge.

7.2 Competence

Staff members performing work affecting product quality are competent based on appropriate education, training, skills, and experience. Where required, competency training and monitoring is conducted in-house, although for more specialist skills, external seminars or courses are used. The effectiveness of training is evaluated and recorded.

The document QP-010, Training Procedure defines these activities in detail.

Note: The quality management system does not include other aspects of Human Resources management, such as payroll, benefits, insurance, labor relations or disciplinary actions.

7.3 Awareness

Training and subsequent communication ensure that staff are aware of:

a) the quality policy;
b) relevant quality objectives;
c) their contribution to the effectiveness of the management system, including the benefits of improved performance;
d) the implications of not conforming with the management system requirements,
e) relevant quality management system documented information and changes thereto;
f) their contribution to product or service conformity;
g) their contribution to product safety;
h) the importance of ethical behavior.

7.4 Communication

Tulmar's Senior Leadership Team ensures internal communication takes place regarding the effectiveness of the management system. Internal communication methods include:

a) use of corrective and preventive action processes to report nonconformities or suggestions for improvement;
b) use of the results of analysis of data;
c) meetings (periodic, scheduled and/or unscheduled) to discuss aspects of the QMS;
d) use of the results of the internal audit process;
e) regular company meetings with all employees;
f) internal emails;
g) memos to employees;
h) Tulmar's "open door" policy which allows any employee access to the Senior Leadership Team for discussions on improving the quality system.
i) Communication Matrix

7.5 Documented Information

The management system documentation includes both documents and records.

Note: The AS9100D standard uses the term "documented information"; Tulmar does not use this term, but instead relies on the terms "document" and "record" to avoid confusion. In this context the terms are defined by Tulmar as provided for in section 3.0 above. Documents and records undergo different controls as defined herein.

Documents required for the management system are controlled in accordance with the ***QP-004, Document Control Procedure***. The purpose of document control is to ensure that staff have access to the latest, approved information and to restrict the use of obsolete information. All documented procedures are established, documented, implemented, and maintained.

The document ***QP-005, Control of Quality Records Procedure*** defines the controls needed for the identification, storage, retrieval, protection, retention time, and disposition of quality records. This procedure also defines the methods for controlling records that are created by and/or retained by suppliers.

Configuration documents are subject to additional controls per section 8.1.2 below.

These controls are applicable to those records which provide evidence of conformance to requirements; this may be evidence of Product or Service requirements, contractual requirements, procedural requirements, or statutory/regulatory compliance. In addition, quality records include any records which provide evidence of the effective operation of the management system.

8.0 Operation

8.1 Operational Planning and Control

Tulmar plans and develops the processes needed for realization of its Products and Services. Planning of Product or Service realization is consistent with the requirements of the other processes of the management system. Such planning considers the information related to the context of the organization (see section 2.0 above), current resources and capabilities, as well as Product or Service requirements.

Such planning is accomplished through:

a) determining the requirements for the Products and Services;
b) establishing criteria for the processes and the acceptance of Products and Services;
c) determining the resources needed to achieve conformity to the Product or Service requirements;
d) implementing control of the processes in accordance with the criteria;
e) determining, maintaining, and retaining documents and records to the extent necessary to have confidence that the processes have been carried out as planned and to demonstrate the conformity of Products and Services to their requirements;
f) determining the processes and controls needed to manage critical items, including production process controls when key characteristics have been identified;
g) engaging representatives of affected organization functions for operational planning and control;
h) determining the process and resources to support the use and maintenance of the Products & Services;
i) determining the products and services to be obtained from external providers;
j) establishing the controls needed to prevent the delivery of nonconforming Products and Services to the customer.

Changes to operational processes are done in accordance with the document ***QP-028, Change Management Procedure***.

Formal program or project management is implemented as mandated by contract requirements.

Process controls include methods to control the temporary or permanent transfer of work, to ensure the continuing conformity of the Products and Services. This will consider how work transfer impacts and risks are managed.

In this context, “work transfer” can mean the temporary or permanent handover of work between Tulmar internal processes, between Tulmar and an external service provider, or between external providers.

For transfers between Tulmar and an external service provider, or between external providers, these are controlled under the Purchasing requirements defined in section 8.4 below.

8.1.1 Operational Risk Management

Operational risk management is conducted to manage the risks related to Product or Service realization requirements; see the document ***QP-003, Risk Management Procedure***. Operational risk is identified and managed in the Sales, Design & Development, Purchasing and Product & Service realization processes. Refer to ***Appendix A – Overall Process Sequence & Interactions***.

8.1.2 Configuration Management

Tulmar plans, implements, and controls configuration management activities as appropriate to its Products and Services to ensure the identification and control of physical and functional attributes throughout the product lifecycle. This is defined in the document ***QP-015, Configuration Management Procedure***. This includes document control for configuration documents and change control for configured items.

8.1.3 Product Safety

Tulmar plans, implements, and controls the processes needed to assure product safety during the entire product life cycle, where this is appropriate relative to Tulmar's Products and Services. These activities may include:

a) hazard identification, including reactive and proactive methods;
b) analysis, assessment, and control of safety risks associated with the identified hazards;
c) assessment of the effectiveness of safety management processes;
d) provision of training on product safety responsibilities to relevant personnel;
e) ensuring persons are aware of their contribution to product safety;
f) communication of product safety information, including safety-critical information, safety events, and changes to safety procedures, as applicable;
g) reporting of safety events to customer, authorities, and type certificate holders in accordance with customer and regulatory requirements;
h) flow down of relevant product safety principles to external providers.

8.1.4 Prevention of Counterfeit Parts

Tulmar implements operational controls to assure the prevention of counterfeit or suspect counterfeit part use and their inclusion in product(s) delivered to the customer. These activities are defined in greater detail in the documents ***QP-007, Purchasing Procedure*** and ***QP-029, Inspection Procedure***.

8.2 Requirements for Products and Services

8.2.1 Customer Communication

Tulmar highlights effective customer communication as an essential element of delivering customer satisfaction. Tulmar has implemented effective communication with customers in relation to:

a) providing information relating to Products and Services;
b) handling enquiries, contracts, or orders, including changes;
c) obtaining customer feedback relating to products and services, including customer complaints;
d) handling or controlling customer property;
e) establishing specific requirements for contingency actions, when relevant.

The Customer Service Team and Sales and Marketing Department are responsible for establishing methods of communication with customers to ensure enquires contracts or order handling, including amendments, customer feedback and complaints, are handled expeditiously and professionally.

8.2.2 Determining the Requirements Related to Products and Services

During the intake of new business Tulmar captures:

a) the requirements for the products and services, including any applicable statutory and regulatory requirements and other requirements deemed necessary by Tulmar;
b) requirements not stated by the customer but necessary for specified or intended use, where known;
c) special requirements (see 8.5.1 below);
d) operational risks (new technologies, capability and capacity, delivery time frames, etc.)

This customer-driven process requires clear, and often repeated, customer interaction to understand the customer's needs. These activities are defined in greater detail in the document ***QP-006, Contract Review Procedure***.

8.2.3 Review of Requirements Related to Products and Services

Once requirements are captured, Tulmar reviews the requirements prior to its commitment to supply the Product or Service. This review ensures that:

a) product requirements are defined;
b) contract or order requirements differing from those previously expressed are resolved;
c) the organization can meet the defined requirements for the products and services it offers;
d) special requirements (see 8.5.1 below) can be met;
e) risks have been identified and considered;

Customer requirements are confirmed before acceptance by the exchange of contracts/purchase orders via appropriate electronic or hard copy formats. These activities are defined in greater detail in the document ***QP-006, Contract Review Procedure***.

8.2.4 Changes to Requirements for Products and Services

Tulmar updates all relevant requirements and documents when the requirements are changed and ensures that all appropriate staff are aware of the documented requirement changes; see the document ***QP-006, Contract Review Procedure***.

8.3 Design and Development of Products and Services

For new designs and for significant design changes, Tulmar ensures the translation of customer needs and requirements into detailed design outputs. These address performance, reliability, maintainability, testability, and safety issues, as well as regulatory and statutory requirements.

This process ensures:

a) Design planning is conducted;
b) Design inputs (requirements) are captured;
c) Design outputs are created under controlled conditions;
d) Design reviews, verification and validation are conducted;
e) Design changes are made in a controlled manner.

The design and development process is carried out under controlled conditions, while all activities are planned and documented. Design and development activities targeted at controlling risk are supported by documented information.

These activities are further defined in the document ***QP-014, Design & Development Procedure***.

8.4 Control of Externally Provided Processes, Products and Services

Tulmar ensures that purchased Products and Services conform to specified purchase requirements.

Tulmar evaluates and selects suppliers based on their ability to supply products and services in accordance with the organization's requirements. Criteria for selection, evaluation and re-evaluation are established.

The type and extent of control applied to suppliers and the purchased product is dependent upon the effect that the outsourced product or service may have on our final product or service. Where appropriate, risk control measures are documented within the purchasing data and clearly communicated to the supplier.

Purchases are made via the release of formal purchase orders and/or contracts which clearly describe what is being purchased. Received products or services are then verified against requirements to ensure satisfaction of requirements.

Suppliers who do not provide conforming products or services may be requested to conduct formal corrective action.

These activities are further defined in the documents ***QP-007, Purchasing Procedure*** and ***QP-029, Inspection Procedure***.

8.5 Production and Service Provision

8.5.1 Control of Production and Service Provision

To control its provision of Products and Services, Tulmar considers, as applicable, the following:

a) the availability of documents or records that define the characteristics of the Products and Services as well as the results to be achieved;
b) the availability and use of suitable monitoring and measuring resources;
c) the implementation of monitoring and measurement activities;
d) the use of suitable infrastructure and environment;
e) the appointment of competent persons, including any required qualifications;
f) the validation and revalidation of special processes;
g) the implementation of actions to prevent human error;
h) the implementation of release, delivery, and post-delivery activities.

The documents ***QP-018, Production Procedure*** and ***QP-029, Inspection Procedure***, define the activities and controls for the manufacture of products. The document ***QP-019, Repair & Overhaul Procedure*** defines the activities and controls for maintenance of customer-owned products. The controls for distribution activities, referred by Tulmar as “Buy and “Sell”, are defined in the documents ***QP-007 Purchasing Procedure*** and ***QP-029, Inspection Procedure***.

Where special requirements, key characteristics and/or critical items are identified or deemed appropriate, the processes will be planned and controlled to manage these aspects. See the document ***Special Requirements, Critical Items & Key Characteristics*** for guidance on this subject.

Where appropriate, special statistical techniques may be used to control or monitor operational processes. In such cases, the techniques selected shall be based on known standards or otherwise justified as statistically valid. This includes sampling plans when sampling is used for inspection, testing or other purposes which are further defined in the document ***QP-029, Inspection Procedure***.

8.5.1.1 Control of Equipment, Tools, and Software Programs

Equipment, tools, and software programs used to automate, control, monitor, or measure production processes are validated prior to final release for production and are maintained.

Special storage requirements, if applicable, are defined for production equipment or tooling including any necessary periodic preservation or condition checks. This is further defined in the document ***QP-017, Validation of Equipment, and Processes Procedure***.

8.5.1.2 Validation and Control of Special Processes

Tulmar has identified adhesive bonding and fabric welding as “special processes” where the results of the process cannot be verified by subsequent monitoring or measurement. The validation and controls for these processes are defined in the documents ***PCS-002, Standard Bonding Instructions***; ***PCS-010, Standard RF Sealing Instructions*** and ***PCS-025, Standard Heat Welding Instructions***.

Any other special processes are sent to external providers and controlled as an outsourced process per the document ***QP-007, Purchasing Procedure***.

8.5.1.3 Production Process Verification

Production processes in use as of June 30, 2021, are approved based on previous experience.

New Production processes are validated prior to use or implementation as defined in the document ***QP-017, Validation of Equipment and Processes Procedure***. This may include running test product through the new process or equipment, or by performing a First Article Inspection on a part produced by the process, tooling, or equipment. First Article Inspection is discussed further in section 8.6.3 below.

8.5.2 Identification and Traceability

Where appropriate, Tulmar identifies its Product or other critical process outputs by suitable means. Such identification includes the status of the Product with respect to monitoring and measurement requirements. Unless otherwise indicated as nonconforming, pending inspection or disposition, or some other similar identifier, all Product shall be considered conforming and suitable for use.

Tulmar maintains the identification of the configuration of the products and services to identify any differences between the actual configuration and the required configuration; see the document ***QP-015, Configuration Management Procedure***.

If unique traceability is required by contract, regulatory, or other established requirement, Tulmar controls and records the unique identification of the Product or Service.

This shall include, as appropriate:

a) product identification to be maintained throughout the product life;
b) the ability to trace all products manufactured from the same batch of raw material, or the same manufacturing batch, to the destination (e.g., delivery, scrap);
c) for an assembly, the ability to trace its components to the assembly and then to the next higher assembly;
d) for a product, a sequential record of its production.

The document ***QP-016, Identification & Traceability Procedure*** defines these methods in detail.

8.5.3 Property Belonging to Customers or External Providers

Tulmar exercises care with customer or supplier property while it is under the organization’s control or being used by the organization. Upon receipt, such property is identified, verified, protected, and safeguarded. If any such property is lost, damaged, or otherwise found to be unsuitable for use, this is reported to the customer or supplier and records maintained. This activity is defined in greater detail in the document ***QP- 020, Control of Third-Party Property Procedure***.

For customer intellectual property, including customer furnished data used for design, production and / or inspection, this is identified by customer and maintained and preserved to prevent accidental loss, damage, or inappropriate use as defined in ***QP-004, Document Control Procedure***.

8.5.4 Preservation

Tulmar preserves conformity of product during internal processing and delivery to the intended destination. This preservation includes cleaning, FOD control, special handling for sensitive products, marking and labeling including safety warnings, shelf-life control and stock rotation, and special handling for hazardous materials. Preservation also applies to the constituent parts of a product.

The document ***QP-009, Storage & Preservation Procedure*** defines the methods for preservation of product and the document ***QP-013, FOD Control Procedure*** defines the methods for preventing, identifying, and controlling foreign objects. The document ***QP-021, Packaging & Delivery Procedure*** defines the method of preparing product for delivery.

8.5.5 Post-Delivery Activities

As applicable, Tulmar conducts the following activities which are considered “post-delivery activities”:

- Maintenance, Repair and Overhaul as defined in ***QP-019, Repair & Overhaul Procedure***.
- Rework as defined in ***QP-027, Returned Material Procedure***.

Post-delivery activities are conducted in compliance with the management system defined herein. In determining the extent of post-delivery activities that are required, Tulmar considers:

a) statutory and regulatory requirements;
b) the potential undesired consequences associated with its of Products and Services;
c) the nature, use and intended lifetime of its of Products and Services;
d) customer requirements;
e) customer feedback;
f) collection and analysis of in-service data (e.g., performance, reliability, lessons learned);
g) control, updating, and provision of technical documentation relating to product use, maintenance, repair, and overhaul;
h) controls required for work undertaken external to the organization (e.g., off-site work);
i) product/customer support (e.g., queries, training, warranties, maintenance, replacement parts, resources, obsolescence).

When problems are detected after delivery, Tulmar takes appropriate action including investigation and reporting; see section 10.2.

8.5.6 Control of Changes

Tulmar reviews and controls both planned and unplanned changes to processes to the extent necessary to ensure continuing conformity with all requirements.

Process change management is defined in the document ***QP-028, Change Management Procedure***.

Documents are changed in accordance with the document ***QP-004, Document Control Procedure***.

8.6 Release of Products and Services

Products and Services undergo inspection and/or testing to ensure they meet all requirements at critical stages throughout the various processes, and then prior to final delivery.

Measurement requirements are documented; this documentation is part of the shop order documentation, and includes:

a) criteria for acceptance and / or rejection;
b) where in the sequence measurement and testing operations are performed;
c) a record of the measurement results, and
d) type of measurement instrument required, and any specific instructions associated with their use. Test records will show actual test results data when required by specification or acceptance test plan.

Where required to demonstrate Product or Service qualification Tulmar will ensure that records provide evidence that the Product or Service meets the defined requirements.

When key characteristics have been identified, they are monitored and controlled as required.

Product is not used until it has been inspected or otherwise verified as conforming to specified requirements, except when released under positive-recall procedures pending completion of all required measurement and monitoring activities.

Evidence of conformity with the acceptance criteria is maintained. Records indicate the person(s) authorizing release of Products and Services.

Each process utilizes different methods for measuring and releasing Products and Services. These methods are defined in the documents ***QP-019, Repair & Overhaul Procedure*** and ***QP-029, Inspection Procedure***.

8.6.1 Receiving Inspection and Testing

Incoming raw materials, processed products or other critical received goods undergo inspection and/or testing at receiving, prior to entry into the production processes. These activities are defined in the document ***QP-029, Inspection Procedure***.

8.6.2 In-Process Inspection and Testing

At defined stages throughout Production, inspections and/or tests are conducted to ensure the Products satisfy the requirements for that process or activity, prior to being released to the next process or activity. This is defined in document ***QP-029, Inspection Procedure*** and/or job documentation specific to each job.

8.6.3 First Article Inspection

First Article Inspections shall be performed at the discretion of Quality and/or when required by customer or contract requirements.

Such First Article Inspections are a complete inspection of a completed part, of all dimensions and criteria, to validate the production processes and equipment. The product used shall be a representative item from the first production run of a new part or assembly to verify that the production processes, production documentation and tooling can produce parts and assemblies that meet requirements. This process shall be repeated when changes occur that invalidate the original results (e.g., engineering changes, manufacturing process changes, tooling changes).

Tulmar uses forms and/or computer software to satisfy first article requirements per AS9102; where the customer dictates a format for First Article reporting, these formats will be used instead.

8.6.4 Final Inspection and Testing

Final acceptance criteria for Products and Services are defined in appropriate subordinate documentation. Reviews, inspections, and tests are conducted at appropriate stages to verify that the product and service requirements have been met. This is done before Products are released or Services are delivered.

Each process utilizes different methods for measuring and releasing Products and Services. These methods are defined in the documents ***QP-019, Repair & Overhaul Procedure*** and ***QP-029, Inspection Procedure***.

8.7 Control of Nonconforming Outputs

Tulmar ensures that Products and Services or other process outputs that do not conform to their requirements are identified and controlled to prevent their unintended use or delivery.

The controls for such nonconformances are defined in the document ***QP-022, Control of Nonconforming Products Procedure***.

9.0 Performance Evaluation

9.1 Monitoring, Measurement, Analysis, and Evaluation

9.1.1 General

Tulmar has determined which aspects of its quality management system must be monitored and measured, as well as the methods to utilize and records to maintain, within this Quality Manual and subordinate documentation.

Monitoring and measurement of the processes, as defined in 4.4 above, ensure that the Senior Leadership Team evaluates the performance and effectiveness of the quality management system itself as defined in the document ***QP-002, Quality Objectives, Measurement and Analysis Procedure***.

9.1.2 Customer Satisfaction

As one of the measurements of the performance of the management system, Tulmar monitors information relating to customer perception as to whether the organization has met customer requirements. The methods for obtaining and using this information are defined in the document ***QP-023, Customer Satisfaction Procedure***. The level of customer satisfaction is monitored using various sources of customer date and include:

- customer complaints;
- product rejections or returns;
- repeat orders for product;
- changing volume of orders for product;
- trends in on-time delivery;
- scorecards from certain customers.

The corrective and preventive action system is used to develop and implement plans for customer satisfaction improvement that address deficiencies identified by these evaluations and to assess the effectiveness of the results.

9.1.3 Analysis and Evaluation

A process is effective if the desired results are measurably achieved. Effectiveness is measured in terms of product quality, process accuracy, delivery schedule performance, cost and budgetary performances, employee function performance against established objectives and levels of customer satisfaction.

Tulmar analyzes and evaluates trends using the following data points:

a) conformity of Products and Services;
b) the degree of customer satisfaction;
c) the performance and effectiveness of the quality management system;
d) if planning has been implemented effectively;

e) the effectiveness of actions taken to address risks and opportunities;
f) the performance of external providers;
g) the need for improvements to the quality management system.

Statistical techniques used may be defined in appropriate documented procedures; in all cases, the methods are based on established standards or are otherwise determined to be statistically valid.

9.2 Internal Audit

Tulmar conducts internal audits at planned intervals to determine whether the management system conforms to contractual and regulatory requirements, to the requirements of AS9100D, and to management system requirements. Audits also seek to ensure that the management system has been effectively implemented and is maintained.

These activities are defined in the document ***QP-024, Internal Audit Procedure***.

9.3 Management Review

Tulmar's Senior Leadership Team reviews the management system, at planned intervals, to ensure its continuing suitability, adequacy, and effectiveness. The review includes assessing opportunities for improvement, and the need for changes to the management system, including the ***Quality Policy*** and quality objectives.

Management review frequency, agenda (inputs), outputs, required members, actions taken, and other review requirements are defined in the document ***QP-025, Management Review Procedure***.

Records from management reviews are maintained.

10.0 Improvement

10.1 General

Tulmar uses the management system to improve its processes, products, and services through the effective application of the corporate policies, objectives, auditing and data analysis, corrective and preventive actions and management reviews. Such improvements aim to address the needs and expectations of customers as well as other interested parties, to the extent possible.

10.2 Nonconformity and Corrective Action

Tulmar takes corrective action to eliminate the cause of nonconformity to prevent recurrence. Likewise, the company takes preventive action to eliminate the causes of potential nonconformities to prevent their occurrence.

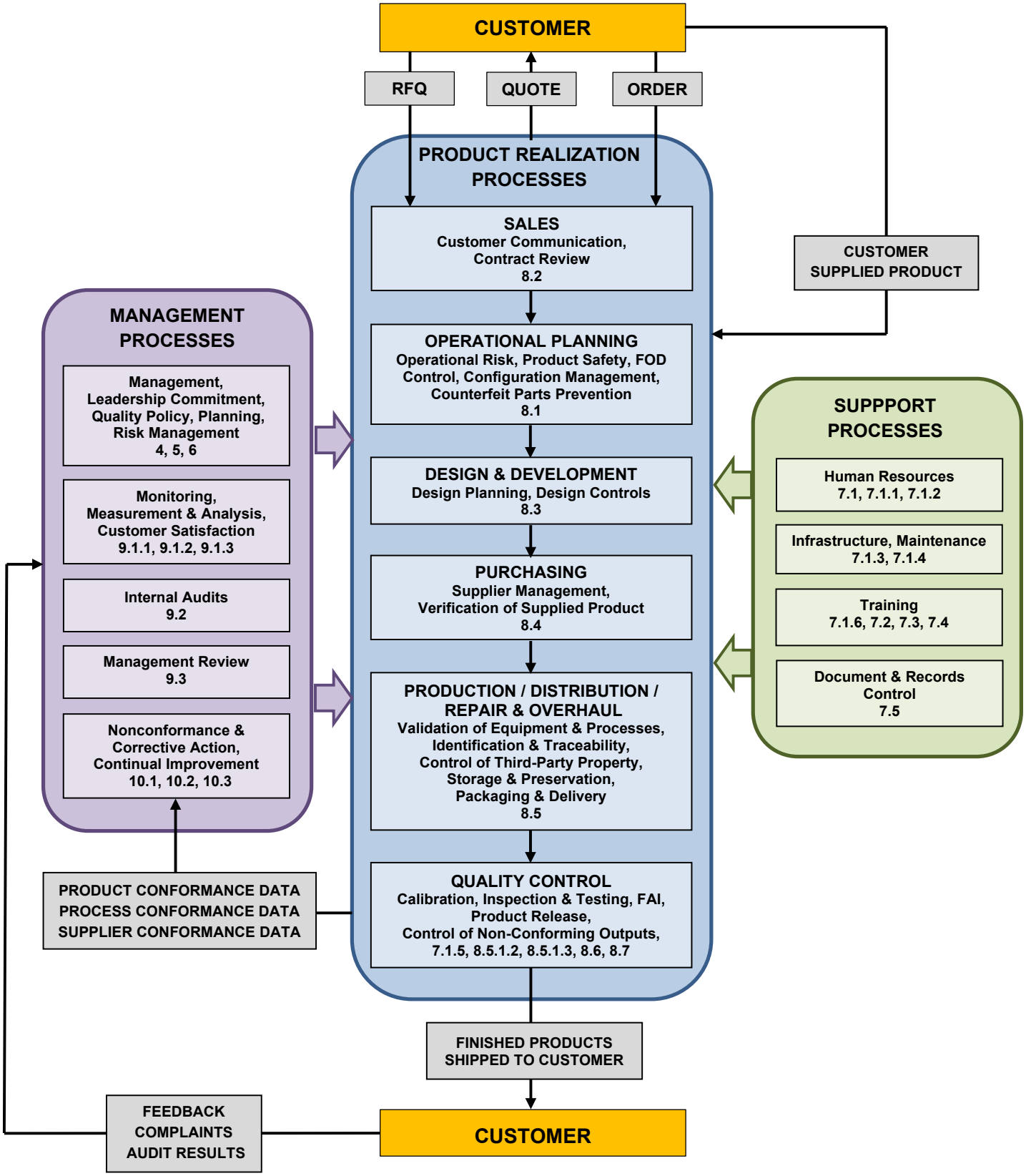
These activities are done through the formal Corrective Action system and are defined in the document ***QP- 026, Improvement Procedure***.

10.3 Continual Improvement

The continual improvement process begins with the establishment of our corporate objectives for improvement, based on objectives contained in our business plan and customer targets and goals. Customer satisfaction, internal audit data, process and product performance data, and the cost of poor quality or risk control are then compared against objectives or KPIs to identify additional opportunities for improvement.

The overall effectiveness of the continual improvement program, including corrective actions taken, as well as the overall progress towards achieving improvement objectives, are assessed through the management review process.

11.0 Appendix A: Overall Process Sequence and Interactions



12.0 Appendix B: List of Quality Procedures

QP-001	Context of the Organization
QP-002	Quality Objectives, Measurement & Analysis
QP-003	Risk Management
QP-004	Document Control
QP-005	Control of Quality Records
QP-006	Contract Review
QP-007	Purchasing
QP-008	Receiving
QP-009	Storage & Preservation
QP-010	Training
QP-011	Maintenance of Equipment
QP-012	Calibration
QP-013	FOD Control
QP-014	Design and Development
QP-015	Configuration Management
QP-016	Identification and Traceability
QP-017	Validation of Equipment & Processes
QP-018	Production
QP-019	Repair & Overhaul
QP-020	Control of Third-Party Property
QP-021	Packaging & Delivery
QP-022	Control of Nonconforming Product
QP-023	Customer Satisfaction
QP-024	Internal Audits
QP-025	Management Review
QP-026	Improvement
QP-027	Returned Materials
QP-028	Change Management
QP-029	Inspection