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**TNT-EDM  
AS 9100 D  
Quality Manual**  
www.tntedm.com

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## **Section 1: Welcome**

TNT-EDM, Inc. has established a Quality Management System (QMS) and manages processes in accordance with AS9100D (Note: Where AS9100 is read, it is to be understood AS9100D). TNT-EDM, Inc. is located at 47689 Anchor Court, Plymouth, MI. 48170.

## **TNT-EDM, Inc. SCOPE**

The Manufacture Including Electric Discharge Machining (EDM), Hard Milling and General Machining of Molds, Dies, Punches, Aerospace Engine and Fuselage Actuator Components & Medical Components



TNT-EDM, Inc. has always applied high quality standards to its processes and operations and continues its dedication in maintaining high levels of quality and integrity in communicating with people inside and outside of its business operation.

We invite you to review our quality system in action. To arrange a visit, contact us at:

TNT-EDM, Inc.

47689 Anchor Court

Plymouth, MI. 48170

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## Section 2: TNT-EDM, Inc. Philosophy and Governing Policies

### COMPANY PHILOSOPHY

At TNT-EDM, our people are our most important resource. The contribution of each employee to the quality of our products and achieving total customer satisfaction is the basis for our continuing growth and success. We will constantly strive to maintain an atmosphere in which our employees can exercise personal initiative, fully utilize individual talents and feel a sense of pride and value.

### QUALITY POLICY

TNT-EDM, Inc. will provide **best in class** products and services to **meet or exceed our customers' cost, quality, reliability, and delivery requirements and their future expectations**. TNT-EDM, Inc. is dedicated to **continuous improvement** in all facets of its business to enhance our customers' and our continued long-term profitable growth.

<i>Policy</i>	<i>Objective</i>	<i>Metrics</i>	<i>Goals</i>
<b>best in class</b>	Reduce C.O.P.Q (Cost of Poor Quality)	Combined cost for scrap and rework per month	< 1% sales monthly
<b>meet or exceed our customers' cost, quality, reliability, and delivery requirements and their future expectations</b>	Customer satisfaction (continual improvement)	Customer Score Cards	>90%
	On-time delivery	Percent on-time shipments	>90%
	Purchasing	Supplier on time delivery	>90%



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## **Section 3: Terms and Definitions**

### **3.1 Scope**

TNT-EDM's quality management system applies to all processes within all functional areas of TNT-EDM's business operation, except those listed in 3.2. The company's scope is defined in Section 1 of this manual.

### **3.2 Not applicable**

Due to the nature of the organization and its product, Clause 8.3, Design and Development, is not applicable since TNT-EDM does not perform design and development activities.

Clause 8.5.5, Post-Delivery Activities section b, c, f, g, and h are not applicable to the scope of TNT-EDM's quality management system; TNT-EDM only provides section a, d, e, and I post-delivery support.

These items that are not applicable do not affect the ability or responsibility of TNT-EDM, Inc. to provide product that meets customer and applicable statutory and regulatory requirements.

### **3.3 Definitions**

Unless otherwise noted, TNT-EDM applies the definition of terms according to ISO 9000 and AS9100.

*Capture* – To identify and determine

*E2 SYSTEM* – E2 SYSTEM Production Management System

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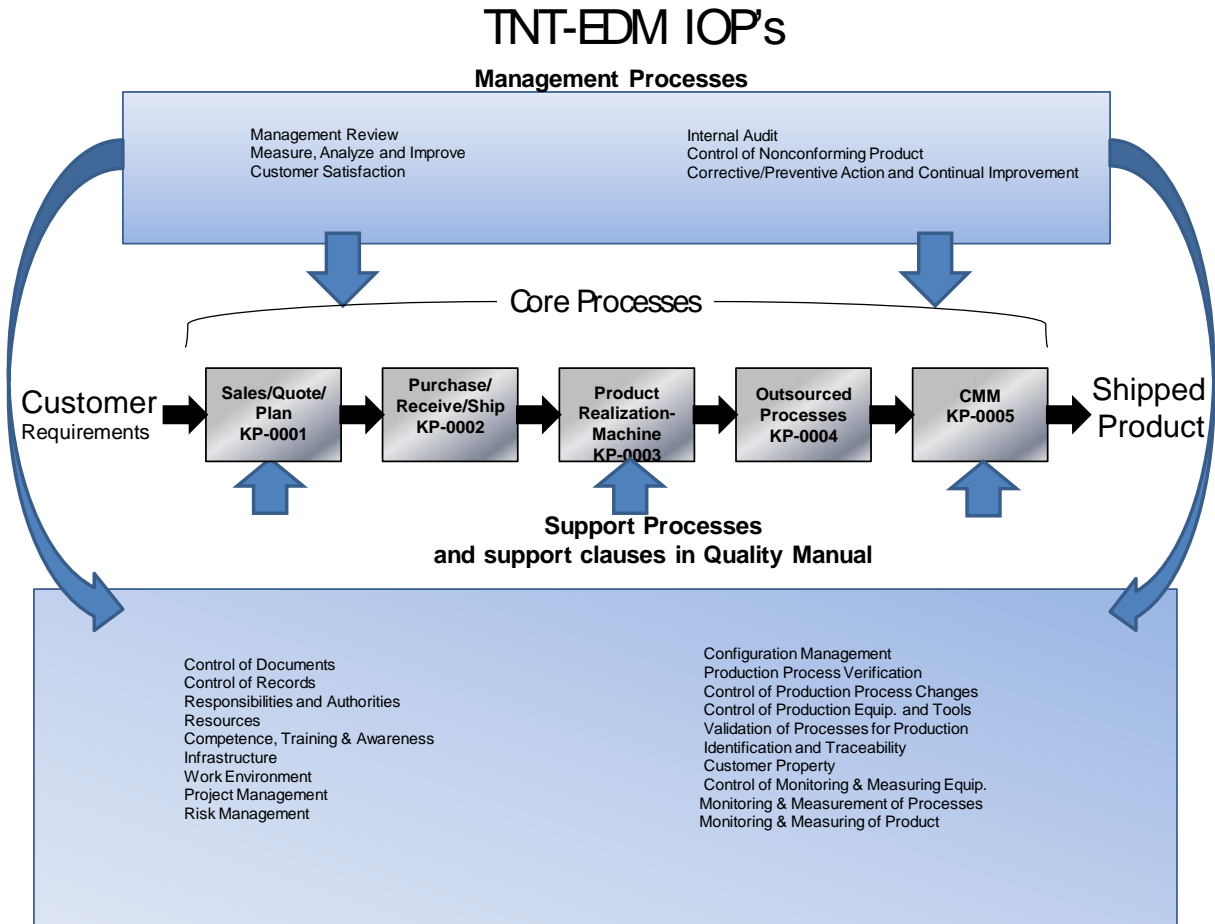
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## Interested Parties

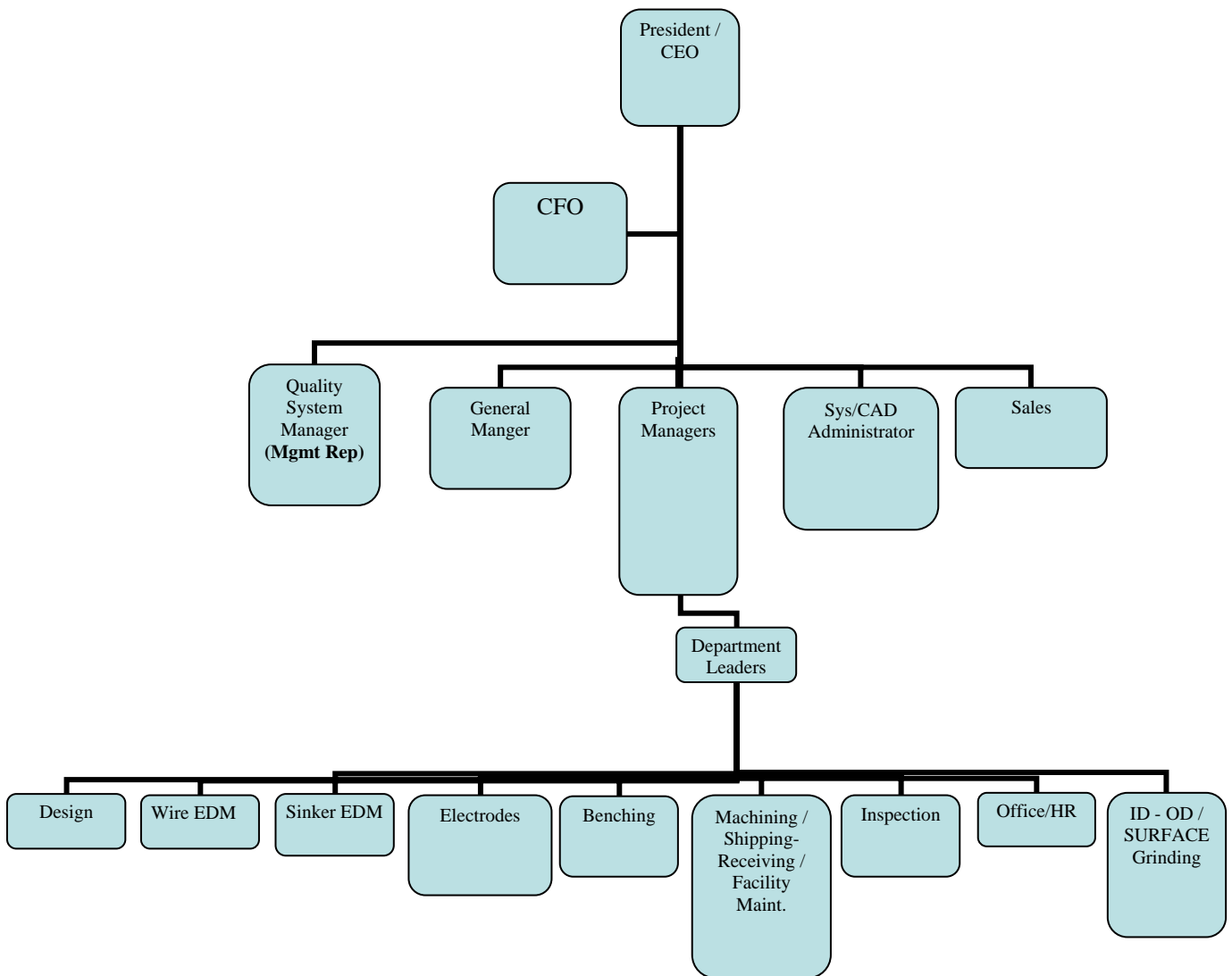
TNT-EDM has determined that the following are interested parties of the Quality Management System:

- Customers
- DTE and Consumers Utilities
- Suppliers
- Management & Employees
- Regulatory or Statutory
- AS9100 Registrar

FIGURE 1. TNT-EDM QUALITY MANAGEMENT SYSTEM



**Organizational Chart**





**Purpose:** To establish the intent of our overall Quality Management System

## **CLAUSE 4 CONTEXT OF THE ORGANIZATION**

### **4.1 Understanding the organization and its context**

We have determined our external and internal issues that are relevant to our purpose and strategic direction and that affect our ability to achieve the intended result(s) of our quality management system. See SWOT analysis TNT-F-0061-A

We monitor and review information about these external and internal issues during our Management Review meetings (see SWOT analysis).

### **4.2 Understanding the needs and expectations of interested parties**

Due to their effect or potential effect on our ability to consistently provide products and services that meet customer and applicable statutory and regulatory requirements, we determine:

- a) the interested parties that are relevant to the quality management system;
- b) the requirements of these interested parties that are relevant to the quality management system.

TNT-EDM monitors and reviews information about these interested parties and their relevant requirements. This review is performed as part of the Management Review processes. A general description of the Interested Parties is listed on page 6 of this Quality Manual.

### **4.3 Determining the scope of the quality management system**

TNT-EDM has determined the boundaries and applicability of the quality management system to establish its scope.

When determining this scope, we considered:

- a) the external and internal issues referred to in 4.1;
- b) the requirements of relevant interested parties referred to in 4.2;
- c) our products and services.

We apply all the requirements of this International Standard as they are applicable within the determined scope of our quality management system (see 3.1).

The scope of our quality management system is available and maintained as documented information (see Section 1 and 3.1). The scope states the types of products/processes and services covered, and provides justification for any requirement of this International Standard that we determine is not applicable to the scope of our quality management system.

Conformity to this International Standard may only be claimed if the requirements determined as not being applicable do not affect our ability or responsibility to ensure the conformity of its products and services and the enhancement of customer satisfaction.

#### **4.4 Quality management system and its processes**

4.4.1 We have established, implemented, maintained and continually improve a quality management system, including the processes needed and their interactions, in accordance with the requirements of this International Standard. *Our Quality Management System also addresses customer and applicable regulatory and statutory quality management system requirements.*

TNT-EDM has determined the processes needed for the quality management system and their application throughout the organization, and has:

- a) determined the inputs required and the outputs expected from these processes;
- b) determined the sequence and interaction of these processes;
- c) determined and apply the criteria and methods (including monitoring, measurements and related performance indicators) needed to ensure the effective operation and control of these processes;
- d) determined the resources needed for these processes and ensure their availability;
- e) assigned the responsibilities and authorities for these processes;
- f) addressed the risks and opportunities as determined in accordance with the requirements of 6.1;
- g) evaluated these processes and implemented any changes needed to ensure that these processes achieve their intended results;
- h) improve the processes and the quality management system.

4.4.2 To the extent necessary, Company:

- a) maintains documented information to support the operation of its processes;
- b) retains documented information to have confidence that the processes are being carried out as planned.

*We have established and maintain documented information (this Quality Manual) which includes:*

- a) a general description of relevant interested parties (p6)*
- b) the scope of the quality management system, including boundaries and applicability (Section 1 & 3.1)*
- c) a description of the processes needed for the quality management system and their application throughout the organization (p9)*



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- d) *the sequence and interaction of these processes (p9)*
- e) *assignment of the responsibilities and authorities for these processes (see org chart)*

## **CLAUSE 5 LEADERSHIP**

### **5.1 Leadership and commitment**

#### 5.1.1 General

Top management demonstrates leadership and commitment with respect to the quality management system by:

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

#### 5.1.2 Customer focus

Top management demonstrates leadership and commitment with respect to customer focus by ensuring that:

- 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 Policy**

#### 5.2.1 Establishing the quality policy

Top management has established, implemented and maintains a quality policy that:

- a) is appropriate to the purpose and context of TNT-EDM and supports its strategic direction;
- b) provides a framework for setting quality objectives;
- c) includes a commitment to satisfy applicable requirements;

- d) includes a commitment to continual improvement of the quality management system.

## 5.2.2 Communicating the quality policy

The quality policy:

- a) is available and is maintained as documented information;
- b) is communicated, understood and applied within the organization;
- c) is available to relevant interested parties, as appropriate.

## 5.3 Organizational roles, responsibilities and authorities

Top management ensures that the responsibilities and authorities for relevant roles are assigned, communicated and understood within the organization.

Top management assigns the responsibility and authority for:

- a) ensuring that the quality management system conforms to the requirements of this 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 (see 10.1), in particular 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.

*Top management has appointed a specific member of the organization's management, identified as the management representative, who has the responsibility and authority for oversight of the above requirements. The Quality Manager has been assigned the role of Management Representative.*

*The management representative has the organizational freedom and unrestricted access to top management to resolve quality management issues.*

## **CLAUSE 6 PLANNING**

### **6.1 Actions to address risks and opportunities**

6.1.1 When planning for the quality management system, we consider the issues referred to in 4.1 and the requirements referred to in 4.2 and determine the risks and opportunities that need to be addressed to:

- a) give assurance that the quality management system can achieve its intended result(s);
- b) enhance desirable effects;
- c) prevent, or reduce, undesired effects;
- d) achieve improvement.

6.1.2 TNT-EDM plans:

- a) actions to address these risks and opportunities;
- b) how to:
  1. integrate and implement the actions into its quality management system processes (see 4.4; ref job Traveler);
  2. Evaluate the effectiveness of these actions.

Actions taken to address risks and opportunities are proportionate to the potential impact on the conformity of products and services.

### **6.2 Quality objectives and planning to achieve them**

6.2.1 TNT-EDM establishes quality objectives at relevant functions, levels and processes needed for the quality management system.

The quality objectives are to:

- a) be consistent with the quality policy;
- b) be measurable;
- c) take into account 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.

The TNT-EDM maintains documented information on the quality objectives (see p3 in this manual).

6.2.2 When planning how to achieve our quality objectives, we determine:

- a) what will be done;
- b) what resources will be required;
- c) who will be responsible;

- d) when it will be completed;
- e) how the results will be evaluated.

### 6.3 Planning of changes

When we determine the need for changes to the quality management system, the changes are carried out in a planned manner (see 4.4).

TNT-EDM considers:

- a) the purpose of the changes and their potential consequences;
- b) the integrity of the quality management system;
- c) the availability of resources;
- d) the allocation or reallocation of responsibilities and authorities.

Management ensures the QMS is maintained when changes to the QMS are planned and implemented. Subsequent major changes that may affect the performance, quality or reliability of the product will be identified, reviewed and approved and the QMS documentation will be updated.

The QMS documentation acts as the overall quality plan for TNT-EDM. As required, specific quality processes may be developed for individual products; these plans include the information given above. In such cases, the appropriate department manager (with support from the Quality Manager) has overall responsibility for the development of quality plans.

## CLAUSE 7 SUPPORT

### 7.1 Resources

#### 7.1.1 General

TNT-EDM determines and provides the resources needed for the establishment, implementation, maintenance and continual improvement of the quality management system.

We consider:

- a) the capabilities of, and constraints on, existing internal resources;
- b) what needs to be obtained from external providers.

#### 7.1.2 People

TNT-EDM determines and provide the persons necessary for the effective implementation of its quality management system and for the operation and control of its processes.

#### 7.1.3 Infrastructure

We determine, provide and maintain the infrastructure necessary for the operation of its processes and to achieve conformity of products and services.

#### 7.1.4 Environment for the operation of processes

TNT-EDM determines, provides and maintains the environment necessary for the operation of its processes and to achieve conformity of products and services.

#### 7.1.5 Monitoring and measuring resources

##### 7.1.5.1 General

We determine and provide the resources needed to ensure valid and reliable results when monitoring or measuring is used to verify the conformity of products and services to requirements.

We ensure that the resources provided:

- a) are suitable for the specific type of monitoring and measurement activities being undertaken;
- b) are maintained to ensure their continuing fitness for their purpose.

TNT-EDM retains appropriate documented information as evidence of fitness for purpose of the monitoring and measurement resources. (see ***TNT-P-0040 Control of Monitoring and Measuring Equipment.***)



#### 7.1.5.2 Measurement traceability

When measurement traceability is a requirement, or is considered by us to be an essential part of providing confidence in the validity of measurement results, measuring equipment will be:

- a) calibrated or verified, or both, at specified intervals, or prior to use, against measurement standards traceable to international or national measurement standards; when no such standards exist, the basis used for calibration or verification shall be retained as documented information;
- b) identified in order to determine their status;
- c) safeguarded from adjustments, damage or deterioration that would invalidate the calibration status and subsequent measurement results.

*We have established, implemented and maintain a process for the recall of monitoring and measurement equipment requiring calibration or verification.*

*We maintain a register of measuring and monitoring equipment. The register includes:*

- a) the equipment type*
- b) unique identification*
- c) location*
- d) the calibration/verification method*
- e) frequency*
- f) acceptance criteria*

*Calibration or verification of monitoring and measuring equipment is carried out under suitable environmental conditions.*

We determine if the validity of previous measurement results has been adversely affected when measuring equipment is found to be unfit for its intended purpose, and take appropriate action as necessary.

#### 7.1.6 Organizational knowledge

TNT-EDM determines the knowledge necessary for the operation of its processes and to achieve conformity of products and services.

This knowledge is maintained and is available to the extent necessary.

When addressing changing needs and trends, we consider our current knowledge and determine how to acquire or access any necessary additional knowledge and required updates.

## 7.2 Competence

Company:

- a) determines the necessary competence of person(s) doing work under its control that affects the performance and effectiveness of the quality management system;
- b) ensures that these persons are competent on the basis of appropriate education, training, or experience;
- c) where applicable, takes action to acquire the necessary competence, and evaluate the effectiveness of the actions taken;
- d) retains appropriate documented information as evidence of competence.

## 7.3 Awareness

We ensure that persons doing work under the organization's control are aware of:

- a) the quality policy;
- b) relevant quality objectives;
- c) their contribution to the effectiveness of the quality management system, including the benefits of improved performance;
- d) the implications of not conforming with the quality 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

TNT-EDM determines the internal and external communications relevant to the quality management system, including:

- a) on what it will communicate;
- b) when to communicate;
- c) with whom to communicate;
- d) how to communicate;
- e) who communicates.

### 7.5.1 General

Our quality management system includes:

- a) documented information required by this International Standard;
- b) documented information determined by us as being necessary for the effectiveness of the quality management system.

### 7.5.2 Creating and updating

When creating and updating documented information, we ensure appropriate:

- a) identification and description (e.g. a title, date, author, or reference number);
- b) format (e.g. language, software version, graphics) and media (e.g. paper, electronic);
- c) review and approval for suitability and adequacy.

### 7.5.3 Control of documented information

7.5.3.1 Documented information required by the quality management system and by this International Standard shall be controlled to ensure:

- a) it is available and suitable for use, where and when it is needed;
- b) it is adequately protected (e.g. from loss of confidentiality, improper use, or loss of integrity).

7.5.3.2 For the control of documented information, TNT-EDM addresses the following activities, as applicable:

- a) distribution, access, retrieval and use;
- b) storage and preservation, including preservation of legibility;
- c) control of changes (e.g. version control);
- d) retention and disposition.
- e) *prevention of the unintended use of obsolete documented information by removal or by application of suitable identification or controls if kept for any purpose.*

Documented information of external origin determined by TNT-EDM to be necessary for the planning and operation of the quality management system is identified as appropriate, and is controlled.

Documented information retained as evidence of conformity is protected from unintended alterations.

*When documented information is managed electronically, data protection processes are defined.*

The controls for documents are defined in the **TNT-P-0035 Control of Documents**. Records are controlled to provide evidence of conformity to requirements. Records that are subject to control are maintained according to the **TNT-P-0036 Control of Records** and TNT-EDM's Purchase Order Terms and Conditions.

## CLAUSE 8 OPERATION

### 8.1 Operational planning and control

TNT-EDM plans, implements and controls the processes (see 4.4) needed to meet the requirements for the provision of products and services, and to implement the actions determined in Clause 6, by:

- a) determining the requirements for the products and services;
- b) establishing criteria for:
  - 1) the processes;
  - 2) the acceptance of products and services;
- c) determining the resources needed to achieve conformity to the product and service requirements;
- d) implementing control of the processes in accordance with the criteria;
- e) determining, maintaining and retaining documented information to the extent necessary:
  - 1) to have confidence that the processes have been carried out as planned;
  - 2) 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 services to be obtained from external providers;*
- i) *Establishing the controls needed to prevent the delivery of nonconforming products and services to the customer.*

*As appropriate to TNT-EDM, customer requirements and products and services, we plan and manage product and service provision in a structured and controlled manner including scheduled events performed in a planned sequence to meet requirements at acceptable risk, within resource and schedule constraints.*

The output of the planning is the E2 SYSTEM traveler, related drawings, inspection packages, operator check sheets, and specifications that show dimensions, characteristics, tolerances, and any key characteristic identified by TNT-EDM or the customer. Likewise, these instructions define any processes, documents or resource requirements specific to the product. Inspection, testing and other monitoring steps will also be defined in the E2 SYSTEM traveler.

TNT-EDM controls planned changes and reviews the consequences of unintended changes, taking action to mitigate any adverse effects, as necessary.

We ensure that outsourced processes are controlled (see 8.4).

*We establish, implement and maintain a process to plan and control the temporary or permanent transfer of work, to ensure the continuing conformity of the work to requirements. The process ensures that work transfer impacts and risks are managed.*

### *8.1.1 Operational Risk Management*

*We plan, implement and control a process for managing operational risks to the achievement of applicable requirements, which includes as appropriate to the organization and the products and services:*

- a) assignment of responsibilities for operational risk management*
- b) definition of risk assessment criteria*
- c) identification, assessment, and communication of risks throughout operations;*
- d) identification, implementation, and management of actions to mitigate risks that exceed the defined risk acceptance criteria;*
- e) acceptance of risks remaining after implementation of mitigating actions*

Prior to acceptance of contract or purchase order, relevant risk criteria are assessed to identify risk and determine feasibility. Criteria may include but are not limited to:

- Engineering data (e.g., drawings, models, specifications, etc.) are made available,
- Customer supplied quality requirements and/or vendor manual,
- Configuration plan,
- Quantity and delivery schedule,
- Requirements for customer approved suppliers,
- Lead time and cost for raw material and/or hardware items,
- Lead time and cost for outside processing (e.g., heat treat, plating, etc.),
- Cost of any non-recurring charges, if any,
- Labor hours and skill,
- Equipment (e.g., tooling, fixtures, and resources),
- Inspection and test plans,
- Any special requirements and expectations not stated in request.

If any of the above criteria can not be resolved, or causes unease to trained personnel, then the order is considered “high risk”.

On “high risk” orders:

- Top management investigates, confirms, and documents any risk associated with the order.
- Results of this assessment are logged on ***TNT-F-0058 Internal Feasibility Review Form.***
- If the decision to accept risk is made, the appropriate personnel will be notified and the mitigation process will continue.

### 8.1.2 Configuration Management

*We plan, implement and control a process for configuration management as appropriate to TNT-EDM, Inc. and its products and services in order to ensure the identification and control of physical and functional attributes throughout the product life cycle. This process includes:*

- a) control product identity and traceability to requirements, including the implementation of identified changes*
- b) ensure that the documented information (e.g requirements, design, verification, validation and acceptance documentation) is consistent with the actual attributes of the products and services.*

Part configuration is provided in the customer's engineering specifications. Configuration is identified on the E2 SYSTEM traveler and subsequent shipping documents. When the product requirements change, the manufacturing plan is revised and appropriate personnel are informed of the change. Configuration is controlled through verification during manufacturing. Evidence of verification is recorded on E2 SYSTEM travelers and inspection records.

### 8.1.3 Product Safety

*TNT-EDM plans, implements and controls the processes needed to assure product safety during the entire life cycle, as appropriate to TNT-EDM and the product.*

### 8.1.4 Prevention of Counterfeit Parts

*TNT-EDM plans, implements and controls a process appropriate to the product, for the prevention of counterfeit or suspect part use and their inclusion in product(s) delivered to the customer.*

## 8.2 Requirements for products and services

### 8.2.1 Customer communication

Communication with customers includes:

- 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.

### 8.2.2 Determining the requirements for products and services

When determining the requirements for the products and services to be offered to customers, we ensure that:

- a) the requirements for the products and services are defined, including:
  - 1) any applicable statutory and regulatory requirements;
  - 2) those considered necessary by the organization;
- b) We can meet the claims for the products and services it offers.
- c) *special requirements of the products and services are determined;*
- d) *operational risks (e.g. new technology, ability and capability to provide, short delivery time frame) have been identified.*

### 8.2.3 Review of the requirements for products and services

8.2.3.1 TNT-EDM ensures that it has the ability to meet the requirements for products and services to be offered to customers. We conduct a review before committing to supply products and services to a customer, to include:

- a) requirements specified by the customer, including the requirements for delivery and post-delivery activities;
- b) requirements not stated by the customer, but necessary for the specified or intended use, when known;
- c) requirements specified by the organization;
- d) statutory and regulatory requirements applicable to the products and services;
- e) contract or order requirements differing from those previously expressed.

*This review is coordinated with applicable functions of TNT-EDM.*

*If upon review we determine that some customer requirements cannot be met or can only partially be met, TNT-EDM will negotiate a mutually acceptable requirement with the customer.*

TNT-EDM ensures that contract or order requirements differing from those previously defined are resolved.

We confirm the customer's requirements before acceptance, when the customer does not provide a documented statement of their requirements.

8.2.3.2 TNT-EDM retains documented information, as applicable:

- a) on the results of the review;
- b) on any new requirements for the products and services.

Order entry into E2 SYSTEM is a record of review. Records of actions arising from the review shall become part of the work package.

8.2.4 Changes to requirements for products and services

We ensure that relevant documented information is amended, and that relevant persons are made aware of the changed requirements, when the requirements for products and services are changed.

### **8.3 Design and development of products and services**

Design and development is not performed by TNT-EDM and is therefore not applicable per our quality scope.

### **8.4 Control of externally provided processes, products and services**

8.4.1 General

TNT-EDM ensures that externally provided processes, products and services conform to requirements.

*TNT-EDM is responsible for the conformity of all externally provided processes, products and services, including from sources defined by the customer. However, TNT-EDM does accept responsibility for the conformity of Products or Material (e.g., castings) provided by the customer.*

*We ensure that, when required, that customer-designated or approved external providers, including process sources (e.g special processes) are used.*

*We identify and manage the risks associated with the external provision of processes, products, and services, as well as the selection and use of external providers.*

*We require that external providers apply appropriate controls to their direct and sub-tier external providers, to ensure that requirements are met.*



TNT-EDM determines the controls to be applied to externally provided processes, products and services when:

- a) products and services from external providers are intended for incorporation into our own products and services;
- b) products and services are provided directly to the customer(s) by external providers on behalf of us;
- c) a process, or part of a process, is provided by an external provider as a result of a decision by us.

We determine and apply criteria for the evaluation, selection, monitoring of performance, and re-evaluation of external providers, based on their ability to provide processes or products and services in accordance with requirements. TNT-EDM retains documented information of these activities and any necessary actions arising from the evaluations. Supplier selection and Evaluation is defined in ***TNT-P-0028 Purchasing Process Supplier Evaluation***.

#### 8.4.1.1 TNT-EDM has:

- a) *defined the process, responsibilities, and authority for the approval status decision, changes of the approval status, and conditions for a controlled use of external providers depending on their approval status;*
- b) *maintained a register of our external providers that includes approval status, (e.g. approved, conditional, disapproved) and the scope of the approval (e.g product type, process family);*
- c) *periodically review external provider performance including process, product and service conformity, and on time delivery performance;*
- d) *define the necessary actions to take when dealing with external providers that do not meet requirements;*
- e) *define the requirements for controlling documented information created and/or retained by external providers.*

#### 8.4.2 Type and extent of control

TNT-EDM ensures that externally provided processes, products and services do not adversely affect our ability to consistently deliver conforming products and services to its customers.

#### TNT-EDM:

- a) ensures that externally provided processes remain within the control of its quality management system;
- b) defines both the controls that it intends to apply to an external provider and those it intends to apply to the resulting output;
- c) takes into consideration:

- 1) the potential impact of the externally provided processes, products and services on the organization's ability to consistently meet customer and applicable statutory and regulatory requirements;
- 2) the effectiveness of the controls applied by the external provider;
- 3) *the results of the periodic review of external provider performance;*
- d) determines the verification, or other activities, necessary to ensure that the externally provided processes, products and services meet requirements.

*Verification activities of externally provided processes, products, and services shall be performed according to the risks identified by TNT-EDM. These include inspection or periodic testing, as applicable, when there is a high risk of non-conformities including counterfeit parts.*

*When externally provided product is released for production use, pending completion of all required verification activities, it shall be identified and recorded to allow recall and replacement if it is subsequently found that the product does not meet requirements.*

*When TNT-EDM delegates verification activities to the external provider, the scope and requirements for delegation will be defined and a register of delegations is maintained. We periodically monitor the external provider's delegated verification activities.*

Purchase orders include statements in our "terms & conditions" section concerning the following items, when and where we require these items:

- a. Requirements for approval of product, procedures, processes and equipment,
- b. Requirements for qualification of personnel,
- c. Quality management system requirements,
- d. Drawing and/or specifications (or other technical data) and applicable revision,
- e. Requirements for design, test, examination, inspection, and related instructions for acceptance,
- f. Requirements for test specimens, design approval, inspection/verification, investigation or auditing,
- g. Requirements for supplier notification to TNT-EDM of nonconforming product, requirements for the supplier to notify TNT-EDM of changes in product and/or process definition and, where required, obtain organizational approval for nonconforming product disposition, requirements for the supplier to flow down applicable requirements,
- h. Records retention requirements,
- i. Right of access by the organization, their customer, and regulatory authorities to all facilities involved in the order and to all applicable records, and

When any of these items are required by TNT-EDM, the required items is clearly stated on the first page of the Purchase Order. TNT-EDM ensures adequacy of specified purchase requirements before communicating them to the supplier.

*When external provider test reports are utilized to verify externally provided products, TNT-EDM will implement a process to evaluate the data in the test reports to confirm that the product meets requirements. When a customer or organization has identified raw material as a significant operational risk (e.g. critical items), we will implement a process to validate the accuracy of test reports. When applicable, TNT-EDM Quality will review results.*

#### 8.4.3 Information for external providers

TNT-EDM ensures the adequacy of requirements prior to their communication to the external provider.

We communicate to external providers its requirements for:

- a) the processes, products and services to be provided, *including the identification of relevant technical data (e.g. specifications, drawings, process requirements, work instructions);*
- b) the approval of:
  - 1) products and services;
  - 2) methods, processes and equipment;
  - 3) the release of products and services;
- c) competence, including any required qualification of persons;
- d) the external providers' interactions with the organization;
- e) control and monitoring of the external providers' performance to be applied by the organization;
- f) verification or validation activities that the organization, or its customer, intends to perform at the external providers' premises.
- g) *design and development control*
- h) *Special requirements, critical items, or key characteristics;*
- i) *Test, inspection, and verification (including production process verification);*
- j) *The use of statistical techniques for product acceptance and related instructions for acceptance by the organization*
- k) *The need to:*
  - *Implement a quality management system;*
  - *Use customer-designated or approved external providers, including process sources (e.g. special processes);*
  - *Notify the organization of non-conforming processes, products, or services and obtain approval for their disposition;*

- *Prevent the use of counterfeit parts;*
- *Notify the organization of changes to process, products, or services, including changes to their external providers or location of manufacture, and obtain the organization's approval;*
- *Flow down to external providers applicable requirements including customer requirements*
- *Provide test specimens for design approval, inspection/verification, investigation, or auditing;*
- *Retain documented information, including retention periods and disposition requirements;*
- l) *The right of access by the organization, their customer, and regulatory authorities to the applicable areas of facilities and to applicable documented information, at any level of the supply chain*
- m) *Ensuring personnel are aware of:*
  - *Their contribution to product or service conformity;*
  - *Their contribution to product safety*
  - *The importance of ethical behavior*

## **8.5 Production and service provision**

### **8.5.1 Control of production and service provision**

TNT-EDM implements production and service provision under controlled conditions.

Controlled conditions include, as applicable:

- a) the availability of documented information that defines:
  - 1) the characteristics of the products to be produced, the services to be provided, or the activities to be performed;
  - 2) the results to be achieved;
- b) the availability and use of suitable monitoring and measuring resources;
- c) the implementation of monitoring and measurement activities at appropriate stages to verify that criteria for control of processes or outputs, and acceptance criteria for products and services, have been met;
  - 1. *ensuring that documented information for monitoring and measurement activity for product acceptance includes:*
    - *criteria for acceptance and rejection*
    - *where in the sequence verification operations are to be performed;*
    - *measurement results to be retained (at a minimum an indication of acceptance or rejection);*
    - *any specific monitoring and measurement equipment required and instructions associated with their use;*
  - 2. *ensuring that when sampling is used as a means of product acceptance, the sampling plan is justified on the basis of recognized statistical*

*principles and appropriate for use (i.e matching the sampling plan to the criticality of the product and to the process capability).*

- d) the use of suitable infrastructure and environment for the operation of processes;
- e) the appointment of competent persons, including any required qualification;
- f) the validation, and periodic revalidation, of the ability to achieve planned results of the processes for production and service provision, where the resulting output cannot be verified by subsequent monitoring or measurement;
- g) the implementation of actions to prevent human error;
- h) the implementation of release, delivery and post-delivery activities.
- i) *The establishment of criteria for workmanship (e.g. written standards, representative samples, illustrations);*
- j) *The accountability for all products during production (e.g. parts quantities, split orders, non-conforming product);*
- k) *The control and monitoring of identified critical items, including key characteristics, in accordance with established processes;*
- l) *The determination of methods to ensure variable data (e.g. tooling, on-machine probing, inspection equipment);*
- m) *The identification of in-process inspection/verification points when adequate verification of conformity cannot be performed at later stages;*
- n) *The availability of evidence that all production and inspection/verification operations have been completed as planned, or as otherwise documented and authorized;*
- o) *The provision for the prevention, detection, and removal of foreign objects;*
- p) *The control and monitoring of utilities and supplies (water, compressed air, electricity, chemical products) to the extent they affect conformity to product requirements;*
- q) *The identification and recording of products released for subsequent production use pending completion of all required measuring and monitoring activities. To allow recall and replacement if it is later found that the product does not meet requirements.*

#### 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 shall be validated prior to final release for production and shall be maintained.*

CEO, Program Manager, Production Manager, and Quality Manager have the authority to approve changes to production processes.

To ensure product conformity, TNT-EDM shall validate production processes, equipment, tools, setup and software programs prior to production or after changes have been made through first piece inspection at each operation.

Software programs, equipment, and process changes shall be documented on the E2 SYSTEM traveler. Permanent revisions to the E2 SYSTEM Traveler shall be made in E2 SYSTEM and the specific changes documented in the comments section, so revisions can be tracked. Temporary revisions may be hand written on the E2 SYSTEM Traveler and must be initialed and dated by someone with approval authority.

Production equipment shall be maintained in accordance with established preventive maintenance plans (***TNT-WI-0009 Preventive Maintenance Process***) and shall be logged.

*Storage requirements are to be defined for production equipment or tooling in storage including any necessary periodic preservation or condition checks.*

#### *8.5.1.2 Validation and Control of Special Processes*

*For processes where the resulting output cannot be verified by subsequent monitoring or measurement, TNT-EDM will establish arrangements for these processes including, as applicable:*

- a. Definition of criteria for the review and approval of processes;*
- b. Determination of conditions to maintain approval;*
- c. Approval of facilities and equipment;*
- d. Qualification of persons;*
- e. Use of specific methods and procedures for implementation and monitoring the processes;*
- f. Requirements for documented information to be retained.*

#### *8.5.1.3 Production Process Verification*

*TNT-EDM implements production process verification activities to ensure the production process is able to produce products that meet requirements. (see 8.5.1.1 E2 System references.)*

*We use a representative item from the first production run of a new part of assembly to verify that the production process, production documentation, and tooling are able to produce parts and assemblies that meet requirements. This activity will be repeated*

*when changes occur that invalidate the original results (e.g. engineering changes, production process changes, tooling changes).*

*We retain documented information on the results of the production process verification.*

#### 8.5.2 Identification and traceability

TNT-EDM uses suitable means to identify outputs when it is necessary to ensure the conformity of products and services.

*We also maintain the identification of the configuration of the products and services in order to identify any differences between the actual configuration and the required configuration.*

We identify the status of outputs with respect to monitoring and measurement requirements throughout production and service provision (refer to E2 Traveler)

*When acceptance authority media are used (e.g. stamps, electronic signatures, passwords), the organization shall establish controls for the media.*

We have controls for the unique identification of the outputs when traceability is a requirement and retain the documented information necessary to enable traceability.

#### 8.5.3 Property belonging to customers or external providers

TNT-EDM exercises care with property belonging to customers or external providers while it is under our control or being used by us.

We identify, verify, protect and safeguard customers' or external providers' property provided for use or incorporation into the products and services.

When the property of a customer or external provider is lost, damaged or otherwise found to be unsuitable for use, we report this to the customer or external provider and retain documented information on what has occurred. (See **TNT-WI-0024 Processing Customer Property**)

#### 8.5.4 Preservation

TNT-EDM preserves the outputs during production and service provision, to the extent necessary to ensure conformity to requirements.

*Preservation of outputs will also include, when applicable in accordance with specifications and applicable statutory and regulatory requirements, provisions for:*

- a. *Cleaning;*

- b. *Prevention, detection, and removal of foreign objects;*
- c. *Special handling and storage for sensitive products;*
- d. *Marking and labeling, including safety warnings and cautions;*
- e. *Shelf life control and stock rotation*
- f. *Special handling and storage for hazardous materials.*

#### 8.5.5 Post-delivery activities

We meet requirements for post-delivery activities associated with the products and services.

In determining the extent of post-delivery activities that are required, we consider:

- a) statutory and regulatory requirements;
- b) the potential undesired consequences associated with its products and services;
- c) the nature, use and intended lifetime of its 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) product/customer support (e.g. queries, training, warranties, maintenance, replacement parts, resources, obsolescence).*

*When problems are detected after delivery, we take appropriate action, including investigation and reporting.*

#### 8.5.6 Control of changes

TNT-EDM reviews and controls changes for production or service provision, to the extent necessary to ensure continuing conformity with requirements.

*People authorized to approve production or service provision changes are identified*

We retain documented information describing the results of the review of changes, the person(s) authorizing the change, and any necessary actions arising from the review.

### **8.6 Release of products and services**

TNT-EDM implements planned arrangements, at appropriate stages, to verify that the product and service requirements have been met.

The release of products and services to the customer will not proceed until the planned arrangements have been satisfactorily completed, unless otherwise approved by a



relevant authority and, as applicable, by the customer. (see E2 Travelers and inspection records.)

We retain documented information on the release of products and services. The documented information includes (E2 Travelers):

- a) evidence of conformity with the acceptance criteria;
- b) traceability to the person(s) authorizing the release.

*When required to demonstrate product qualification, we ensure retained documented information provides evidence that the products and services meet the defined requirements.*

*We also ensure that all documented information required to accompany the products and services*

## **8.7 Control of nonconforming outputs**

8.7.1 TNT-EDM ensures that outputs that do not conform to their requirements are identified and controlled to prevent their unintended use or delivery.

We take appropriate action based on the nature of the nonconformity and its effect on the conformity of products and services. This also applies to nonconforming products and services detected after delivery of products, during or after the provision of services.

*Our process for nonconformity control is maintained as documented information, including provisions for:*

- defining the responsibility and authority for the review and disposition of nonconforming outputs and the process for approving persons making these decisions;*
- taking actions necessary to contain the effect of the nonconformity on other processes, products, or services;*
- timely reporting of nonconformities affecting delivered products and services to the customer and to relevant interested parties;*
- defining corrective actions for nonconforming products and services detected after delivery, as appropriate to their impacts.*

We deal with nonconforming outputs in one or more of the following ways:

- a) correction;

- b) segregation, containment, return or suspension of provision of products and services;
- c) informing the customer;
- d) obtaining authorization for acceptance under concession *by a relevant authority and, when applicable by the customer.*

*Dispositions of use-as-is or repair for the acceptance of nonconforming products will only be implemented:*

- *after approval by an authorized representative of TNT-EDM responsible for design or by persons having delegated authority from the design organization;*
- *after authorization by the customer, if the nonconformity results in a departure from the contract requirements.*

*Product dispositioned for scrap is conspicuously and permanently marked, or positively controlled, until physically rendered unusable.*

*Counterfeit, or suspect counterfeit, parts will be controlled to prevent reentry into the supply chain.*

Conformity to the requirements is verified when nonconforming outputs are corrected.

8.7.2 TNT-EDM retains documented information that:

- a) describes the nonconformity;
- b) describes the actions taken;
- c) describes any concessions obtained;
- d) identifies the authority deciding the action in respect of the nonconformity.

Nonconforming parts are identified (and segregated) in accordance with ***TNT-P-0029 Control of Nonconforming Product.***

## **CLAUSE 9 PERFORMANCE EVALUATION**

### **9.1 Monitoring, measurement, analysis and evaluation**

#### 9.1.1 General

TNT-EDM determines:

- a) what needs to be monitored and measured;
- b) the methods for monitoring, measurement, analysis and evaluation needed to ensure valid results;
- c) when the monitoring and measuring is performed;
- d) when the results from monitoring and measurement are analyzed and evaluated.

TNT-EDM evaluates the performance and the effectiveness of the quality management system.

We retain appropriate documented information as evidence of the results.

#### 9.1.2 Customer satisfaction

We monitor customers' perceptions of the degree to which their needs and expectations have been fulfilled. We determine the methods for obtaining, monitoring and reviewing this information.

*Information to be monitored and used for the evaluation of customer satisfaction includes, but is not limited to, product and service conformity, on-time delivery performance, customer complaints, and corrective action requires. TNT-EDM has developed and implemented plans for customer satisfaction improvement that addresses deficiencies identified by these evaluations, and assesses the effectiveness of the results.*

#### 9.1.3 Analysis and evaluation

TNT-EDM analyzes and evaluates appropriate data and information arising from monitoring and measurement.

The results of analysis are used to evaluate:

- 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.

## 9.2 Internal audit

9.2.1 TNT-EDM conducts internal audits at planned intervals to provide information on whether the quality management system:

- a) conforms to:
  - 1) our own requirements for its quality management system;
  - 2) the requirements of this International Standard;
- b) is effectively implemented and maintained.

9.2.2 We:

- a) plan, establish, implement and maintain an audit program(s) including the frequency, methods, responsibilities, planning requirements and reporting, which take into consideration the importance of the processes concerned, changes affecting the organization, and the results of previous audits;
- b) define the audit criteria and scope for each audit;
- c) select auditors and conduct audits to ensure objectivity and the impartiality of the audit process;
- d) ensure that the results of the audits are reported to relevant management;
- e) take appropriate correction and corrective actions without undue delay;
- f) retain documented information as evidence of the implementation of the audit program and the audit results.

Internal audits are performed in accordance with ***TNT-P-0037 Internal Audits***.

## 9.3 Management review

9.3.1 General

Top management reviews Company's quality management system, at planned intervals, to ensure its continuing suitability, adequacy, effectiveness and alignment with our strategic direction.

9.3.2 Management review inputs

The management review is planned and carried out taking into consideration:

- a) the status of actions from previous management reviews;
- b) changes in external and internal issues that are relevant to the quality management system;
- c) information on the performance and effectiveness of the quality management system, including trends in:
  - 1) customer satisfaction and feedback from relevant interested parties;
  - 2) the extent to which quality objectives have been met;
  - 3) process performance and conformity of products and services;
  - 4) nonconformities and corrective actions;

- 5) monitoring and measurement results;
- 6) audit results;
- 7) the performance of external providers;
- 8) *on-time delivery performance*;
- d) the adequacy of resources;
- e) the effectiveness of actions taken to address risks and opportunities (see 6.1);
- f) opportunities for improvement.

### 9.3.3 Management review outputs

The outputs of the management review include decisions and actions related to:

- a) opportunities for improvement;
- b) any need for changes to the quality management system;
- c) resource needs.
- d) *risks identified*.

TNT-EDM retains documented information as evidence of the results of management reviews. Records (management review meeting minutes) are maintained using ***TNT-F-0060 and 0061 BOS Meeting Agenda and Minutes***.

## CLAUSE 10 IMPROVEMENT

### 10.1 General

TNT-EDM determines and selects opportunities for improvement and implement any necessary actions to meet customer requirements and enhance customer satisfaction.

These include:

- a) improving products and services to meet requirements as well as to address future needs and expectations;
- b) correcting, preventing or reducing undesired effects;
- c) improving the performance and effectiveness of the quality management system.

### 10.2 Nonconformity and corrective action

10.2.1 When nonconformity occurs, including any arising from complaints, we:

- a) react to the nonconformity and, as applicable:
  - 1) take action to control and correct it;
  - 2) deal with the consequences;
- b) evaluate the need for action to eliminate the cause(s) of the nonconformity, in order that it does not recur or occur elsewhere, by:
  - 1) reviewing and analyzing the nonconformity;
  - 2) determining the causes of the nonconformity;
  - 3) determining if similar nonconformities exist, or could potentially occur;
- c) implement any action needed;
- d) review the effectiveness of any corrective action taken;
- e) update risks and opportunities determined during planning, if necessary;
- f) make changes to the quality management system, if necessary.
- g) *flow down corrective action requirement to an external provider when it is determined that the external provider is responsible for the nonconformity.*
- h) *Take specific actions when timely and effective corrective actions are not achieved.*

Corrective actions will be appropriate to the effects of the nonconformities encountered.

*TNT-EDM maintains documented information that defines the nonconformity and corrective action management processes.*

10.2.2 TNT-EDM retains documented information as evidence of:

- a) the nature of the nonconformities and any subsequent actions taken;
- b) the results of any corrective action.



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The controls for controlling nonconforming product are defined in ***TNT-P-0029 Control of Nonconforming Product*** and ***TNT-P-0025 Corrective and Preventive Action Process***.

### 10.3 Continual improvement

We continually improve the suitability, adequacy and effectiveness of the quality management system.

We consider the results of analysis and evaluation, and the outputs from management review, to determine if there are needs or opportunities to be addressed as part of continual improvement.

*We monitor the implementation of improvement activities and evaluate the effectiveness of the results.*

<b>Author:</b> Troy Lockhart	<b>Approval:</b> Troy Lockhart	<b>Date:</b> 2-23-18
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## Revision History

Revision	Description of change	Page changed	Section	Rev. date	Changed by	Approved
19	Initial issue; rewritten to AS9100D	All	-	02/23/18	T.LOCKHART	T.LOCKHART