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FUZE Conference

**Best Practices in Risk Mitigation
for Munitions Manufacturers**

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The Importance of Continuous Improvement

- ▶ Realize efficiencies throughout the manufacturing process
- ▶ Automate processes to eliminate non-value added tasks
- ▶ Ensure products meet specifications prior to delivery
- ▶ Improve collaborative workflow
- ▶ Reduce risk and ensure safety

The Benefits of an Integrated QMS

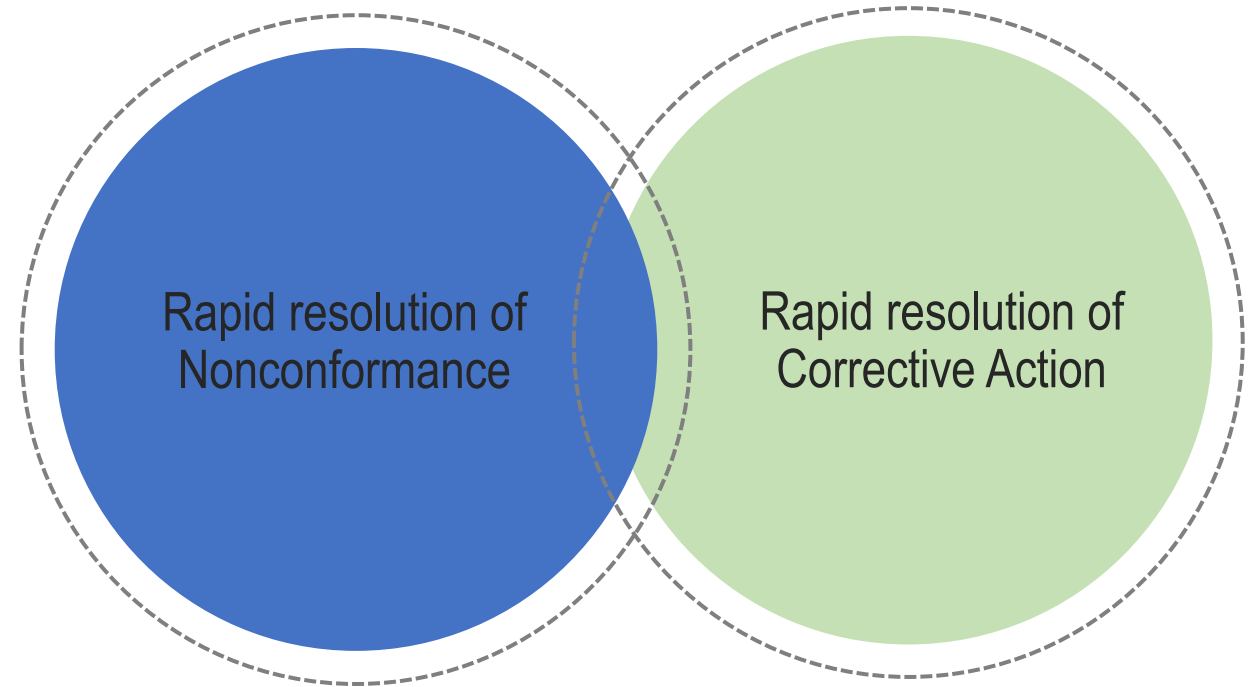
- ▶ Real-time Access to Quality and Manufacturing Data
- ▶ Control Over User Access
- ▶ Gain Visibility into Costs
- ▶ Effectively Collaborate with Suppliers
- ▶ Ensure Operational Excellence throughout Product Lifecycle
- ▶ Create a controlled environment where performance is repeatable and reliable.

Automate Quality Tasks to Enforce Timeliness and Improve Record Keeping



- ▶ Choose a solution that can set automatic reminders
 - Document processing
 - Periodic Reviews
- ▶ Automatic Enforcement of Requirements
 - Such as Sample Plans, First Articles & Approval Authorities
- ▶ Validate all relevant information is entered into the system, and is retained on file

Identify Nonconforming Material to Reduce Risk



Closed-loop CAPA process tracks issues from initiation through disposition and corrective action.

Streamline Quality Inspections

▶ Source Inspection

- Validate compliance with engineering drawings
- Test castings and forgings before firearm or robotic production begins

▶ First Article Inspection

- Test components against industry regulations

▶ Receiving Inspection

- Inspection steps can be revised and approved at the part number, part group, and commodity level
- Skip lot processing can be completed at the part/operation level

Genealogy/Configuration Management

- ▶ Enforcement of Requirements
(Serial Number, Lot Code, UID, etc.)
- ▶ Ensure All Issues are Resolved Before Product Release
 - All inspections completed
 - All Nonconformances resolved
 - All deviations approved
- ▶ Ability to Rapidly Identify Suspect Material for Recalls



The Importance of Product Genealogy

Product genealogy is powerful information that can be used to improve overall quality, increase efficiencies and provide the following benefits:

- ▶ Documented audit trail
- ▶ Improved quality tracking
- ▶ Fewer product defects and recalls
- ▶ Helps maintain industry compliance
- ▶ Streamlines shop floor operations
- ▶ Holds suppliers accountable



Statistical Process Control

- ▶ Categorize issues using different measurable codes
- ▶ Create a formal resolution process
- ▶ Standardize workflow
- ▶ Identify trends

Reports become consistent across locations, which makes it easy to roll out real-time data across the organization.

Managers can react instantly to variations in manufacturing operations and successfully identify process trends that in the end lead to fewer product defects.



Supply Chain Challenges

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Manage Your Supply Chain

An effective QMS will allow you to map your supply chain by giving you the ability to indicate primary and sub-tier supplier relations.

This provides the ability to build a standardized approach to managing supplier information.



Easily Identify and Categorize Suppliers

Authorized Distributor

Franchised Distributor

Independent Distributor

Open Market

OCM/OEM

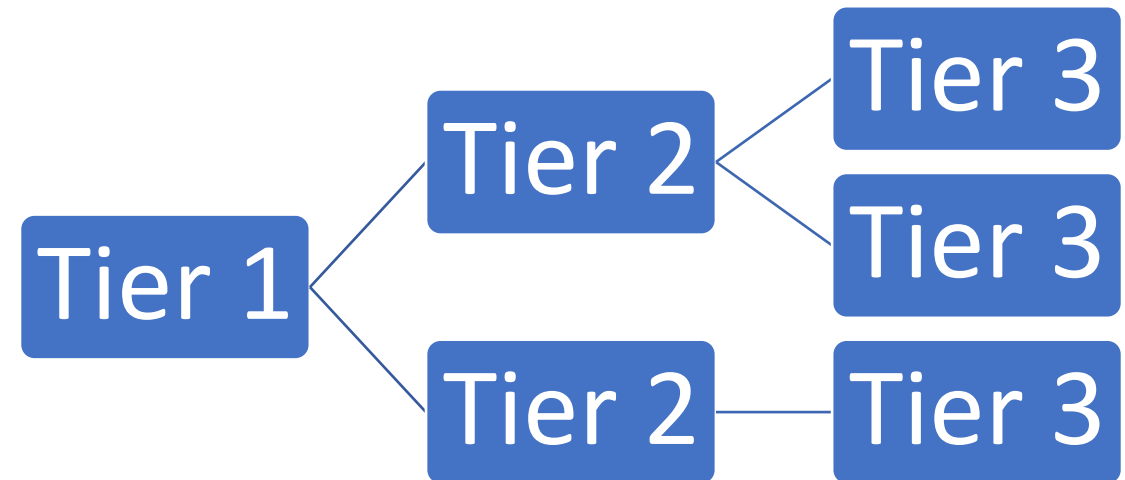
Effective Supply Chain Quality

▶ Manage the Entire Supply Chain

- Delivery
- Price
- Quality

▶ All Levels

- Tier 1 Suppliers
 - Suppliers to Tier 1 “N” Tier
- Tier 2 Suppliers
 - Supplier to Tier 1
 - Suppliers to Tier 2 “N” Tier
- Tier 3 Suppliers
 - Suppliers to Tier 2
 - Suppliers to Tier 3 “N” Tier
- And next level and beyond....



Supplier Ratings Address these Challenges

- ▶ Inadequate or Totally Lacking Supplier Rating System
- ▶ Adversarial Relationship with Suppliers
- ▶ Non-Objective Supplier Evaluation/Rating
- ▶ Paper-based Supplier Report Cards
- ▶ Inclusion of Supplier Caused Production Assembly Failures into Supplier's Rating
- ▶ Inclusion of PO Delivery concepts prior to actual delivery
- ▶ Sub-tier Supplier Management
- ▶ Uncovers performance trends & helps Identify Root Cause



Cost of Poor Quality

Factors that Contribute to Poor Quality

- ▶ Non value-added appraisal and prevention
- ▶ Internal error costs such as scrap & rework
- ▶ External costs due to warranty issues
- ▶ Lack of collaboration between suppliers and buyers
- ▶ Poor internal communication
- ▶ Experience of individual on product line
- ▶ Insufficient/lack of experience of certified material or personnel
- ▶ Indirect costs such as poor customer service or damage to company reputation

Recover the Cost of Poor Quality

- ▶ Companies can track Key Performance Indicators (KPIs) for display in dashboard format to effectively track performance
- ▶ Manufacturers can choose to end a poor performing supplier relationship or pursue a supplier charge-back
- ▶ Better record keeping of supplier performance
- ▶ Material inspection prior to shipment from supplier
- ▶ Personnel certification program for inspectors

Seamless ERP Integration

- ▶ Real-time access to quality and manufacturing data
- ▶ Supports real-time process control
- ▶ Provides the flexibility to respond quickly to changes in inventory levels, production status, and regulatory updates
- ▶ Reduces the complexity of multi-site infrastructure
- ▶ Actionable data and enhanced operational visibility allows better decisions across the enterprise

Facilitate Industry Compliance

- ▶ Compliance Auditing to Regulatory Standards
 - Facilitate compliance with many regulatory requirements including ISO, ITAR, DFARS, FAA, AS9100D, MIL Standard.
 - Measure against your established processes and procedures
 - Using a QMS with supplier management capabilities, customers can effectively demonstrate compliance



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Thank You!

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